



ENGINEERING, REIMAGINED

DRAFT

Big Sandy Medical Center Stormwater Improvements

September 2024

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0.0 EXECUTIVE SUMMARY

Big Sandy first became a town in 1887 with the arrival of the Great Northern Railroad. Big Sandy Medical Center was established in 1965. The foundation of the storm sewer system was laid when the Town was initially developed, and the streets were graded by residents in the early 1900's. The poor stormwater drainage in the area adjacent to the Big Sandy Medical Center cause safety issues for residents. The roads and sidewalks are continually flooded, hampering access for patients, providers, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. This Preliminary Engineering Report (PER) investigates alternatives to improve stormwater drainage in the areas adjacent to the Big Sandy Medical Center and the Clinic to improve patient, visitor, and provider safety.

1.0 PROJECT PLANNING

1.1 LOCATION

The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in the SE ¼ of the SW ¼ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°). The planning area considered in this report is centered primarily on the streets surrounding the Big Sandy Medical Center: 2nd Street, McNamara Ave, the alley NW of the Medical Center, and the alleys NE and SW of the Clinic.

1.1.1 GEOGRAPHY AND LAND USE

Land use within the planning area consists of low to medium density residential housing and commercial development within the corporate limits of the Town of Big Sandy. The proposed improvements will not impact existing land uses. All improvements will be performed within the Town of Big Sandy.

1.1.2 CLIMATE

The nearest place to Big Sandy with weather data is Fort Benton. In Fort Benton, the summers are short, warm, and mostly clear and the winters are freezing, snowy, windy, and partly cloudy. Over the course of the year, the temperature typically varies from 18°F to 88°F and is rarely below -8°F or above 98°F. [1]

The hot season lasts for 2.8 months, from June 15 to September 10, with an average daily high temperature above 77°F. The hottest month of the year in Fort Benton is July, with an average high of 86°F and low of 59°F. The cold season lasts for 3.5 months, from November 17 to March 1, with an average daily high temperature below 45°F. The coldest month of the year in Fort Benton is January, with an average low of 20°F and high of 37°F. [1]

A wet day is one with at least 0.04 inches of liquid or liquid-equivalent precipitation. The chance of wet days in Fort Benton varies throughout the year. The wetter season lasts 2.2 months, from May 5 to July 12, with a greater than 19% chance of a given day being a wet day. The month with the most wet days in Fort Benton is June, with an average of 8.5 days with at least 0.04 inches of precipitation. The drier season lasts 9.8 months, from July 12 to May 5. The month with the fewest wet days in Fort Benton is February, with an average of 1.5 days with at least 0.04 inches of precipitation. [1]

Table 1: Average Highs, Lows, Rainfall, and Snowfall in Fort Benton, Montana

Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	37°F	41°F	50°F	61°F	69°F	77°F	86°F	86°F	75°F	61°F	46°F	37°F
Low	20°F	22°F	29°F	37°F	46°F	53°F	59°F	58°F	49°F	40°F	29°F	21°F
Rainfall	0.1"	0.1"	0.4"	0.9"	2.0"	2.2"	1.1"	1.0"	1.1"	0.6"	0.2"	0.1"
Snowfall	1.6"	1.2"	1.4"	0.7"	0.1"	0.0"	0.0"	0.0"	0.0"	0.3"	1.3"	1.7"

Figure 1: Town of Big Sandy General Location



1.2 ENVIRONMENTAL RESOURCES PRESENT

All state and federally funded projects are subject to either the Montana Environmental Policy Act (MEPA) or the National Environmental Policy Act of 1969 (NEPA), or both. MEPA seeks to avoid or mitigate adverse impacts on the natural and human environment by mandating careful consideration of the potential impacts of any development assisted with state funds or approved by a state agency. NEPA establishes national policy, goals, and procedures for protecting, restoring, and enhancing environmental quality. In accordance with NEPA and MEPA the Uniform Environmental Checklist was completed and can be found in **EXHIBIT J**. Maps and reports to support the Uniform Environmental Checklist can be found in **EXHIBIT K**.

The following agencies were contacted to identify any potential environmental impacts associated with the planned project. Correspondence with these agencies can be found in **EXHIBIT H**.

- » Choteau County
- » Montana Department of Commerce, Census and Economic Information Center
- » Montana Department of Environmental Quality
- » Montana Department of Labor and Industry
- » Montana Department of Natural Resources and Conservation
- » Montana Department of Transportation
- » Montana Fish, Wildlife & Parks
- » Montana State Historic Preservation Office
- » U.S. Army Corps of Engineers
- » U.S. Bureau of Land Management
- » U.S. Department of Transportation
- » U.S. Environmental Protection Agency
- » U.S. Fish & Wildlife Service
- » U.S. Natural Resource Conservation Service
- » Chippewa Cree Tribe of the Rocky Boy's Reservation

The environmental resources present in the project area is summarized below.

1.2.1 LAND USE CHANGES

According to the Montana Natural Heritage Program, the primary land uses of the Big Sandy area consists of cultivate crops (50%), introduced upland vegetation (19%), great plains mixedgrass prairie (9%), pasture/hay (7%), other roads (4%), commercial/industrial (2%), developed open space (2%), low intensity residential (2%), and major roads (2%). The land cover map from the Montana Natural Heritage Program, the land management map from the Montana Natural Heritage Program, and the Natural Resource Conservations Service Soil Survey map is attached in **EXHIBIT K** [2, 3].

1.2.2 WILDLIFE AND VEGETATION

Wildlife and aquatic resources are considered a significant natural asset in the Big Sandy community. The Bear's Paw Mountains and the Missouri River Breaks are near and are popular areas with hunters and hikers. There are significant populations of deer, elk, antelope and bighorn sheep, providing excellent big game hunting opportunities in the area. The proposed project is confined to previously disturbed land. The United States Fish and Wildlife Service species list report, the Montana Natural Heritage Program species observations report, and the Montana Sage Grouse Habitat map is attached in **EXHIBIT K** [4, 2, 5].

1.2.3 WATER RESOURCES

Surface water in the area is limited to Big Sandy Creek and the Missouri River approximately 10 miles to the south. Ground water is present at about 130 feet below the surface. No adverse impacts to water resources are anticipated as a result of the proposed project. There may be a very minor increase in sediment transport associated with construction activities for this project. However, no long-term detrimental effects to surface water or groundwater are foreseen.

1.2.4 WETLANDS AND FLOOD PLAINS

Chouteau County does not participate in a flood insurance program, and the County has not been mapped for flood plains. There are no known wetlands within the project boundaries. The nearest wetland is 0.3 miles east of the Big Sandy Medical Center which is a 0.77-acre Freshwater Emergent Wetland habitat. The National Wetland Inventory (NWI) map is attached in **EXHIBIT K** [6].

1.2.5 HISTORICAL, CULTURAL, AND ARCHAEOLOGICAL SITES

Cultural resources include historic and prehistoric archaeological sites, historic architecture, engineering features and structures and resources of significance. The Montana State Historic Preservation Office (SHPO) was contacted to complete a cultural resource file search for the Vaughn area. The Montana SHPO stated that, "as long as there will be no disturbance or alteration to structures over fifty years of age and the project will be kept within previously disturbed ground, we feel that there will be no cultural or historic properties affected by this undertaking." Their correspondence is attached in **EXHIBIT H** [7].

1.2.6 SOCIOECONOMIC IMPACTS

There is no known disproportionate increase in environmental or public health impacts to minority and low-income persons due to this project. The entire community would benefit from improving stormwater drainage at the Medical Center. There are no anticipated negative impacts regarding environmental justice. The EPA EJSscreen report is attached in **EXHIBIT K** [8].

1.3 POPULATION TRENDS

The total population, median household income, and poverty rate for the town of Big Sandy and Chouteau County at large are summarized in **Table 2** below [9]. The population change over time is summarized in **Table 3** below.

Table 2: Socioeconomic Trends for the Town of Big Sandy and Chouteau County

Year	Town of Big Sandy			Chouteau County		
	Total Population	Median Household Income	Poverty Rate	Total Population	Median Household Income	Poverty Rate
2011	594	33,466	14%	5,812	40,825	20%
2012	609	33,611	16%	5,933	41,232	18%
2013	600	32,500	21%	5,854	40,070	21%
2014	605	34,375	16%	5,902	41,270	21%
2015	591	36,607	18%	5,777	38,521	23%
2016	589	35,294	24%	5,780	38,735	22%
2017	581	39,464	19%	5,738	39,577	20%
2018	581	42,321	14%	5,759	40,942	19%
2019	567	40,893	12%	5,681	42,298	17%
2020	597	42,137	14%	5,699	45,707	14%
2021	596	48,036	11%	5,916	48,237	14%
2022	599	47,169	14%	5,898	51,791	15%

Table 3: Population Change Over Time for the Town of Big Sandy and Chouteau County

Year	Town of Big Sandy Population	Percent Change	Chouteau County Population	Percent Change
2011	594	-	5,812	-
2012	609	2.53%	5,933	2.08%
2013	600	-1.48%	5,854	-1.33%
2014	605	0.83%	5,902	0.82%
2015	591	-2.31%	5,777	-2.12%
2016	589	-0.34%	5,780	0.05%
2017	581	-1.36%	5,738	-0.73%
2018	581	0.00%	5,759	0.37%
2019	567	-2.41%	5,681	-1.35%
2020	597	5.29%	5,699	0.32%
2021	596	-0.17%	5,916	3.81%
2022	599	0.50%	5,898	-0.30%

1.4 COMMUNITY ENGAGEMENT

The town of Big Sandy has engaged the community regarding this project with a public hearing. The public hearing was held on [DATE], at the [LOCATION]. The goal of the meeting was to inform the community of the plans for stormwater improvements and to request opinions on the plans and options being presented to the City. The public was provided information about the plans, alternatives analyzed, and the estimated cost for the construction. The meeting was recorded, and its minutes can be found at [website], The public hearing meeting minutes can be found in **EXHIBIT I**.

2.0 EXISTING FACILITIES

2.1 LOCATION MAP

- » A map of the general location of Big Sandy is shown in **Figure 1**.
- » A map of the location of the Big Sandy Medical Center is shown in **Figure 2**.
- » A map of the project area and areas of concern is shown in **Figure 3**.

2.2 HISTORY

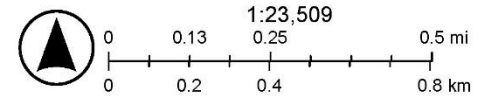
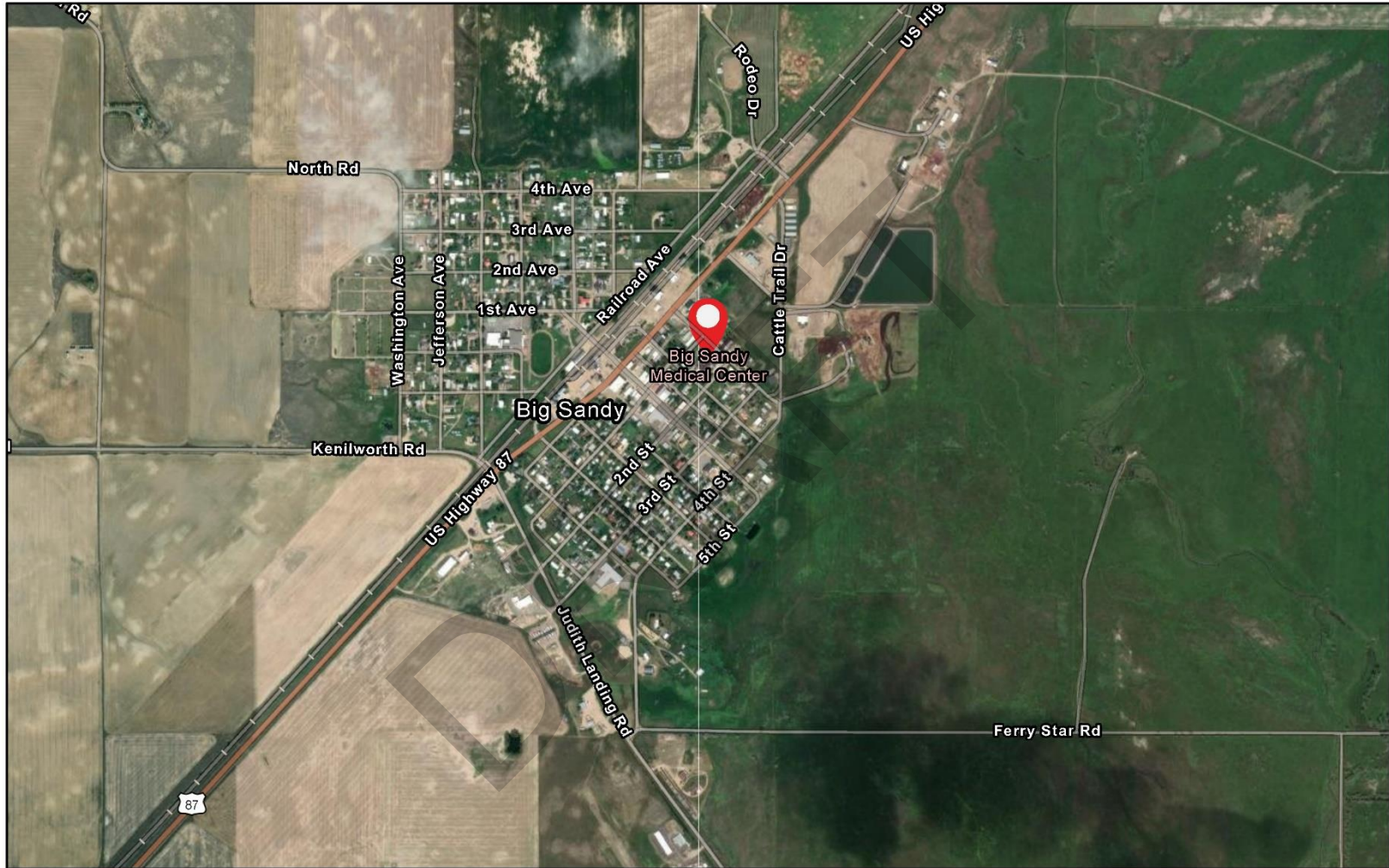
The Town of Big Sandy began as an oxen freight depot along the Missouri River in the mid 1800's. Cornelius J McNamara and Thomas A. Marlow, owners of the M&M Ranch, brought commerce to the area by opening the first store. Saloons, a hotel and a bank were soon to follow and by the early 1900s, Big Sandy became a homesteader's boom town. Today, Big Sandy supports over 50 businesses in town and the surrounding area. The storm sewer system and the streets were laid when the Town was initially developed. It is estimated that the storm water system for Big Sandy was initially installed in the early 1900's.

By the 1960s, it was evident that a dedicated medical facility was needed to retain a community doctor. Efforts to raise funds for such a facility began in 1962, leading to the establishment of the Big Sandy Medical Center (BSMC) in 1965. Today, the Big Sandy Medical Center provides comprehensive healthcare services ranging from well-child checks to hospice care and provides both primary and emergency medical care.

2.3 CONDITION OF EXISTING FACILITIES

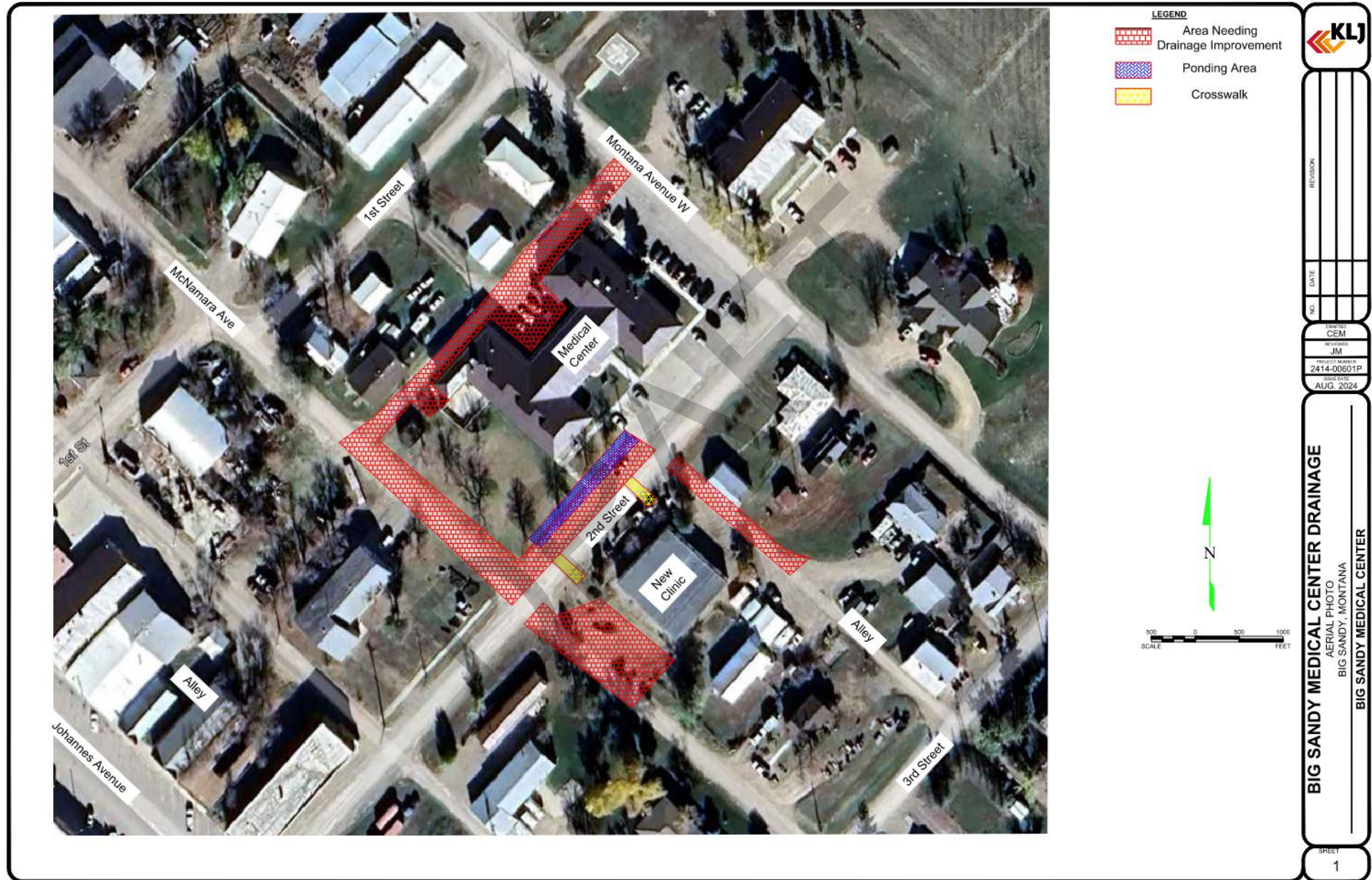
The poor stormwater drainage in the area adjacent to the Big Sandy Medical Center and the Clinic cause safety issues for residents. The roads and sidewalks are continually flooded, hampering access for patients, providers, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. The images shown in **Figure 4**, **Figure 5**, **Figure 6**, and **Figure 7** demonstrate large areas of ponding and muddy conditions on the unpaved streets and sidewalks surrounding the medical facilities.

Figure 2: Big Sandy Medical Center Location



Montana State Library, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US

Figure 3: Big Sandy Hospital Project Area



Aug 22, 2024 - 11:37am - K:\Projects\City\MT\BigSandy\2414-00601 Big Sandy Medical Center\CAD\Survey\Big Sandy Medical Center exhibit.dwg

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Figure 4: Ponding on 2nd St, Date Unknown



Figure 5: Ponding on McNamara Road, March 2023



Figure 6: Ponding in Alley, Date Unknown



Figure 7: Ponding in Alley Behind Hospital, May 2024

2.4 FINANCIAL STATUS OF EXISTING FACILITIES

The town of Big Sandy uses money from its sewer fund for stormwater related expenses and projects. The town has provided the income, annual O&M costs, debts, and reserves for sewers the previous three fiscal years, which is summarized below.

2.4.1 INCOME

A summary of the town of Big Sandy’s income for sewers the previous three fiscal years is provided in **Table 4**.

Table 4: Summary of Big Sandy’s Income for Sewer

Description	FY22	FY23	FY24
Revenue - On-behalf payment	\$2,468.01	\$1,101.13	
Sewer Service Charges	\$264,670.07	\$265,968.64	\$265,384.69
Miscellaneous Sewer Revenue		\$104.00	
Miscellaneous Revenue		\$7,809.70	
Interfund Operating Transfer		\$1,197,408.10	
Total	\$267,138.08	\$1,472,391.57	\$265,384.69

2.4.2 ANNUAL O&M COSTS

A summary of the town of Big Sandy’s O&M costs for sewers for the previous three fiscal years is provided in **Table 5**. Based on the expenses for FY23, the annual O&M costs for stormwater was estimated and is provided in **Table 6**.

Table 5: Summary of Big Sandy’s O&M Costs for Sewer

Description	FY22	FY23	FY24
Salaries and Wages	\$31,398.01	\$26,864.00	\$25,451.36
Employee Benefits	-\$634.91	\$504.34	
Medicare	\$440.20	\$374.53	\$353.98
Unemployment Insurance	\$91.52	\$75.67	\$50.50
F.I.C.A.	\$1,881.79	\$1,600.71	\$1,513.13
P.E.R.S.	\$2,368.94	\$1,939.79	\$2,258.54
Other Non-Cash Personal Items	-\$2,544.98	\$3,743.37	
Supplies	\$8,758.47	\$9,098.61	\$9,332.85
Other Repair & Maintenance Supplies	\$3,297.17	\$5,118.00	\$5,350.51
Purchased Services	\$4,922.35	\$17,640.25	\$11,352.79
Utility Services	\$11,273.17	\$10,822.72	\$12,502.48
Professional Services	\$809.57	\$626.25	\$4,831.25
Other Purchased Services		\$5.00	
Fixed Charges	\$7,693.46	\$8,528.42	\$7,077.83
Other Objects		\$104.00	
Deprec-Closed to Retained Earnings	\$197,008.00	\$212,070.00	
Principal			\$44,652.44
Interest	\$96,770.43	\$95,023.05	\$93,215.56
Total	\$363,533.19	\$394,138.71	\$217,943.22

Table 6: Big Sandy's Estimated O&M Costs for Stormwater

Description	O&M Costs
Salaries and Wages	\$26,900.00
Employee Benefits	\$600.00
Medicare	\$400.00
Unemployment Insurance	\$100.00
F.I.C.A.	\$1,700.00
P.E.R.S.	\$2,000.00
Other Non-Cash Personal Items	\$3,800.00
Supplies	\$9,100.00
Other Repair & Maintenance Supplies	\$5,200.00
Purchased Services	\$17,700.00
Utility Services	\$10,900.00
Professional Services	\$700.00
Fixed Charges	\$8,600.00
Total	\$87,700.00

2.4.3 DEBT REPAYMENT

A summary of the town of Big Sandy's debts for the previous three fiscal years is provided in **Table 7**.

Table 7: Summary of Big Sandy's Debts

Description	FY22	FY23	FY24
Accounts Payable	\$2,195.70	\$2,189.61	\$2,197.60
Deferred Revenue - Other	\$10,960.93	\$2,614.39	\$2,614.39
LONG-TERM LIABILITIES	\$2,056,065.79	\$2,020,795.50	\$2,020,795.50
USDA Rural Development	\$400,818.04	\$393,243.38	\$393,243.38
Net Pension Liability	\$26,581.60	\$35,711.19	\$35,711.19
Compensated Absences Payable	\$4,521.46	\$5,025.80	\$5,025.80
RESERVES	\$66,310.00	\$66,310.00	\$66,310.00
Restricted for Revenue Bond Future	\$7,871.00	\$7,871.00	\$7,871.00
Unreserved Fund Balance	\$33,799.94	\$33,799.94	\$33,799.94
Unreserved Retained Earnings	\$819,237.55	\$1,834,301.14	\$1,881,742.61
Special Revenue Fund	\$2,399,543.00	\$2,399,543.00	\$2,399,543.00
Total	\$5,827,905.01	\$6,801,404.95	\$6,848,854.41

2.4.4 RESERVES

A summary of the town of Big Sandy's reserves for the previous three fiscal years is provided in **Table 8**.

Table 8: Summary of Big Sandy's Reserves

Description	FY22	FY23	FY24
Cash - Operating	\$25,235.52	\$15,107.03	\$41,961.02
Cash - Reserve (Future Payment)	\$125,763.00	\$139,563.00	\$153,363.00
RD - Line Cleaning Reserves	\$17,552.80	\$20,060.80	\$22,568.80
Short Lived Asset Replacement Reserve	\$72,600.00	\$55,600.00	\$60,892.00
Accounts Receivable	\$31,378.33	\$32,219.85	\$31,215.32
Land	\$5,360.00	\$5,360.00	\$5,360.00
Improvements Other Than Buildings	\$5,312.00	\$5,312.00	\$5,312.00
Allow for Depr-Imp Other Than Bldgs	-\$5,312.00	-\$5,312.00	-\$5,312.00
Machinery and Equipment	\$25,467.37	\$32,967.37	\$32,967.37
Allow for Depr - Machinery & Equip	-\$25,467.37	-\$25,655.37	-\$25,655.37
Pumping Plant	\$195,000.00	\$195,000.00	\$195,000.00
Allow for Depr - Pumping Plant (Credit)	-\$108,063.00	-\$117,813.00	-\$117,813.00
Treatment Plant	\$649,032.05	\$649,032.05	\$649,032.05
Allow for Depr - Treatment Plant	-\$584,131.00	-\$600,357.00	-\$600,357.00
Transmission & Distribution	\$6,841,298.55	\$8,031,206.65	\$8,031,206.65
Allow for Depr-Trans & Distribution	-\$1,450,838.00	-\$1,636,744.00	-\$1,636,744.00
Deferred Outflow of Resources	\$7,716.76	\$5,857.57	\$5,857.57
Total	\$5,827,905.01	\$6,801,404.95	\$6,848,854.41

2.5 WATER/ENERGY/WASTE AUDITS

There are no water, energy, or waste audits available at this time.

3.0 NEED FOR PROJECT

3.1 HEALTH, SANITATION, AND SECURITY

There are significant deficiencies in the stormwater management system and street infrastructure around the Big Sandy Medical Center and Clinic. The streets and storm sewer system were laid out in the early 1900s, and is inadequate for managing current stormwater volumes. The streets surrounding these critical healthcare facilities are unpaved, leading to severe ponding and muddy conditions. The flooding around the Big Sandy Medical Center and Clinic have a broad and significant impact on the entire community. These issues directly impact the community in the following ways:

- » **Access and Safety:** The presence of large puddles and muddy conditions impedes safe access to the medical center for patients, visitors, and emergency vehicles, particularly during adverse weather conditions. This poses a significant safety risk, particularly for vulnerable populations, including the elderly and those with mobility challenges.
- » **Emergency Services:** The condition of these roads may hinder the timely arrival of emergency services, which is critical for a medical facility. This delay can have serious repercussions on patient outcomes in emergencies.
- » **Public Safety:** The poor condition of streets and sidewalks creates safety hazards for anyone traveling in the area, including pedestrians, drivers, and cyclists.
- » **Health Risks:** Standing water can become a breeding ground for mosquitoes and other pests, potentially increasing the risk of vector-borne diseases. Additionally, the poor condition of the streets and sidewalks increases the likelihood of accidents and injuries.

3.2 AGING INFRASTRUCTURE

The streets and stormwater system were laid out in the early 1900s and was likely designed to meet the needs of a much smaller population and lower volumes of runoff. The stormwater management issues around the Big Sandy Medical Center and Clinic are ongoing, continual, and long-term.

The images shown in **Figure 4**, **Figure 5**, **Figure 6**, and **Figure 7** demonstrate large areas of ponding and muddy conditions on the unpaved streets and sidewalks surrounding the medical facilities. Local observations and reports confirm that these issues occur consistently during any rainfall, creating hazardous conditions for residents, patients, and staff at the medical center.

3.3 REASONABLE GROWTH

The stormwater system provides inadequate drainage of surface water from the road. Without proper drainage and maintenance, roads and pavements deteriorate more quickly, leading to more frequent repairs, higher maintenance costs, and shorter infrastructure lifespans. Improving the storm sewer system's drainage will improve the lifespan of roads and pavements.

4.0 ALTERNATIVES CONSIDERED

This project has been divided into 3 phases, which are described in **Table 9** below.

Conceptual layouts for the alternatives in Phase 1, Phase 2, and Phase 3 can be found in the appendices in **EXHIBIT A**, **EXHIBIT B**, and **EXHIBIT C**, respectively.

Table 9: Description of Alternatives Considered

Phase	Alternative No.	Description of Alternative
Phase 1 - 2nd St	Alternative 1	No Action
	Alternative 2	Redo sidewalk
		New curb and gutter
		Regrade street to increase slope
		Construct crosswalks
		Construct Stormwater pond
	Alternative 3	Redo sidewalk
		New curb and gutter
		Regrade street to increase slope
		Construct crosswalks
		Pave McNamara Ave from 2nd St to 1st St
	Phase 2 - Alleys NE and SW of Clinic	Alternative 1
Alternative 2		Pave alleys
		Construct Infiltration Gallery
Alternative 3		Pave alleys
		Increase elevation of roads
		Construct curb and gutter
Phase 3 - Alley behind Medical Center	Alternative 1	No Action
	Alternative 2	Pave parking lots
		Regrade alley and install valley gutter
		Construct valley gutter for stormwater pond
		Construct valley gutter on McNamara Ave
	Alternative 3	Pave parking lots
		Pave alley

4.1 PHASE 1 ALTERNATIVES

4.1.1 DESCRIPTION

A summary of the Phase 1 Alternatives is described below.

Phase 1 Alternative 1	Phase 1 Alternative 2	Phase 1 Alternative 3
» No Action	» Redo sidewalk	» Redo sidewalk
	» New curb and gutter	» New curb and gutter
	» Regrade street to increase slope	» Regrade street to increase slope
	» Construct crosswalks	» Construct crosswalks
	» Construct Stormwater pond	» Pave McNamara Ave from 2nd St to 1st St

4.1.2 DESIGN CRITERIA

The Montana Department of Transportation (MDT) and Montana Department of Environmental Quality (DEQ) establish design standards applicable to stormwater projects. These design standards are outlined in the MDT Road Design Manual and DEQ Circular 8 and serve as the primary design standards this alternative [10, 11].

4.1.3 PROJECT LOCATION MAP

- » A map of the general location of Big Sandy is shown in **Figure 1**.
- » A map of the location of the Big Sandy Medical Center is shown in **Figure 2**.
- » A map of the project area is shown in **Figure 3**.

4.1.4 ENVIRONMENTAL IMPACTS

- » The environmental resources present were discussed in **Section 1.2** of this report.
- » The environmental impacts of this project were assessed in accordance with NEPA and MEPA using the Uniform Environmental Checklist, which can be found in **EXHIBIT J**.
- » Agencies were contacted to identify any potential environmental impacts associated with the planned project. Correspondence with these agencies and their responses can be found in **EXHIBIT H**.

4.1.5 LAND REQUIREMENTS

Most of the project area lies within the City-owned ROW or on property owned by the Big Sandy Medical Center. If needed, temporary construction easements will be obtained. The City will need to secure the easements with the corresponding landowners.

4.1.6 POTENTIAL CONSTRUCTION PROBLEMS

4.1.7 COST ESTIMATE

The capital costs and annual O&M costs for the Phase 1 alternatives were estimated as shown in **Table 10** below. The annual O&M costs is not expected to significantly change between each alternative. A detailed breakdown of the capital cost estimates can be found in **EXHIBIT E** in the Appendices.

Table 10: Phase 1 Alternatives Cost Estimate Summary

Description	Phase 1 Alternative 1	Phase 1 Alternative 2	Phase 1 Alternative 3
Capital Cost	\$0.00	\$345,038.40	\$527,870.88
Annual O&M Costs	\$87,700.00	\$87,700.00	\$87,700.00

4.2 PHASE 2 ALTERNATIVES

4.2.1 DESCRIPTION

A summary of the Phase 2 Alternatives is described below.

Phase 2 Alternative 1

- » No Action

Phase 2 Alternative 2

- » Pave alleys
- » Construct Infiltration Gallery

Phase 2 Alternative 3

- » Pave alleys
- » Increase elevation of roads
- » Construct curb and gutter

4.2.2 DESIGN CRITERIA

The Montana Department of Transportation (MDT) and Montana Department of Environmental Quality (DEQ) establish design standards applicable to stormwater projects. These design standards are outlined in the MDT Road Design Manual and DEQ Circular 8 and serve as the primary design standards this alternative [10, 11].

4.2.3 PROJECT LOCATION MAP

- » A map of the general location of Big Sandy is shown in **Figure 1**.
- » A map of the location of the Big Sandy Medical Center is shown in **Figure 2**.
- » A map of the project area is shown in **Figure 3**.

4.2.4 ENVIRONMENTAL IMPACTS

- » The environmental resources present were discussed in **Section 1.2** of this report.
- » The environmental impacts of this project were assessed in accordance with NEPA and MEPA using the Uniform Environmental Checklist, which can be found in **EXHIBIT J**.
- » Agencies were contacted to identify any potential environmental impacts associated with the planned project. Correspondence with these agencies and their responses can be found in **EXHIBIT H**.

4.2.5 LAND REQUIREMENTS

Most of the project area lies within the City-owned ROW or on property owned by the Big Sandy Medical Center. If needed, temporary construction easements will be obtained. The City will need to secure the easements with the corresponding landowners.

4.2.6 POTENTIAL CONSTRUCTION PROBLEMS

4.2.7 COST ESTIMATE

The capital costs and annual O&M costs for the Phase 2 alternatives were estimated as shown in **Table 11** below. The annual O&M costs is not expected to significantly change between each alternative. A detailed breakdown of the capital cost estimates can be found in **EXHIBIT G** in the Appendices.

Table 11: Phase 2 Alternatives Cost Estimate Summary

Description	Phase 2 Alternative 1	Phase 2 Alternative 2	Phase 2 Alternative 3
Capital Cost	\$0.00	\$195,559.92	\$210,121.92
Annual O&M Costs	\$87,700.00	\$87,700.00	\$87,700.00

4.3 PHASE 3 ALTERNATIVES

4.3.1 DESCRIPTION

This alternative involves the following:

Phase 3 Alternative 1

- » No Action

Phase 3 Alternative 2

- » Pave parking lots
- » Regrade alley and install valley gutter
- » Construct valley gutter for stormwater pond
- » Construct valley gutter on McNamara Ave

Phase 3 Alternative 3

- » Pave parking lots
- » Pave alley

4.3.2 DESIGN CRITERIA

The Montana Department of Transportation (MDT) and Montana Department of Environmental Quality (DEQ) establish design standards applicable to stormwater projects. These design standards are outlined in the MDT Road Design Manual and DEQ Circular 8 and serve as the primary design standards this alternative [10, 11].

4.3.3 PROJECT LOCATION MAP

- » A map of the general location of Big Sandy is shown in **Figure 1**.
- » A map of the location of the Big Sandy Medical Center is shown in **Figure 2**.
- » A map of the project area is shown in **Figure 3**.

4.3.4 ENVIRONMENTAL IMPACTS

- » The environmental resources present were discussed in **Section 1.2** of this report.
- » The environmental impacts of this project were assessed in accordance with NEPA and MEPA using the Uniform Environmental Checklist, which can be found in **EXHIBIT J**.
- » Agencies were contacted to identify any potential environmental impacts associated with the planned project. Correspondence with these agencies and their responses can be found in **EXHIBIT H**.

4.3.5 LAND REQUIREMENTS

Most of the project area lies within the City-owned ROW or on property owned by the Big Sandy Medical Center. If needed, temporary construction easements will be obtained. The City will need to secure the easements with the corresponding landowners.

4.3.6 POTENTIAL CONSTRUCTION PROBLEMS

4.3.7 COST ESTIMATE

The capital costs and annual O&M costs for the Phase 3 alternatives were estimated as shown in **Table 12** below. The annual O&M costs is not expected to significantly change between each alternative. A detailed breakdown of the capital cost estimates can be found in **EXHIBIT G** in the Appendices

Table 12: Phase 3 Alternatives Cost Estimate Summary

Description	Phase 2 Alternative 1	Phase 2 Alternative 2	Phase 2 Alternative 3
Capital Cost	\$0.00	\$195,559.92	\$210,121.92
Annual O&M Costs	\$87,700.00	\$87,700.00	\$87,700.00

5.0 SELECTION OF AN ALTERNATIVE

5.1 LIFE CYCLE COST ANALYSIS

A life cycle cost analysis was completed for all alternatives based on a 20-year life span incorporating the initial costs, the annual O&M costs of the life span, and the Real Discount Rates taken from Appendix C of the Office of Management and Budget (OMB) circular A-94 for the calendar year 2023, revised December 28, 2023 [12]. Using 2.5 percent rate (i) and an assumed 20-year period (n), the uniform series present worth (USPW) and the single payment present worth (SPPW) factors were determined. The USPW factor was used to convert annual O&M costs to present worth, and the SPPW factor was used to convert the 20-year salvage value to present worth.

$$USPW \text{ Factor} = \frac{(1 + i)^n - 1}{i(1 + i)^n}$$

$$SPPW \text{ Factor} = (1 + i)^{-n}$$

$$Present \text{ Worth Costs} = C + O\&M$$

$$Net \text{ Present Value} = C + O\&M - S$$

Where:

- USPW Factor = Uniform Series Present Worth Factor
- SPPW Factor = Single Payment Present Worth Factor
- i = Interest rate
- n = Number of years
- C = Capital Cost
- O&M = Operation and maintenance costs, in terms of present worth value
- S = Salvage value, in terms of present worth value

The life cycle cost analyses for each phase's alternatives are shown in **Table 13**, **Table 14**, and **Table 15**. A summary of the life cycle cost analyses is shown in **Table 16** below. The annual O&M costs is not expected to significantly change between each alternative.

Table 13: Life Cycle Cost Analysis of Phase 1 Alternatives

Description	Phase 1 Alternative 1	Phase 1 Alternative 2	Phase 1 Alternative 3
Capital Cost	\$0.00	\$345,038.40	\$527,870.88
Annual O&M Costs	\$87,700.00	\$87,700.00	\$87,700.00
20-Year Salvage Value	\$0.00	\$172,519.20	\$263,935.44
Interest Rate	2.5%	2.5%	2.5%
USPW Factor	15.5892	15.5892	15.5892
SPPW Factor	0.6103	0.6103	0.6103
O&M, Present Worth	\$1,367,172.84	\$1,367,172.84	\$1,367,172.84
Salvage Value, Present Worth	\$0.00	\$105,288.47	\$161,079.80
Present Worth Costs	\$1,367,172.84	\$1,712,211.24	\$1,895,043.72
Net Present Value	\$1,367,172.84	\$1,606,922.77	\$1,733,963.92

Table 14: Life Cycle Cost Analysis of Phase 2 Alternatives

Description	Phase 2 Alternative 1	Phase 2 Alternative 2	Phase 2 Alternative 3
Capital Cost	\$0.00	\$195,559.92	\$210,121.92
Annual O&M Costs	\$87,700.00	\$87,700.00	\$87,700.00
20-Year Salvage Value	\$0.00	\$97,779.96	\$105,060.96
Interest Rate	2.5%	2.5%	2.5%
USPW Factor	15.5892	15.5892	15.5892
SPPW Factor	0.6103	0.6103	0.6103
O&M, Present Worth	\$1,367,172.84	\$1,367,172.84	\$1,367,172.84
Salvage Value, Present Worth	\$0.00	\$59,675.11	\$64,118.70
Present Worth Costs	\$1,367,172.84	\$1,562,732.76	\$1,577,294.76
Net Present Value	\$1,367,172.84	\$1,503,057.65	\$1,513,176.06

Table 15: Life Cycle Cost Analysis of Phase 3 Alternatives

Description	Phase 3 Alternative 1	Phase 3 Alternative 2	Phase 3 Alternative 3
Capital Cost	\$0.00	\$183,218.40	\$366,690.24
Annual O&M Costs	\$87,700.00	\$87,700.00	\$87,700.00
20-Year Salvage Value	\$0.00	\$91,609.20	\$183,345.12
Interest Rate	2.5%	2.5%	2.5%
USPW Factor	15.5892	15.5892	15.5892
SPPW Factor	0.6103	0.6103	0.6103
O&M, Present Worth	\$1,367,172.84	\$1,367,172.84	\$1,367,172.84
Salvage Value, Present Worth	\$0.00	\$55,909.09	\$111,895.53
Present Worth Costs	\$1,367,172.84	\$1,550,391.24	\$1,733,863.08
Net Present Value	\$1,367,172.84	\$1,494,482.15	\$1,621,967.55

Table 16: Life Cycle Cost Analysis Summary

Alternative	Capital Cost	Net Present Value	Rank
Phase 1			
Phase 1 Alternative 1	\$0.00	\$1,367,172.84	1
Phase 1 Alternative 2	\$345,038.40	\$1,606,922.77	2
Phase 1 Alternative 3	\$527,870.88	\$1,733,963.92	3
Phase 2			
Phase 2 Alternative 1	\$0.00	\$1,367,172.84	1
Phase 2 Alternative 2	\$195,559.92	\$1,503,057.65	2
Phase 2 Alternative 3	\$210,121.92	\$1,513,176.06	3
Phase 3			
Phase 3 Alternative 1	\$0.00	\$1,367,172.84	1
Phase 3 Alternative 2	\$183,218.40	\$1,494,482.15	2
Phase 3 Alternative 3	\$366,690.24	\$1,621,967.55	3

5.2 NON-MONETARY FACTORS

The common elements across phases are discussed below.

- » **No Action:** This alternative fails to address existing safety and accessibility issues, such as flooding, ice formation, and impaired access, leaving the problems unresolved. Additionally, it allows for further infrastructure deterioration, which could lead to more severe issues and higher repair costs in the future.
- » **Paving Streets:** Paving creates smooth and even surfaces that facilitate the efficient flow of stormwater. Properly paved areas encourage water to flow towards designated drainage systems.
- » **Regrading Streets:** Regrading streets drainage by directing stormwater away from critical areas, thereby reducing flooding and ice formation and enhancing safety. Proper grading also helps prolong the lifespan of pavement by preventing water accumulation that could otherwise damage the surface.
- » **Constructing New Sidewalks:** Redoing the sidewalks and constructing crosswalks improves accessibility and safety for pedestrians, particularly for the elderly and those with mobility issues, by reducing slip hazards and providing smooth walking surfaces.
- » **Constructing New Curbs and Gutters:** Installing new curbs and gutters enhances stormwater management by effectively channeling water away from pedestrian areas and streets, reducing flooding and preventing water pooling.
- » **Constructing Valley Gutters:** Valley gutters channel stormwater to designated collection points, reducing the risk of street and sidewalk flooding and improving stormwater flow management during heavy rains. These features help prevent surface water accumulation, which can be a significant safety hazard.
- » **Constructing Stormwater pond/infiltration gallery:** A stormwater pond effectively manages large volumes of stormwater by providing a storage area where water can be temporarily held and gradually released, thereby reducing peak flows and the risk of flooding. It can also offer environmental benefits by creating habitats for wildlife and helping to filter pollutants from runoff.

6.0 PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

Based on preliminary construction cost estimates, life cycle cost analysis, environmental factors, and examination of non-monetary factors, Alternative 2 for each phase is recommended. The recommended alternatives for this project are summarized in **Table 17** below.

Table 17: Recommended Alternatives

Phase	Recommended Alternative	Description of Alternative
Phase 1 - 2 nd St	Alternative 2	Redo sidewalk
		New curb and gutter
		Regrade street to increase slope
		Construct crosswalks
		Construct Stormwater pond
Phase 2 - Alleys NE and SW of Clinic	Alternative 2	Pave alleys
		Construct Infiltration Gallery
Phase 3 - Alley behind Medical Center	Alternative 2	Pave parking lots
		Regrade alley and install valley gutter
		Construct valley gutter for stormwater pond
		Construct valley gutter on McNamara Ave

6.1 PRELIMINARY PROJECT DESIGN

The details of the preliminary project design and the appropriate design criteria was discussed in Chapter 4.

6.2 PROJECT SCHEDULE

The anticipated project schedule is shown in **Table 18** below.

Table 18: Anticipated Project Schedule

Project Phase	Project Milestone	Estimated Date
Report Submission	Submit PER to Montana	September 2024
Design	Notice to Proceed	June 2025
	Survey/Geotechnical Investigation	July 2025
	60% Design	September 2025
	90% Design	October 2025
	Final Design	December 2025
	Ad for Bid	December 2024
Bidding	Pre-bid Conference	January 2026
	Bid Opening/Award	February 2026
Construction	Notice to Proceed	March 2026
	Construction Begins	March 2026
	Substantial Completion	June 2027
	Final Completion	July 2027

6.3 PERMIT REQUIREMENTS

Potential permits required for project include:

- » Montana DEQ review of plans and specifications.
- » Montana DEQ construction stormwater general permit

The Montana DEQ requires plans and specifications to be submitted for new construction. The Montana DEQ also requires coverage under the Construction Stormwater General Permit (Permit No. MTR100000) if a construction project disturbs 1 acre of land or more. If this permit is needed, the contractor shall obtain permit coverage for the project. Some requirements of this permit include: the development and maintenance of a Stormwater Pollution Prevention Plan (SWPPP), submittal of a Notice of Intent (NOI) to the Montana DEQ, and implementation of erosion and sediment controls and pollution prevention practices throughout the construction project.

6.4 SUSTAINABILITY CONSIDERATIONS

Managing stormwater effectively reduces the risk of health hazards associated with flooding and standing water. Reducing flooding improves public safety by minimizing slip hazards on sidewalks and roads and preventing vehicular accidents. Reducing flooding also reduces deterioration of road surfaces and surrounding areas. Additionally, properly managed runoff reduces soil erosion and sedimentation in local waterways. Finally, stormwater ponds can serve as habitats for local wildlife provide aesthetic benefits, creating natural-looking landscapes that can be enjoyed by the community.

6.5 TOTAL PROJECT COST ESTIMATE

The total project cost estimate is shown in **Table 18** below.

The cost estimates for the alternatives considered for Phase 1, Phase 2, and Phase 3 of the project can be found in the appendices in **EXHIBIT E**, **EXHIBIT F**, and **EXHIBIT G**, respectively.

Table 19: Total Project Cost Estimate

Phase	Recommended Alternative	Estimated Construction Cost
Phase 1 - 2nd St	Alternative 2	\$345,038.40
Phase 2 - Alleys NE and SW of Clinic	Alternative 2	\$195,559.92
Phase 3 - Alley behind Medical Center	Alternative 2	\$183,218.40
Total		\$723,816.72

6.6 ANNUAL OPERATING BUDGET

6.6.1 INCOME

A summary of the town of Big Sandy's income for the previous three fiscal years is provided in **Table 4**.

6.6.2 ANNUAL O&M COSTS

A summary of the town of Big Sandy's O&M costs for the previous three fiscal years is provided in **Table 5**. Based on the expenses for FY23, the annual O&M costs for stormwater was estimated and is provided in **Table 6**.

6.6.3 DEBT REPAYMENT

A summary of the town of Big Sandy's debts for the previous three fiscal years is provided in **Table 7**.

6.6.4 RESERVES

A summary of the town of Big Sandy's reserves for the previous three fiscal years is provided in **Table 8**.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The poor stormwater drainage in the area adjacent to the Big Sandy Medical Center cause safety issues for residents. The roads and sidewalks are continually flooded, hampering access for patients, providers, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues.

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8.0 REFERENCES

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9.0 APPENDICES




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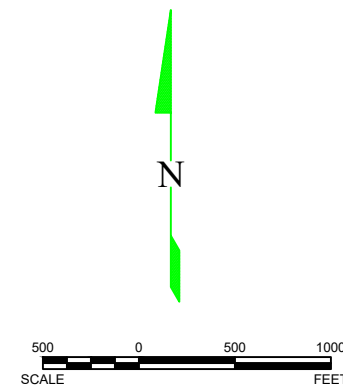
EXHIBIT A PHASE 1 ALTERNATIVES – CONCEPTUAL LAYOUTS

DRAFT

Conceptual Layout - Phase 1 Alternative 2



- Legend**
-  Curb and Gutter
 -  Paving
 -  Sidewalk
 -  Stormwater Pond
 -  Valley Gutter



NO.	DATE	REVISION




DRAFTED CEM
REVIEWED JM
PROJECT NUMBER 2414-00601P
ISSUE DATE AUG. 2024

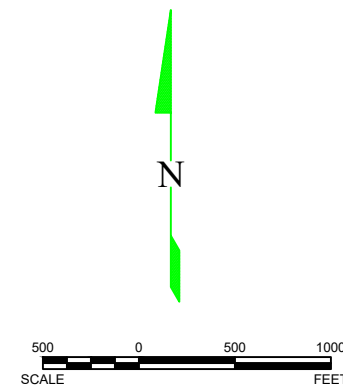
BIG SANDY MEDICAL CENTER DRAINAGE
 AERIAL PHOTO
 BIG SANDY, MONTANA
BIG SANDY MEDICAL CENTER

SHEET
1

Conceptual Layout - Phase 1 Alternative 3



- Legend**
-  Curb and Gutter
 -  Paving
 -  Sidewalk
 -  Stormwater Pond
 -  Valley Gutter



NO.	DATE	REVISION





DRAFTED CEM
REVIEWED JM
PROJECT NUMBER 2414-00601P
ISSUE DATE AUG. 2024

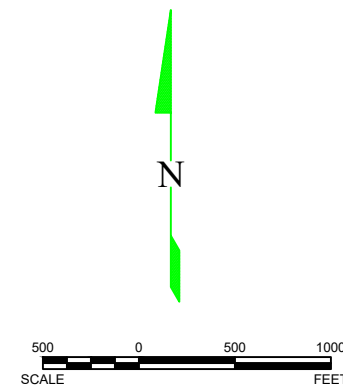
BIG SANDY MEDICAL CENTER DRAINAGE
 AERIAL PHOTO
 BIG SANDY, MONTANA
BIG SANDY MEDICAL CENTER

DRAFT

Conceptual Layout - Phase 2 Alternative 2



- Legend**
-  Curb and Gutter
 -  Paving
 -  Sidewalk
 -  Stormwater Pond
 -  Valley Gutter



NO.	DATE	REVISION




DRAFTED CEM
REVIEWED JM
PROJECT NUMBER 2414-00601P
ISSUE DATE AUG. 2024

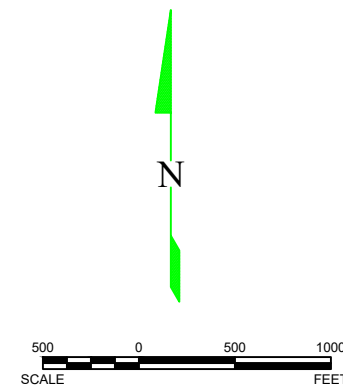
BIG SANDY MEDICAL CENTER DRAINAGE
 AERIAL PHOTO
 BIG SANDY, MONTANA
BIG SANDY MEDICAL CENTER

DRAFT

Conceptual Layout - Phase 3 Alternative 2



- Legend**
-  Curb and Gutter
 -  Paving
 -  Sidewalk
 -  Stormwater Pond
 -  Valley Gutter



NO.	DATE	REVISION




DRAFTED CEM
REVIEWED JM
PROJECT NUMBER 2414-00601P
ISSUE DATE AUG. 2024

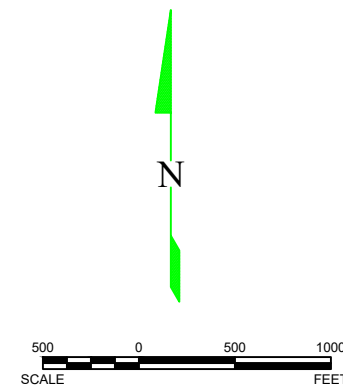
BIG SANDY MEDICAL CENTER DRAINAGE
 AERIAL PHOTO
 BIG SANDY, MONTANA
BIG SANDY MEDICAL CENTER

SHEET
1

Conceptual Layout - Phase 3 Alternative 3



- Legend**
-  Curb and Gutter
 -  Paving
 -  Sidewalk
 -  Stormwater Pond
 -  Valley Gutter



NO.	DATE	REVISION

DRAFTED CEM
REVIEWED JM
PROJECT NUMBER 2414-00601P
ISSUE DATE AUG. 2024

BIG SANDY MEDICAL CENTER DRAINAGE
 AERIAL PHOTO
 BIG SANDY, MONTANA
BIG SANDY MEDICAL CENTER

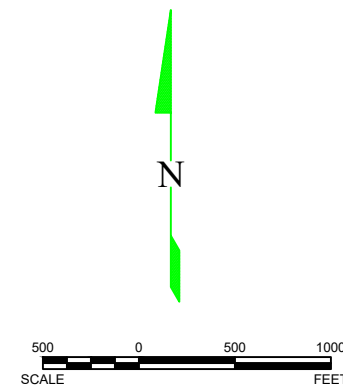
**EXHIBIT D RECOMMENDED ALTERNATIVES—CONCEPTUAL
LAYOUTS**

DRAFT

Conceptual Layout - Recommended Alternatives



- Legend**
- Curb and Gutter
 - Paving
 - Sidewalk
 - Stormwater Pond
 - Valley Gutter



NO.	DATE	REVISION

DRAFTED CEM
REVIEWED JM
PROJECT NUMBER 2414-00601P
ISSUE DATE AUG. 2024

BIG SANDY MEDICAL CENTER DRAINAGE
 AERIAL PHOTO
 BIG SANDY, MONTANA
BIG SANDY MEDICAL CENTER

SHEET
1

EXHIBIT E

**PHASE 1 ALTERNATIVES – CONSTRUCTION COST
ESTIMATE**

DRAFT

Preliminary Estimated Construction Costs
Phase 1 Alternative 2
Big Sandy Medical Center
Big Sandy, Montana
August 29, 2024

CONSTRUCTION COST					
ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITIES	UNIT PRICE	ESTIMATED COST
1	MOBILIZATION	LS	1	\$ 22,000.00	\$ 22,000.00
2	UNCLASSIFIED EXCAVATION	CUYD	530	\$ 9.00	\$ 4,770.00
3	SCARIFY AND RECOMPACT	CUYD	795	\$ 3.00	\$ 2,385.00
4	REMOVE SIDEWALK	SQYD	290	\$ 17.00	\$ 4,930.00
5	EROSION CONTROL	LS	1	\$ 10,000.00	\$ 10,000.00
6	TRAFFIC CONTROL	LS	1	\$ 12,000.00	\$ 12,000.00
7	LANDSCAPING AND RESEEDING	LS	1	\$ 10,000.00	\$ 10,000.00
8	STORMWATER POND	SQFT	1,350	\$ 2.50	\$ 3,375.00
9	CONCRETE CURB AND GUTTER	LNFT	175	\$ 85.00	\$ 14,875.00
10	6" ASPHALT PAVEMENT	TON	270	\$ 185.00	\$ 49,950.00
11	AGGREGATE BASE COURSE	TON	265	\$ 35.00	\$ 9,275.00
12	ENGINEERED FILL	TON	520	\$ 50.00	\$ 26,000.00
13	GEOTEXTILE FABRIC	SQYD	800	\$ 6.00	\$ 4,800.00
14	CONCRETE CURB AND GUTTER, VALLEY	SQYD	0	\$ 235.00	-
15	6" SIDEWALK	SQYD	290	\$ 225.00	\$ 65,250.00
PRELIMINARY CONSTRUCTION COST					\$ 239,610.00
CONTINGENCY (20%)					\$ 47,922.00
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 287,532.00
ENGINEERING DESIGN & CONSTRUCTION (20%)					\$ 57,506.40
TOTAL ESTIMATED CONSTRUCTION COST					\$ 345,038.40

DRAFT

Preliminary Estimated Construction Costs
Phase 1 Alternative 3
Big Sandy Medical Center
Big Sandy, Montana
August 29, 2024

CONSTRUCTION COST					
ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITIES	UNIT PRICE	ESTIMATED COST
1	MOBILIZATION	LS	1	\$ 33,000.00	\$ 33,000.00
2	UNCLASSIFIED EXCAVATION	CUYD	1,185	\$ 9.00	\$ 10,665.00
3	SCARIFY AND RECOMPACT	CUYD	1,780	\$ 3.00	\$ 5,340.00
4	REMOVE SIDEWALK	SQYD	290	\$ 17.00	\$ 4,930.00
5	EROSION CONTROL	LS	1	\$ 10,000.00	\$ 10,000.00
6	TRAFFIC CONTROL	LS	1	\$ 12,000.00	\$ 12,000.00
7	LANDSCAPING AND RESEEDING	LS	1	\$ 10,000.00	\$ 10,000.00
8	STORMWATER POND	SQFT	0	\$ 2.50	-
9	CONCRETE CURB AND GUTTER	LNFT	175	\$ 85.00	\$ 14,875.00
10	6" ASPHALT PAVEMENT	TON	600	\$ 185.00	\$ 111,000.00
11	AGGREGATE BASE COURSE	TON	595	\$ 35.00	\$ 20,825.00
12	ENGINEERED FILL	TON	1,160	\$ 50.00	\$ 58,000.00
13	GEOTEXTILE FABRIC	SQYD	1,782	\$ 6.00	\$ 10,692.00
14	CONCRETE CURB AND GUTTER, VALLEY	SQYD	0	\$ 235.00	-
15	6" SIDEWALK	SQYD	290	\$ 225.00	\$ 65,250.00
PRELIMINARY CONSTRUCTION COST					\$ 366,577.00
CONTINGENCY (20%)					\$ 73,315.40
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 439,892.40
ENGINEERING DESIGN & CONSTRUCTION (20%)					\$ 87,978.48
TOTAL ESTIMATED CONSTRUCTION COST					\$ 527,870.88

DRAFT

EXHIBIT F

**PHASE 2 ALTERNATIVES – CONSTRUCTION COST
ESTIMATE**

DRAFT

Preliminary Estimated Construction Costs
Phase 2 Alternative 2
Big Sandy Medical Center
Big Sandy, Montana
August 29, 2024

CONSTRUCTION COST					
ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITIES	UNIT PRICE	ESTIMATED COST
1	MOBILIZATION	LS	1	\$ 12,000.00	\$ 12,000.00
2	UNCLASSIFIED EXCAVATION	CUYD	490	\$ 9.00	\$ 4,410.00
3	SCARIFY AND RECOMPACT	CUYD	735	\$ 3.00	\$ 2,205.00
4	REMOVE SIDEWALK	SQYD	0	\$ 17.00	\$ -
5	EROSION CONTROL	LS	1	\$ 10,000.00	\$ 10,000.00
6	TRAFFIC CONTROL	LS	1	\$ 12,000.00	\$ 12,000.00
7	LANDSCAPING AND RESEEDING	LS	1	\$ 10,000.00	\$ 10,000.00
8	STORMWATER POND	SQFT	775	\$ 2.50	\$ 1,937.50
9	CONCRETE CURB AND GUTTER	LNFT	0	\$ 85.00	\$ -
10	6" ASPHALT PAVEMENT	TON	250	\$ 185.00	\$ 46,250.00
11	AGGREGATE BASE COURSE	TON	245	\$ 35.00	\$ 8,575.00
12	ENGINEERED FILL	TON	480	\$ 50.00	\$ 24,000.00
13	GEOTEXTILE FABRIC	SQYD	738	\$ 6.00	\$ 4,428.00
14	CONCRETE CURB AND GUTTER, VALLEY	SQYD	0	\$ 235.00	\$ -
15	6" SIDEWALK	SQYD	0	\$ 225.00	\$ -
PRELIMINARY CONSTRUCTION COST					\$ 135,805.50
CONTINGENCY (20%)					\$ 27,161.10
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 162,966.60
ENGINEERING DESIGN & CONSTRUCTION (20%)					\$ 32,593.32
TOTAL ESTIMATED CONSTRUCTION COST					\$ 195,559.92

DRAFT

Preliminary Estimated Construction Costs
Phase 2 Alternative 3
Big Sandy Medical Center
Big Sandy, Montana
August 29, 2024

CONSTRUCTION COST					
ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITIES	UNIT PRICE	ESTIMATED COST
1	MOBILIZATION	LS	1	\$ 13,000.00	\$ 13,000.00
2	UNCLASSIFIED EXCAVATION	CUYD	490	\$ 9.00	\$ 4,410.00
3	SCARIFY AND RECOMPACT	CUYD	735	\$ 3.00	\$ 2,205.00
4	REMOVE SIDEWALK	SQYD	0	\$ 17.00	\$ -
5	EROSION CONTROL	LS	1	\$ 10,000.00	\$ 10,000.00
6	TRAFFIC CONTROL	LS	1	\$ 12,000.00	\$ 12,000.00
7	LANDSCAPING AND RESEEDING	LS	1	\$ 10,000.00	\$ 10,000.00
8	STORMWATER POND	SQFT	0	\$ 2.50	\$ -
9	CONCRETE CURB AND GUTTER	LNFT	130	\$ 85.00	\$ 11,050.00
10	6" ASPHALT PAVEMENT	TON	250	\$ 185.00	\$ 46,250.00
11	AGGREGATE BASE COURSE	TON	245	\$ 35.00	\$ 8,575.00
12	ENGINEERED FILL	TON	480	\$ 50.00	\$ 24,000.00
13	GEOTEXTILE FABRIC	SQYD	738	\$ 6.00	\$ 4,428.00
14	CONCRETE CURB AND GUTTER, VALLEY	SQYD	0	\$ 235.00	\$ -
15	6" SIDEWALK	SQYD	0	\$ 225.00	\$ -
PRELIMINARY CONSTRUCTION COST					\$ 145,918.00
CONTINGENCY (20%)					\$ 29,183.60
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 175,101.60
ENGINEERING DESIGN & CONSTRUCTION (20%)					\$ 35,020.32
TOTAL ESTIMATED CONSTRUCTION COST					\$ 210,121.92

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EXHIBIT G

PHASE 3 ALTERNATIVES – CONSTRUCTION COST ESTIMATE

DRAFT

Preliminary Estimated Construction Costs
Phase 3 Alternative 2
Big Sandy Medical Center
Big Sandy, Montana
August 29, 2024

CONSTRUCTION COST					
ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITIES	UNIT PRICE	ESTIMATED COST
1	MOBILIZATION	LS	1	\$ 12,000.00	\$ 12,000.00
2	UNCLASSIFIED EXCAVATION	CUYD	220	\$ 9.00	\$ 1,980.00
3	SCARIFY AND RECOMPACT	CUYD	325	\$ 3.00	\$ 975.00
4	REMOVE SIDEWALK	SQYD	0	\$ 17.00	\$ -
5	EROSION CONTROL	LS	1	\$ 10,000.00	\$ 10,000.00
6	TRAFFIC CONTROL	LS	1	\$ 12,000.00	\$ 12,000.00
7	LANDSCAPING AND RESEEDING	LS	1	\$ 10,000.00	\$ 10,000.00
8	STORMWATER POND	SQFT	0	\$ 2.50	\$ -
9	CONCRETE CURB AND GUTTER	LNFT	0	\$ 85.00	\$ -
10	6" ASPHALT PAVEMENT	TON	110	\$ 185.00	\$ 20,350.00
11	AGGREGATE BASE COURSE	TON	110	\$ 35.00	\$ 3,850.00
12	ENGINEERED FILL	TON	215	\$ 50.00	\$ 10,750.00
13	GEOTEXTILE FABRIC	SQYD	505	\$ 6.00	\$ 3,030.00
14	CONCRETE CURB AND GUTTER, VALLEY	SQYD	180	\$ 235.00	\$ 42,300.00
15	6" SIDEWALK	SQYD	0	\$ 225.00	\$ -
PRELIMINARY CONSTRUCTION COST					\$ 127,235.00
CONTINGENCY (20%)					\$ 25,447.00
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 152,682.00
ENGINEERING DESIGN & CONSTRUCTION (20%)					\$ 30,536.40
TOTAL ESTIMATED CONSTRUCTION COST					\$ 183,218.40

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Preliminary Estimated Construction Costs
Phase 3 Alternative 3
Big Sandy Medical Center
Big Sandy, Montana
August 29, 2024

CONSTRUCTION COST					
ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITIES	UNIT PRICE	ESTIMATED COST
1	MOBILIZATION	LS	1	\$ 23,000.00	\$ 23,000.00
2	UNCLASSIFIED EXCAVATION	CUYD	1,000	\$ 9.00	\$ 9,000.00
3	SCARIFY AND RECOMPACT	CUYD	1,500	\$ 3.00	\$ 4,500.00
4	REMOVE SIDEWALK	SQYD	0	\$ 17.00	\$ -
5	EROSION CONTROL	LS	1	\$ 10,000.00	\$ 10,000.00
6	TRAFFIC CONTROL	LS	1	\$ 12,000.00	\$ 12,000.00
7	LANDSCAPING AND RESEEDING	LS	1	\$ 10,000.00	\$ 10,000.00
8	STORMWATER POND	SQFT	0	\$ 2.50	\$ -
9	CONCRETE CURB AND GUTTER	LNFT	160	\$ 85.00	\$ 13,600.00
10	6" ASPHALT PAVEMENT	TON	505	\$ 185.00	\$ 93,425.00
11	AGGREGATE BASE COURSE	TON	500	\$ 35.00	\$ 17,500.00
12	ENGINEERED FILL	TON	980	\$ 50.00	\$ 49,000.00
13	GEOTEXTILE FABRIC	SQYD	1,516	\$ 6.00	\$ 9,096.00
14	CONCRETE CURB AND GUTTER, VALLEY	SQYD	15	\$ 235.00	\$ 3,525.00
15	6" SIDEWALK	SQYD	0	\$ 225.00	\$ -
PRELIMINARY CONSTRUCTION COST					\$ 254,646.00
CONTINGENCY (20%)					\$ 50,929.20
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 305,575.20
ENGINEERING DESIGN & CONSTRUCTION (20%)					\$ 61,115.04
TOTAL ESTIMATED CONSTRUCTION COST					\$ 366,690.24

DRAFT

EXHIBIT H AGENCY CORRESPONDENCE

DRAFT



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Choteau County
Floodplain Administrator
PO Box 610
Choteau, MT 59422

Re: Big Sandy Stormwater Improvements PER

Dear Choteau County:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

The need for the project is due to the poor stormwater drainage in the area adjacent to the Big Sandy Medical Center. The roads and sidewalks are continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. Potential improvements include:

- Regrading or paving areas needing improvement.
- Constructing swales or stormwater ponds.

These potential areas for improvement are identified on the attached map.

We are contacting your agency to identify any potential environmental impacts associated with the planned project. Please review the proposed improvements and provide a written response detailing the presence, or absence, of any potential environmental impacts. If I have not received comments from your agency within 20 days, I will assume you have no concerns at this time regarding the proposed improvements. Please provide a written response to evelyn.dalldorf@kljeng.com or to the address in the letterhead. Please contact me at 605-872-5026 if you have any questions regarding this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Evelyn Dalldorf'.

Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Montana Department of Commerce, Census and Economic Information Center
301 S. Park Ave
PO Box 200505
Helena, MT 59620-0505

Re: Big Sandy Stormwater Improvements PER

Dear Montana Department of Commerce, Census and Economic Information Center:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Montana Department of Environmental Quality
Permitting and Compliance Division
1520 East 6th Ave
PO Box 200901
Helena, MT 59620-0901

Re: Big Sandy Stormwater Improvements PER

Dear Montana Department of Environmental Quality:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Montana Department of Labor and Industry
1327 Lockey, PO Box 1728
Helena, MT 59624

Re: Big Sandy Stormwater Improvements PER

Dear Montana Department of Labor and Industry:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Montana Department of Natural Resources and Conservation
1625 11th Ave
PO Box 201601
Helena, MT 59620-1601

Re: Big Sandy Stormwater Improvements PER

Dear Montana Department of Natural Resources and Conservation:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Montana Department of Transportation
2701 Prospect Ave
PO Box 201001
Helena, MT 59620

Re: Big Sandy Stormwater Improvements PER

Dear Montana Department of Transportation:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Montana Fish, Wildlife & Parks
1420 East Sixth Avenue
PO Box 200701
Helena, Mt 59620-0701

Re: Big Sandy Stormwater Improvements PER

Dear Montana Fish, Wildlife & Parks:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Montana State Historic Preservation Office
1410 8th Ave
PO Box 201202
Helena, MT 59620

Re: Big Sandy Stormwater Improvements PER

Dear Montana State Historic Preservation Office:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

U.S. Army Corps of Engineers
Helena Office
100 Neill Avenue
Helena, MT 59601-3329

Re: Big Sandy Stormwater Improvements PER

Dear U.S. Army Corps of Engineers:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

U.S. Bureau of Land Management
5001 Southgate Dr
Billings, MT 59101

Re: Big Sandy Stormwater Improvements PER

Dear U.S. Bureau of Land Management:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

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- Constructing swales or stormwater ponds.

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We are contacting your agency to identify any potential environmental impacts associated with the planned project. Please review the proposed improvements and provide a written response detailing the presence, or absence, of any potential environmental impacts. If I have not received comments from your agency within 20 days, I will assume you have no concerns at this time regarding the proposed improvements. Please provide a written response to evelyn.dalldorf@kljeng.com or to the address in the letterhead. Please contact me at 605-872-5026 if you have any questions regarding this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Evelyn Dalldorf'.

Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

U.S. Department of Transportation
585 Shephard Way
Helena MT 59601

Re: Big Sandy Stormwater Improvements PER

Dear U.S. Department of Transportation:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

The need for the project is due to the poor stormwater drainage in the area adjacent to the Big Sandy Medical Center. The roads and sidewalks are continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. Potential improvements include:

- Regrading or paving areas needing improvement.
- Constructing swales or stormwater ponds.

These potential areas for improvement are identified on the attached map.

We are contacting your agency to identify any potential environmental impacts associated with the planned project. Please review the proposed improvements and provide a written response detailing the presence, or absence, of any potential environmental impacts. If I have not received comments from your agency within 20 days, I will assume you have no concerns at this time regarding the proposed improvements. Please provide a written response to evelyn.dalldorf@kljeng.com or to the address in the letterhead. Please contact me at 605-872-5026 if you have any questions regarding this project.

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

U.S. Environmental Protection Agency
Montana Office
Federal Building, 10 West 15th Street
Suite 3200
Helena, MT 59625

Re: Big Sandy Stormwater Improvements PER

Dear U.S. Environmental Protection Agency:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

The need for the project is due to the poor stormwater drainage in the area adjacent to the Big Sandy Medical Center. The roads and sidewalks are continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. Potential improvements include:

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

U.S. Fish & Wildlife Service
Helena Field Office
585 Shephard Way
Suite 1
Helena, MT 59601-6287

Re: Big Sandy Stormwater Improvements PER

Dear U.S. Fish & Wildlife Service:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

The need for the project is due to the poor stormwater drainage in the area adjacent to the Big Sandy Medical Center. The roads and sidewalks are continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. Potential improvements include:

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

U.S. Natural Resource Conservation Service
10 E. Babcock St
Bozeman, MT 59771

Re: Big Sandy Stormwater Improvements PER

Dear U.S. Natural Resource Conservation Service:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

The need for the project is due to the poor stormwater drainage in the area adjacent to the Big Sandy Medical Center. The roads and sidewalks are continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. Potential improvements include:

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601



18 East Main Street, Suite 229
Rapid City, SD 57701-2949
KLJENG.COM

July 24, 2024

Chippewa Cree Tribe of the Rocky Boy's Reservation
Tribal Historic Preservation Officer
96 Clinic Rd North
Box Elder, MT 59521

Re: Big Sandy Stormwater Improvements PER

Dear Chippewa Cree Tribe of the Rocky Boy's Reservation:

KLJ Engineering is preparing a Preliminary Engineering Report (PER) for stormwater improvements for the Big Sandy Medical Center. The Big Sandy Medical Center is located in the town of Big Sandy in Choteau County in Montana in the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 18 Township 28 North, Range 13 East (Latitude 48.178779°, Longitude -110.1086876°).

The need for the project is due to the poor stormwater drainage in the area adjacent to the Big Sandy Medical Center. The roads and sidewalks are continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. Potential improvements include:

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Evelyn Dalldorf
Environmental Engineer, KLJ Engineering
Enclosures: Project Map
Project #: 2414-00601

DRAFT

DRAFT

Environmental Checklist Instructions

Purpose of This Document:

All applicants must consider the potential environmental impacts of their projects. Consideration of these impacts on the location, design, or construction actions may help avoid expensive costs. A project will not be eligible for funding if it results in significant environmental degradation.

DNRC requires compliance with the Montana Environmental Policy Act (MEPA) per state law and associated DNRC Administrative Rules (ARM 36.2.523). MEPA requires state agencies to prepare a detailed statement on any project, program, or activity directly undertaken by the agency; a project or activity supported through a contract, grant, subsidy, loan, or other form of funding assistance from the agency; and a project or activity involving the issuance of a lease, permit, license, certificate, or other entitlement for use or permission by the agency (MCA Title 75, Chapter 1). Thus, all project applications will be subject to MEPA review.

What Does This Mean for Applicants?

- All applicants must complete the Environmental Checklist in its entirety and provide sufficient documentation on public participation.
- Public participation, or scoping, of the project must include stakeholder, landowner, and community engagement. These efforts can be in the form of documented public meetings (e.g., meeting minutes, pdf presentations) or letters of support.
 - The public meeting must be properly noticed (advertised) and the public must be provided with an opportunity at the meeting to comment on the project.
 - Minutes of the meeting should reflect what was discussed about the project, including all comments received from the public.
 - Letters of support must be included from any identified or interested stakeholders.
- Please submit these items with your application.

How Will DNRC Use the Information Provided?

The information provided within the Environmental Checklist will be subject to a MEPA review by DNRC. If this review should result in an Environmental Assessment, please be aware that DNRC will draft the Environmental Assessment. The drafted Environmental Assessment decision will be posted for a public comment period of either two weeks or 30 days dependent on the level of environmental impact. Please note this public comment period does not suffice for the public participation component mentioned above. The MEPA document will then require a final decision by DNRC before funds are awarded.

It is also important to note for projects with no environmental impacts, or those that do not lead directly to construction or any other sort of environmental degradation, will not be subject to an environmental assessment and the checklist/public participation does not need to be completed. Examples of these sorts of activities include, but are not limited to, development of a PER (professional engineering report), planning, and education/informational outreach. Please let us know if there are additional questions on what other projects may fall under this category.

Instructions:

Complete the Environmental Checklist on the following pages after the instructions below. DNRC retains the ultimate decision-making authority on all MEPA decisions. If DNRC determines this section to be incomplete, additional information will be required before consideration for funding.

Example			
Impact Code	Impact Type	Permits/ Mitigation Required?	Explanation of Impact to Resource
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil slump, steep slopes, subsidence, seismic activity)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input type="checkbox"/> NA	<i>Current Conditions:</i> <i>Preferred Alternative Environmental Narrative:</i>

- 1. Impact Code:** In the first column, identify the impact that the preferred alternative will have on each resource (e.g. 1. Soil Suitability, Topographic and/or Geologic Constraints) in the project area. Select from the following impact codes:
- No Impact: No impact to the resource is anticipated or this is not applicable to this project.
 - Beneficial: Potentially beneficial impact to the resource.
 - Adverse: Potentially adverse impact to the resource.

Please note that a resource may have more than one impact. Identify all possible impacts to the resource in the space provided. For example, the preferred alternative may have a short-term direct negative impact and a long-term direct and indirect positive impact on the resource. Check all boxes that apply and use the space provided in the final column "Explanation of Impact to Resource" to explain.

Example			
Impact Code	Impact Type	Permits/ Mitigation Required?	Explanation of Impact to Resource
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil slump, steep slopes, subsidence, seismic activity)			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input type="checkbox"/> NA	<i>Current Conditions:</i> <i>Preferred Alternative Environmental Narrative:</i>

- 2. Impact Type:** In the second column, identify the type(s) of impact to the resource from the preferred alternative. (Impacts may be direct, indirect or cumulative).
- Direct impacts: Occur at the same time and place as the proposed project.
 - Indirect or secondary impacts: Occur at a different location or later time than the proposed project.
 - Cumulative impacts: Collective impacts on the environment when considered in conjunction with other past, present, and future actions related to the proposed

project. Cumulative impact analysis includes a review of all state and nonstate activities that have occurred, are occurring, or may occur that have impacted or may impact the same resource as the proposed project.

Just as above, please note that a resource may have more than one impact. Identify all possible impacts to the resource in the space provided. For example, the preferred alternative may have a short-term direct negative impact and a long-term direct and indirect positive impact on the resource. Check all boxes that apply and use the space provided in the final column "Explanation of Impact to Resource" to explain.

Example			
Impact Code	Impact Type	Permits/ Mitigation Required?	Explanation of Impact to Resource
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil slump, steep slopes, subsidence, seismic activity)			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input type="checkbox"/> NA	<i>Current Conditions:</i> <i>Preferred Alternative Environmental Narrative:</i>

3. Permits/Mitigation Required: In the third column, please select if a permit and/or mitigation is required for the project (e.g., 310, USACE Section 404 Nationwide).

- Please make sure to include which permits (if any) are required for the particular resource and what mitigation techniques will be used if impacts are to occur.

Example			
Impact Code	Impact Type	Permits/ Mitigation Required?	Explanation of Impact to Resource
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil slump, steep slopes, subsidence, seismic activity)			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input type="checkbox"/> NA	<i>Current Conditions:</i> Click or tap here to enter text. <i>Preferred Alternative Environmental Narrative:</i> Click or tap here to enter text.

4. Explanation of Impact to Resource: In the final column, use the space provided on the Environmental Checklist to summarize the following information:

- **Current Conditions**
 - Describe the current environmental resources of the affected area including the impact of no action. Your description of the current natural resources will provide a baseline to compare all alternatives and their associated environmental impacts.
- **Preferred Alternative Environmental Narrative:**
 - Describe the impact of the preferred alternative or **indicate why there is no impact** from the project.
 - Identify any reasonable cumulative impacts that may result from implementing the preferred alternative. Cumulative impacts are the collective impacts on the

environment when considered in conjunction with other past, present, and future actions related to the proposed project.

- If a potentially adverse impact is identified for the preferred alternative, the applicant must provide the following:
 - An analysis of the severity, duration, extent, and frequency of the impact. Please specify and describe the following:
 - Severity: negligible, minor, or major.
 - Duration: short-term or long-term.
 - Extent: local, regional, or statewide.
 - Frequency: non-recurring or recurring.
 - An explanation of short- and/or long-term measures to mitigate the impact with a discussion on the effects of those mitigative measures on the proposed project.
- Identify any required permits.

5. Additional Information: Underneath the table the following information must be provided:

- Cultural Survey Acknowledgement
- Sources of Information: Identify all sources consulted for the completion of the Environmental Checklist. Sources may include studies, plans, documents, or the persons, organizations, or agencies contacted for assistance.

Certain sections of this Environmental Checklist may require specialized knowledge. Please contact the following agencies and attach comments provided by those agencies to your application. Below are contacts for certain sections that may require additional review by other agencies:

- *Physical Environment, Section #5 – Surface Water Quality* – Montana Department of Environmental Quality, (406) 444 - 3080.
- *Physical Environment, Section #6 – Floodplains and Floodplain Management* – Contact the Local Floodplain Administrator for your County and/or Community (<http://dnrc.mt.gov/divisions/water/operations/floodplain-management/contacts/20210924FPAs2021.1.pdf>) or visit the Department of Natural Resources Water Resources Division, (406) 444 – 0860, <http://dnrc.mt.gov/divisions/water/operations/floodplain-management>.
- *Physical Environment, Section #7 – Wetlands* – U.S. Department of the Army Corps of Engineers, (406) 441 - 1375 or montana.reg@usace.army.mil.
- *Physical Environment, Section #9 – Vegetation and Wildlife Species and Habitats* – Montana Fish, Wildlife and Parks, Wildlife Office (406) 444 - 2612 or find your Regional Office at <https://fwp.mt.gov/aboutfwp/contact-us>.
- *Physical Environment, Section #10 – Unique, Endangered, Fragile or Limited Environmental Resources* – U.S. Fish and Wildlife Service for consultation on potential impacts to endangered or limited plants, fish, or other wildlife, (406) 449 - 5225.
- *Human Environment, Section #4 – Historic Properties, Cultural or Archaeological Resources* – Montana State Historic Preservation Office (SHPO), (406) 444 - 7767 or dmurdo@mt.gov.

For assistance in preparing the Environmental Checklist, contact DNRC grant manager listed on grant application.

Environmental Checklist

Environmental Checklist Prepared by:

On: Click or tap to enter a date.

Evelyn Dalldorf

KLJ Engineering

Name of Person 1

Organization

(605) 872-5026

evelyn.dalldorf@kljeng.com

Phone Number

Email

John McDunn

KLJ Engineering

Name of Person 2

Organization

(406) 447-3357

john.mcdunn@kljeng.com

Phone Number

Email

Click or tap here to enter text.

List additional people above. Include organization, phone number and email for all.

Physical Environment			
Impact Code	Impact Type	Permits/ Mitigation Required?	Explanation of Impact to Resource
1. Soil Suitability, Topographic and/or Geologic Constraints (example: soil slump, steep slopes, subsidence, seismic activity)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> A NRCS Soil Survey Map is attached to this report. <u>Preferred Alternative Environmental Narrative:</u> Soils are generally stable and conducive to excavation and construction. Topography within the project area is suitable for grading and paving. No soil slumps or subsidence have been identified in the project area.

2. Hazardous Facilities (example: power lines, hazardous waste sites, acceptable distance from explosive and flammable hazards including chemical/petrochemical storage tanks, underground fuel storage tanks, and related facilities such as natural gas storage facilities and propane storage tanks)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> There are two facilities in the southwest edge of the town of Big Sandy with underground storage tanks. Ezzies Wholesale has 5 fuel tanks at Latitude 48.169967, Longitude -110.113569. Mountain View Coop has 4 fuel tanks at Latitude 48.174292, -110.116862. There are no other known EPA hazardous waste sites, gas storage facilities, or flammable hazards located within the vicinity of the Town. Powerlines, propane tanks, and other hazardous facilities will be properly avoided during construction.</p> <p><u>Preferred Alternative Environmental Narrative:</u> The project area is on the northeast side of town at the Big Sandy Medical Center, and will only involve regrading, paving, and construction of swales. There are no anticipated impacts regarding hazardous facilities.</p>
3. Surrounding Air Quality (example: dust, odors, emissions)			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input checked="" type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input checked="" type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input checked="" type="checkbox"/> Mitigation <input type="checkbox"/> NA	<p><u>Current Conditions:</u> Based on the US EPA National Ambient Air Quality Standards, Big Sandy does not exceed any criteria air pollutants.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There will be temporary dust generated from the construction of the project that will be minimized with BMP's. There are no anticipated long-term effects on surrounding air quality or any kind of effects of existing air quality.</p>
4. Groundwater Resources and Aquifers (example: quantity, quality, distribution, depth to groundwater, sole source aquifers)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> Ground water is present at about 130 feet below the surface.</p> <p><u>Preferred Alternative Environmental Narrative:</u> The proposed improvements will not introduce any discharges to groundwater and will be limited to grading, paving, and construction of swales. The proposed improvements are not anticipated to impact groundwater resources or aquifers.</p>
5. Surface Water/Water Quality, Quantity and Distribution (example: streams, lakes, storm runoff, irrigation systems, canals)			
<input type="checkbox"/> No Impact <input checked="" type="checkbox"/> Beneficial <input checked="" type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input checked="" type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input checked="" type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> Surface water in the area is limited to Big Sandy Creek 0.75 miles east of the Big Sandy Medical Center, and the Missouri River approximately 10 miles to the south.</p> <p>Currently, whenever it rains, the streets surrounding the Big Sandy Medical Center become flooded.</p> <p><u>Preferred Alternative Environmental Narrative:</u> In the short term, there may be a very minor increase in sediment transport associated with construction activities for this project. Best management practices will be implemented to minimize the potential for erosion and sedimentation from</p>

			<p>construction activities. No long-term detrimental effects to surface water are anticipated.</p> <p>The Montana DEQ requires coverage under the Construction Stormwater General Permit (Permit No. MTR100000) if a construction project disturbs 1 acre of land or more. Comments from the Montana DEQ been requested and included as part of the PER.</p> <p>In the long term, this project will improve stormwater management, reducing flooding which currently occurs in the streets surrounding the Big Sandy Medical Center.</p>
6. Floodplains and Floodplain Management (Identify any floodplains within one mile of the boundary of the project.)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> Chouteau County does not participate in a flood insurance program, and the County has not been mapped for flood plains.</p> <p><u>Preferred Alternative Environmental Narrative:</u> The proposed improvements will not introduce flooding risk and will be limited to grading, paving, and construction of swales.</p>
7. Wetlands (Identify any wetlands within one mile of the boundary of the project and state potential impacts.)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> There are no known wetlands within the project boundaries. The nearest wetland is 0.3 miles east of the Big Sandy Medical Center which is a 0.77 acre Freshwater Emergent Wetland.</p> <p><u>Preferred Alternative Environmental Narrative:</u> The proposed improvements will not require construction in or near any wetlands.</p>
8. Agricultural Lands, Production, and Farmland Protection (example: grazing, forestry, cropland, prime or unique agricultural lands) Identify any prime or important farm ground or forest lands within one mile of the boundary of the project.			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> There are some soils in the project boundaries which are considered prime farmland if irrigated. There are some soils outside the town which are considered farmland of state importance.</p> <p><u>Preferred Alternative Environmental Narrative:</u> Although some soils within the town are considered prime farmland if irrigated, all proposed work will be located in existing disturbed areas such as roadways and alleyways. The proposed project is not anticipated to change the existing land use. The farmlands of state importance are outside the project boundaries and are not anticipated to be affected.</p>

9. Vegetation and Wildlife Species and Habitats, Including Fish (example: terrestrial, avian and aquatic life and habitats)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> According to Montana Natural Heritage Program database, species of concern in the area include: Little Brown Myotis (<i>Myotis lucifugus</i>), Alder Flycatcher (<i>Empidonax alnorum</i>), American Bittern (<i>Botaurus lentiginosus</i>), Baird's Sparrow (<i>Centronyx bairdii</i>), Black Tern (<i>Chlidonias niger</i>), Black-crowned Night-Heron (<i>Nycticorax nycticorax</i>), Bobolink (<i>Dolichonyx oryzivorus</i>), Burrowing Owl (<i>Athene cunicularia</i>), Chestnut-collared Longspur (<i>Calcarius ornatus</i>), Common Tern (<i>Sterna hirundo</i>), Ferruginous Hawk (<i>Buteo regalis</i>), Franklin's Gull (<i>Leucophaeus pipixcan</i>), Golden Eagle (<i>Aquila chrysaetos</i>), Great Blue Heron (<i>Ardea herodias</i>), Loggerhead Shrike (<i>Lanius ludovicianus</i>), Long-billed Curlew (<i>Numenius americanus</i>), Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>), Sprague's Pipit (<i>Anthus spragueii</i>), Thick-billed Longspur (<i>Rhynchophanes mccownii</i>), Varied Thrush (<i>Ixoreus naevius</i>), White-faced Ibis (<i>Plegadis chihi</i>), Whooping Crane (<i>Grus americana</i>), and Great Plains Toad (<i>Anaxyrus cognatus</i>).</p> <p>The project area does not fall within the general habitat for greater sage grouse, as defined by the Montana Sage Grouse Habitat map, which depicts the areas that fall under the Executive Order.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to vegetation and wildlife species and habitats. The project area does not intersect with any wetlands, and is confined to previously disturbed areas.</p>
10. Unique, Endangered, Fragile, or Limited Environmental Resources, Including Endangered Species (example: plants, fish or wildlife)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> According to US Fish and Wildlife Service IPaC species list report, there are no endangered species near Big Sandy. There is one mammal classified as threatened, the Grizzly Bear (<i>Ursus arctos horribilis</i>), and there is one insect classified as a candidate species, the Monarch Butterfly (<i>Danaus Plexippus</i>). There is one migratory bird species, the Northern Harrier (<i>Circus hudsonius</i>).</p> <p><u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to unique, endangered, fragile, or limited environmental resources, including endangered species. The project area does not intersect with any wetlands, and is confined to previously disturbed areas.</p>
11. Unique Natural Features (example: geologic features)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> There are no unique natural features located in the vicinity of the proposed project.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There will be no impacts to unique natural features since there are none in the vicinity of the proposed project.</p>

12. Access to, and Quality of, Recreational and Wilderness Activities, Public Lands and Waterways (including Federally Designated Wild & Scenic Rivers), and Public Open Space			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> There are no anticipated impacts to recreational and wilderness activities, public lands and waterways, or public open space. The project area is limited to local roads and residential areas.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to recreational and wilderness activities, public lands and waterways, or public open space. The project area is limited to local roads and residential areas.</p>
Human Environment			
Impact Code	Impact Type	Resource	
1. Visual Quality – Coherence, Diversity, Compatibility of Use and Scale, Aesthetics			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input checked="" type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input checked="" type="checkbox"/> Mitigation <input type="checkbox"/> NA	<p><u>Current Conditions:</u> The project area has already been developed.</p> <p><u>Preferred Alternative Environmental Narrative:</u> Although there may be some slight aesthetics concerns during construction, this will all be temporary and will not affect the visual quality in any adverse way.</p>
2. Nuisances (example: glare, fumes)			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input checked="" type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input checked="" type="checkbox"/> Mitigation <input type="checkbox"/> NA	<p><u>Current Conditions:</u> The Town of Big Sandy is a smaller community and there are currently not any notable nuisances</p> <p><u>Preferred Alternative Environmental Narrative:</u> Mitigation would be required in the short term during project construction. The proposed project may cause temporary nuisances such as noise and exhaust fumes from construction equipment, traffic detours while sections beneath roadways are under construction. Efforts will be made to minimize nuisances including detours and select timing of construction work in residential areas.</p>
3. Noise – Suitable Separation Between Housing and Other Noise Sensitive Activities and Major Noise Sources (example: aircraft, highways and railroads.)			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input checked="" type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input checked="" type="checkbox"/> Mitigation <input type="checkbox"/> NA	<p><u>Current Conditions:</u> Currently there are no notable sound pollution within the Town of Big Sandy besides the highway and railroad.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There may be some temporary noise associated with the project construction activities. No other long term impacts to the existing noise levels in the vicinity of the project are anticipated.</p>

4. Historic Properties, Cultural, and Archaeological Resources** <i>(Please see end of Environmental Checklist for details if Cultural Survey has not been performed per SHPO Section 106)</i>			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input type="checkbox"/> NA	<u>Current Conditions:</u> The Montana SHPO states, "as long as there will be no disturbance or alteration to structures over fifty years of age and the project will be kept within previously disturbed ground, we feel that there will be no cultural or historic properties affected by this undertaking." <u>Preferred Alternative Environmental Narrative:</u> The proposed project will not impact any historic properties, cultural, or archaeological resources.
5. Changes in Demographic (Population) Characteristics (example: quantity, distribution, density)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. In 2020, the population of Big Sandy was 605 persons (US Census). <u>Preferred Alternative Environmental Narrative:</u> The proposed project is not anticipated to affect demographic characteristics of Big Sandy.
6. General Housing Conditions – Quality, Quantity, Affordability			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. In 2020, the number of housing units was 322, with 272 occupied and 50 vacant (US Census). <u>Preferred Alternative Environmental Narrative:</u> The proposed project is not anticipated to affect housing conditions of big sandy.
7. Businesses or Residents (example: loss of, displacement, or relocation)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. <u>Preferred Alternative Environmental Narrative:</u> The proposed project will not displace or relocate any businesses or residents.
8. Public Health and Safety			
<input type="checkbox"/> No Impact <input checked="" type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> The roads and sidewalks are surrounding the Big Sandy Medical Center continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. <u>Preferred Alternative Environmental Narrative:</u> This project involves regrading or paving roads needing improvement, and constructing swales or stormwater ponds. This will improve stormwater drainage, reducing flooding and improving safety for patients, providers, and visitors of the Big Sandy Medical Center.

9. Local Employment – Quantity or Distribution of Employment, Economic Impact			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. In 2022, the employment rate was 51.5% (US Census).</p> <p><u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to local employment or income patterns due to the proposed project.</p>
10. Income Patterns – Economic Impact			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. In 2022, the median household income in Big Sandy was \$47,169, compared to \$67,631 statewide (US Census).</p> <p><u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to local employment or income patterns due to the proposed project.</p>
11. Local and State Tax Base and Revenues			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input type="checkbox"/> NA	<p><u>Current Conditions:</u> Click or tap here to enter text.</p> <p><u>Preferred Alternative Environmental Narrative:</u> Click or tap here to enter text.</p>
12. Community and Government Services and Facilities (example: educational facilities; health and medical services and facilities; police; emergency medical services; and parks, playgrounds and open space)			
<input type="checkbox"/> No Impact <input checked="" type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> The roads and sidewalks are surrounding the Big Sandy Medical Center continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues.</p> <p><u>Preferred Alternative Environmental Narrative:</u> This project involves regrading or paving roads needing improvement, and constructing swales or stormwater ponds. This will improve stormwater drainage, reducing flooding and improving safety for patients, doctors, and visitors of the Big Sandy Medical Center.</p>
13. Commercial and Industrial Facilities – Production and Activity, Growth or Decline			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There is no anticipated impact to the commercial or industrial facilities as a result of the proposed project.</p>

14. Social Structures and Mores (example: standards of social conduct/social conventions)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. <u>Preferred Alternative Environmental Narrative:</u> There is no anticipated impact to social structures and mores as a result of the proposed project.
15. Land Use Compatibility (example: growth, land use change, development activity, adjacent land uses and potential conflicts)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> According to the Montana Natural Heritage Program, the primary land uses of the Big Sandy area consists of cultivate crops (50%), introduced upland vegetation (19%), great plains mixedgrass prairie (9%), pasture/hay (7%), other roads (4%), commercial/industrial (2%), developed open space (2%), low intensity residential (2%), and major roads (2%). <u>Preferred Alternative Environmental Narrative:</u> The activities in proposed project are limited to regrading or paving roads needing improvement, and constructing swales or stormwater ponds. The proposed project is not anticipated to change the existing land uses. The project area does not intersect with any wetlands, and is confined to previously disturbed areas.
16. Energy Resources – Consumption and Conservation			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. <u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to energy resources.
17. Solid Waste Management			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. <u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to solid waste management.
18. Wastewater Treatment – Sewage System			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town. <u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to wastewater treatment or sewer systems.

19. Storm Water – Surface Drainage			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input checked="" type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input type="checkbox"/> NA	<p><u>Current Conditions:</u> The roads and sidewalks are surrounding the Big Sandy Medical Center continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues.</p> <p><u>Preferred Alternative Environmental Narrative:</u> This project involves regrading or paving roads needing improvement, and constructing swales or stormwater ponds. This will improve stormwater drainage, reducing flooding and improving safety for patients, doctors, and visitors of the Big Sandy Medical Center.</p>
20. Community Water Supply			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to community water supply.</p>
21. Fire Protection – Hazards			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> The town of Big Sandy has many small businesses and residents typical of a small Montana town.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to fire protection.</p>
22. Cultural Facilities, Cultural Uniqueness and Diversity			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> The Montana SHPO was contacted and stated, “as long as there will be no disturbance or alteration to structures over fifty years of age and the project will be kept within previously disturbed ground, we feel that there will be no cultural or historic properties affected by this undertaking.”</p> <p><u>Preferred Alternative Environmental Narrative:</u> The proposed project will not impact any historic properties, cultural, or archaeological resources.</p>
23. Transportation Networks and Traffic Flow Conflicts (example: rail; auto including local traffic; airport runway clear zones – avoidance of incompatible land use in airport runway clear zones)			
<input type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input checked="" type="checkbox"/> Adverse	<input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input checked="" type="checkbox"/> Mitigation <input type="checkbox"/> NA	<p><u>Current Conditions:</u> Highway 87 runs through town, alongside a railroad. There are also local roads typical of a small rural town.</p> <p><u>Preferred Alternative Environmental Narrative:</u> The project area is limited to local roads. Temporary traffic control will be necessary to conduct paving and grading in ROWs.</p>

24. Consistency with Local Ordinances, Resolutions, or Plans (example: conformance with local comprehensive plans, zoning, or capital improvement plans.)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> Click or tap here to enter text.</p> <p><u>Preferred Alternative Environmental Narrative:</u> <u>Current Conditions:</u> The Choteau County Growth Policy (2017) states:</p> <p>“The planning survey indicated that the large majority of respondents felt that road improvements were the biggest infrastructure need.”</p> <p>Under public facilities Goal 1.1, subpoint (a) states, “Bring all primary, secondary, and county roads up to accepted engineering and safety standards,” and subpoint (i) states, “Design transportation improvements to accommodate pedestrians.”</p> <p><u>Preferred Alternative Environmental Narrative:</u> This project involves regrading or paving roads needing improvement, and constructing swales or stormwater ponds. This will improve stormwater drainage, thereby reducing flooding on the streets and improving safety for patients, doctors, and visitors of the Big Sandy Medical Center. This project is consistent with the Choteau County Growth Policy and is not anticipated to conflict with any local ordinances, resolutions, or plans.</p>
25. Private Property Rights (example: a regulatory action or project activity that reduces, minimizes, or eliminates the use of private property.)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> According to Montana Cadastral, the project area is confined to city-owned ROWs or property owned by the Big Sandy Medical Center.</p> <p><u>Preferred Alternative Environmental Narrative:</u> Temporary construction easements are not anticipated to be needed, but will be obtained if needed. No permanent impacts to private property rights are anticipated from this project. The project will be designed such that surface drainage will not negatively impact private property of residents in town.</p>
26. Environmental Justice (example: does the project avoid placing lower income households in areas where environmental degradation has occurred, such as adjacent to brownfield sites?)			
<input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Beneficial <input type="checkbox"/> Adverse	<input type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Cumulative	<input type="checkbox"/> Permit <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> NA	<p><u>Current Conditions:</u> Results from EPA EJScreen are attached to this report.</p> <p><u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to environmental justice as a result of the proposed project.</p>

27. Lead Based Paint and/or Asbestos (example: does the project replace asbestos-lined pipes? Do any structures qualify as containing lead-based paint?)			
<input checked="" type="checkbox"/> No Impact	<input type="checkbox"/> Direct	<input type="checkbox"/> Permit	<u>Current Conditions:</u> The project does not involve any lead based paint or asbestos structures. <u>Preferred Alternative Environmental Narrative:</u> There are no anticipated impacts to lead based paint or asbestos.
<input type="checkbox"/> Beneficial	<input type="checkbox"/> Indirect	<input type="checkbox"/> Mitigation	
<input type="checkbox"/> Adverse	<input type="checkbox"/> Cumulative	<input checked="" type="checkbox"/> NA	

Additional Information

****If no cultural survey has been performed, or is not expected to be needed, applicant must agree to the following statement:**

I hereby agree that, to my knowledge, there are no cultural or paleontological materials in the proposed project site. If previously unknown cultural or paleontological materials are identified during project related activities, the DNRC grant manager will be notified, and all work will cease until a professional assessment of such resources can be made.

List all sources of information used to complete the Environmental Checklist. Sources may include studies, plans, documents, or the individuals, organizations, or agencies contacted for assistance. For individuals, groups, or agencies, please include a contact person and phone number. List any scoping documents or meetings and/or public meetings during project development.

References

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U.S. Fish and Wildlife Service. (2024). *IPaC: Information for Planning and Consultation*. Retrieved from <https://ipac.ecosphere.fws.gov/>

U.S. Geologic Survey. (2022, August 21). *National Hydrography Dataset Plus Version 2.1*. Retrieved from ArcGIS Online: <https://www.arcgis.com/home/item.html?id=4bd9b6892530404abfe13645fcb5099a>

Agencies Contacted

Cascade County

Montana Department of Commerce, Census and Economic Information Center

Montana Department of Environmental Quality

Montana Department of Labor and Industry

Montana Department of Natural Resources and Conservation

Montana Department of Transportation

Montana Fish, Wildlife & Parks

Montana State Historic Preservation Office

U.S. Army Corps of Engineers

U.S. Bureau of Land Management

U.S. Department of Transportation
U.S. Environmental Protection Agency
U.S. Fish & Wildlife Service
U.S. Natural Resource Conservation Service
Little Shell Tribe of Chippewa Indians

Below is a list of electronic resources available for data gathering to aid in the development of the Environmental Checklist:

Abandoned Mines (DEQ): <https://deq.mt.gov/cleanupandrec/Programs/aml>

Agricultural Statistics (USDA): [USDA - National Agricultural Statistics Service - Data and Statistics](#)

Air Quality

- Nonattainment Areas: [Plan and Rule Development | Montana DEQ \(mt.gov\)](#)
- Opening Burning Guidelines: [Open Burning | Montana DEQ \(mt.gov\)](#)

Army Corps of Engineers: <http://www.usace.army.mil/Home.aspx>

Bureau of Business and Economic Research, UM: <http://www.bber.umt.edu/>

Cadastral (for property ownership info): <http://svc.mt.gov/msl/mtcadastral>

Census Information, MT Dept. of Commerce: <http://ceic.mt.gov>

Conservation Districts, MT: <http://macdnet.org/>

Cultural Records

- Montana Historical Society: <https://mhs.mt.gov/Shpo/CulturalRecords>

DEQ data search tools: [Montana DEQ's GIS Portal \(mt.gov\)](#)

- Including Clean Water Act Info Center, Hazardous Waste Handlers, Petroleum Release Fund Claims, Unpermitted Releases, Underground Storage Tanks, Source Water Protection

EPA Enforcement and Compliance History Online <http://echo.epa.gov/>

Farmland Classification: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Fish (Also See Wildlife)

- Montana Fisheries Information System: [Montana Fish, Wildlife & Parks GIS Data \(arcgis.com\)](#)
- Aquatic Invasive Species: [Montana FWP AIS Surveys Dashboard 2021 \(arcgis.com\)](#)

Floodplain Maps, FEMA: <https://msc.fema.gov/portal>

Geographic Information, Natural Resources Information System: <http://nriss.mt.gov/gis>

Geologic Information - [MBMG - Publications - Download Geologic Maps \(mtech.edu\)](#)

Maps of Montana for species observations, land cover, wetland and riparian areas, land management: [Montana Natural Heritage Program \(mtnhp.org\)](http://mtnhp.org); <http://mtnhp.org/mapviewer/?t=6>

Montana Department of Transportation: <https://www.mdt.mt.gov/>

- Environmental Manual: <http://www.mdt.mt.gov/publications/docs/manuals/env/preface.pdf>
- Environmental Manual - Chapter 29, Permits Required: <https://www.mdt.mt.gov/publications/docs/manuals/env/Chapter%2029%20PERMITS%20REQUIRED.pdf>

Montana Board of Oil and Gas Conservation Information System:

- <http://bogc.dnrc.mt.gov/webApps/DataMiner/>

Plants

- Plant database, USDA Natural Resources Conservation Service: <http://plants.usda.gov/java>
- Plant Species, MT Field Guide: <http://fieldguide.mt.gov/default.aspx>
- Plant Species of Concern: <http://mtnhp.org/SpeciesOfConcern/Default.aspx?AorP=p>
- Threatened, Endangered and Rare Plants, USDA: <https://plants.usda.gov/home/raritySearch>

Soils

- USDA Natural Resource Conservation Service database: <https://websoilsurvey.nrcs.usda.gov/app/>
- Montana soil and water conservation districts: <http://swcdmi.org/>

State Historic Preservation Office: <http://mhs.mt.gov/Shpo>

Tourism, UM – Institute of Tourism & Recreation Research: <http://www.itrr.umt.edu>

Tribal Resources:

- Blackfeet Tribal Environmental Permits: <http://www.blackfeetenvironmental.com>
- CSKT Natural Resources Department: <http://nrd.csktribes.org/>
- Montana Office of Indian Affairs: <http://tribalnations.mt.gov/>
- Tribal Historic Preservation Officer List: [Search - NATHPO](#)
- Tribal Directory Assessment Tool (TDAT): <https://egis.hud.gov/tdat/>

Vehicle Traffic Count (MDT): <http://www.mdt.mt.gov/publications/datastats/traffic.shtml>

Water

- Stream Record Extension Facilitator, USGS: [USGS | National Water Dashboard](#)
- Streamstats basin characteristics, USGS: <http://water.usgs.gov/osw/streamstats/>
- Water Resources Division, DNRC: <http://dnrc.mt.gov/divisions/water> ; [ArcGIS Web Application \(mt.gov\)](#)

EXHIBIT K ENVIRONMENTAL EXHIBITS

DRAFT

EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Big Sandy, MT

1 mile Ring Centered at 48.178778,-110.108725

Population: 748

Area in square miles: 3.14

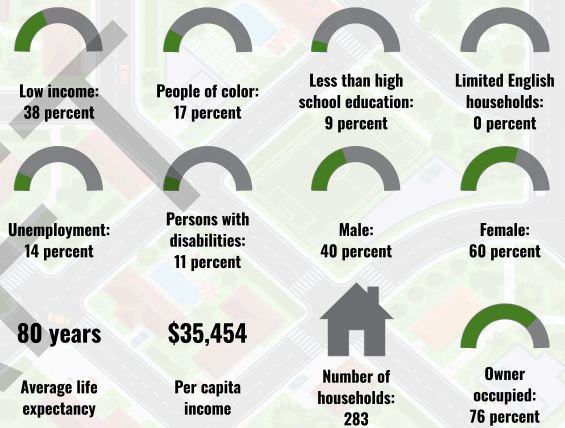


July 17, 2024
 Big Sandy Medical Center
 Search Result (point)
 14,514
 0 0.04 0.08 0.15 mi
 0 0.05 0.1 0.2 km
 Elev: HERE, Garmin, IGC, Mapbox

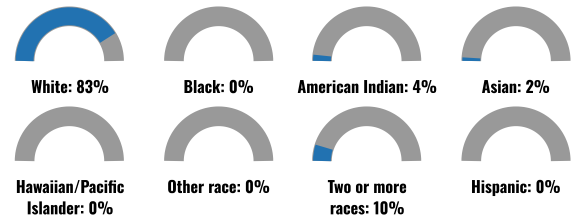
LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
No language data available.	

COMMUNITY INFORMATION



BREAKDOWN BY RACE



BREAKDOWN BY AGE



LIMITED ENGLISH SPEAKING BREAKDOWN



Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2018-2022. Life expectancy data comes from the Centers for Disease Control.

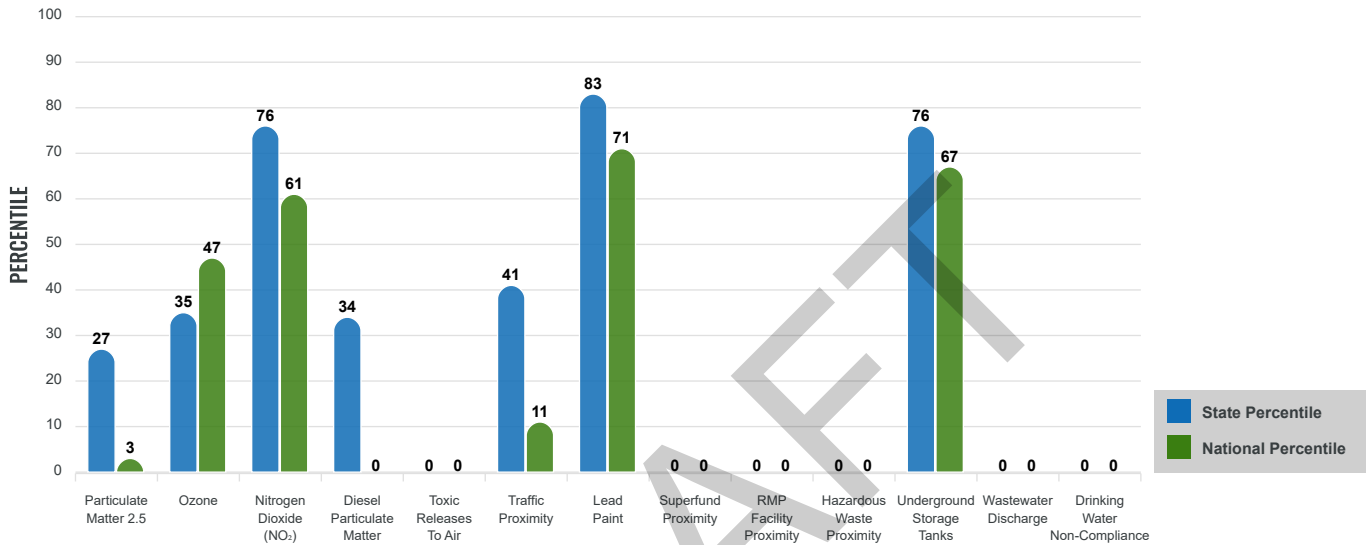
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the [EJScreen website](#).

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

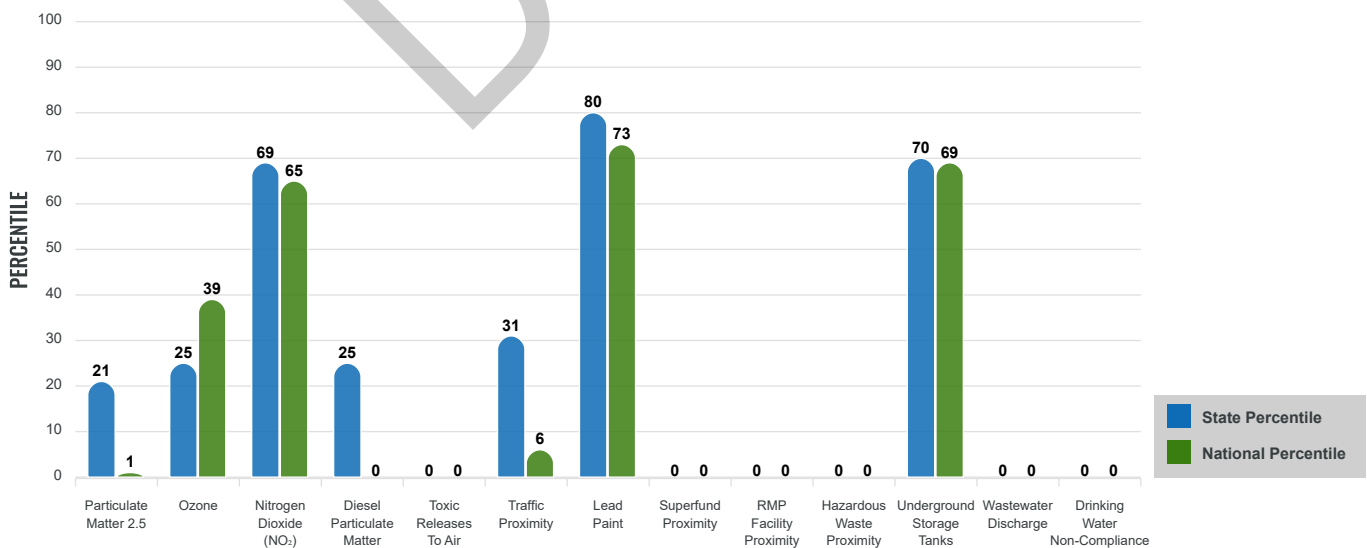
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



Report for 1 mile Ring Centered at 48.178778,-110.108725

Report produced July 17, 2024 using EJScreen Version 2.3

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
ENVIRONMENTAL BURDEN INDICATORS					
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	5.2	6.21	17	8.45	1
Ozone (ppb)	38.3	40.6	23	41	35
Nitrogen Dioxide (NO ₂) (ppbv)	8.7	6.6	66	7.8	61
Diesel Particulate Matter ($\mu\text{g}/\text{m}^3$)	0.0151	0.0711	20	0.191	0
Toxic Releases to Air (toxicity-weighted concentration)	0	590	0	4,600	0
Traffic Proximity (daily traffic count/distance to road)	17,000	290,000	25	1,700,000	6
Lead Paint (% Pre-1960 Housing)	0.55	0.29	82	0.3	77
Superfund Proximity (site count/km distance)	0	0.93	0	0.39	0
RMP Facility Proximity (facility count/km distance)	3.9E-05	0.18	0	0.57	0
Hazardous Waste Proximity (facility count/km distance)	0	0.86	0	3.5	0
Underground Storage Tanks (count/km ²)	2.8	4.9	67	3.6	69
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.12	4200	32	700000	15
Drinking Water Non-Compliance (points)	0	2.2	0	2.2	0
SOCIOECONOMIC INDICATORS					
Demographic Index USA	1.15	N/A	N/A	1.34	49
Supplemental Demographic Index USA	1.51	N/A	N/A	1.64	48
Demographic Index State	1.6	1.39	71	N/A	N/A
Supplemental Demographic Index State	1.52	1.48	58	N/A	N/A
People of Color	17%	16%	74	40%	32
Low Income	38%	32%	67	30%	67
Unemployment Rate	14%	4%	95	6%	90
Limited English Speaking Households	0%	0%	0	5%	0
Less Than High School Education	9%	6%	76	11%	54
Under Age 5	2%	5%	20	5%	22
Over Age 64	21%	21%	55	18%	69

*Diesel particulate matter index is from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	6
Air Pollution	0
Brownfields	4
Toxic Release Inventory	0

Other community features within defined area:

Schools	3
Hospitals	4
Places of Worship	5

Other environmental data:

Air Non-attainment	No
Impaired Waters	No

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for 1 mile Ring Centered at 48.178778,-110.108725

Report produced July 17, 2024 using EJScreen Version 2.3

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	18%	19%	36	20%	37
Heart Disease	7.4	6	78	5.8	82
Asthma	11.8	10.4	93	10.3	87
Cancer	7.1	7.3	40	6.4	63
Persons with Disabilities	13.9%	14.8%	49	13.7%	57

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	26%	15%	83	12%	89
Wildfire Risk	47%	44%	52	14%	85

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	30%	14%	91	13%	90
Lack of Health Insurance	4%	9%	18	9%	32
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access Burden	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Report for 1 mile Ring Centered at 48.178778,-110.108725
 Report produced July 17, 2024 using EJScreen Version 2.3

Location: User-specified point center at 48.178778, -110.108725
 Ring (buffer): 1-miles radius
 Description: Big Sandy Medical Center

Summary of ACS Estimates		2018 - 2022		
Population				748
Population Density (per sq. mile)				424
People of Color Population				126
% People of Color Population				17%
Households				283
Housing Units				357
Housing Units Built Before 1950				129
Per Capita Income				35,454
Land Area (sq. miles) (Source: SF1)				1.76
% Land Area				100%
Water Area (sq. miles) (Source: SF1)				0.01
% Water Area				0%
		2018 - 2022 ACS Estimates	Percent	MOE (±)
Population by Race				
Total		748	100%	180
Population Reporting One Race		671	90%	249
White		622	83%	163
Black		0	0%	13
American Indian		33	4%	29
Asian		17	2%	22
Pacific Islander		0	0%	11
Some Other Race		0	0%	11
Population Reporting Two or More Races		76	10%	53
Total Hispanic Population		0	0%	11
Total Non-Hispanic Population		748		
White Alone		622	83%	163
Black Alone		0	0%	13
American Indian Alone		33	4%	29
Non-Hispanic Asian Alone		17	2%	22
Pacific Islander Alone		0	0%	11
Other Race Alone		0	0%	11
Two or More Races Alone		76	10%	53
Population by Sex				
Male		301	40%	81
Female		446	60%	125
Population by Age				
Age 0-4		14	2%	22
Age 0-17		155	21%	57
Age 18+		592	79%	103
Age 65+		158	21%	71

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2018 - 2022

Location: User-specified point center at 48.178778, -110.108725
 Ring (buffer): 1-miles radius
 Description: Big Sandy Medical Center

	2018 - 2022 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	555	100%	124
Less than 9th Grade	19	3%	37
9th - 12th Grade, No Diploma	31	6%	33
High School Graduate	245	44%	86
Some College, No Degree	108	19%	38
Associate Degree	27	5%	23
Bachelor's Degree or more	127	23%	41
Population Age 5+ Years by Ability to Speak English			
Total	734	100%	179
Speak only English	719	98%	153
Non-English at Home ¹⁺²⁺³⁺⁴	15	2%	38
¹ Speak English "very well"	15	2%	38
² Speak English "well"	0	0%	38
³ Speak English "not well"	0	0%	38
⁴ Speak English "not at all"	0	0%	38
³⁺⁴ Speak English "less than well"	0	0%	54
²⁺³⁺⁴ Speak English "less than very well"	0	0%	66
Limited English Speaking Households*			
Total	0	0%	22
Speak Spanish	0	0%	11
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	0	0%	11
Speak Other Languages	0	0%	11
Households by Household Income			
Household Income Base	283	100%	75
< \$15,000	28	10%	17
\$15,000 - \$25,000	30	11%	19
\$25,000 - \$50,000	91	32%	71
\$50,000 - \$75,000	39	14%	24
\$75,000 +	95	34%	35
Occupied Housing Units by Tenure			
Total	283	100%	75
Owner Occupied	215	76%	71
Renter Occupied	68	24%	37
Employed Population Age 16+ Years			
Total	624	100%	146
In Labor Force	363	58%	99
Civilian Unemployed in Labor Force	51	14%	40
Not In Labor Force	260	42%	74

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of anyrace.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)

*Households in which no one 14 and over speaks English "very well" or speaks English only.

Location: User-specified point center at 48.178778, -110.108725

Ring (buffer): 1-miles radius

Description: Big Sandy Medical Center

	2018 - 2022 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French, Haitian, or Cajun	N/A	N/A	N/A
German or other West Germanic	N/A	N/A	N/A
Russian, Polish, or Other Slavic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Chinese (including Mandarin, Cantonese)	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Tagalog (including Filipino)	N/A	N/A	N/A
Other Asian and Pacific Island	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Other and Unspecified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

DRAFT

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
 N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2018 - 2022.
 *Population by Language Spoken at Home is available at the census tract summary level and up.



COMMERCE

CENSUS AND TARGET RATE

TARGET RATE CALCULATION RESOURCE

The Community Montana Division has updated the U.S. Census Bureau's American Communities Survey (ACS) data set 2015-2019 for the calculation of local government target rates. The Montana Coal Endowment Program (MCEP) and Community Development Block Grant (CDBG) programs use ACS information as the base data set to calculate applicant target rates for community infrastructure systems.

These calculated rates, along with other demographic information, are components of the review and analysis of applications submitted to the programs for funding requests. Applications to be submitted in 2021 or later for MCEP or CDBG programs must use the 2015-2019 ACS data for the calculation of target rates for an applicant.

Low and moderate income (LMI) data is subject to change due to information released by the U.S Department of Housing and Urban Development (HUD).

Search below for 2015-2019 American Communities Survey data used to calculate target rates when applying to the **Montana Coal Endowment Program** and **Community Development Block Grant Program**.

COMMERCE

Selected Geography	Big Sandy tc
Associated County	Chouteau Co
Population	560
Total Households	220
Median Household Income	\$40,893
Low & Moderate Income Percent	55.7%
Percent Poverty	12.0%

Target Rates

Water & Wastewater	\$78.38
Water Only	\$47.71
Wastewater Only	\$30.67
Solid Waste Only	\$10.22

Amounts are computed using the 2015-2019 census and target percentage rationale reviewed biennially by Commerce. The target percentages are:

- 2.3% combined (water and wastewater)
- 1.4% for water alone
- 0.9% for wastewater alone
- 0.3% for solid waste

For example: Community median household income is \$25,000 and the residents pay both water and wastewater rates, the calculation would be: \$25,000 times 2.3% divided by 12 equals monthly target rate of \$47.92. $(25,000 \times 2.3\%) / 12 = \47.92

Having trouble finding data for your community? Some communities may not be listed in the resources above because the ACS did not provide 2015-2019 Median Household Income data for those areas. Please [contact us](#) if you have any questions about this information.

MAPPING

COMMERCE

CONTACTS

Montana Coal Endowment Program (MCEP)	
Community Development Block Grant Program (CDBG)	
Census & Economic Information Center (CEIC)	

Contacts

DEFINITIONS

CENSUS DESIGNATED PLACE (CDP)

Census designated places (CDPs) have been created for each decennial census as the statistical counterparts of incorporated places. CDPs are delineated to provide census data for concentrations of population, housing, and commercial structures that are identifiable by name but are not within an incorporated place. CDP boundaries usually are defined in cooperation with state, local, and tribal officials. These boundaries, which usually coincide with visible features or the boundary of an adjacent incorporated place or other legal entity boundary, have no legal status, nor do these places have officials elected to serve traditional municipal functions.

HOUSEHOLD

A household includes all the people who occupy a housing unit as their usual place of residence.

INCOME OF HOUSEHOLDS

This includes the income of the householder and all other individuals 15 years old and over in the household, whether they are related to the householder or not.



COMMERCE

previous year or 80% of the median income of the entire non-metropolitan area of the State of Montana, whichever is higher.

MEDIAN INCOME

The median income divides the income distribution into two equal groups, one having incomes above the median, and other having incomes below the median.

NOTES

Total Population and Total Households are from Summary File (SF) 1, 100% data. Poverty Rates and Median Household Income are from Summary File (SF) 3, Sample data. Low and Moderate Income Percentage was developed by HUD using Census 2010 data.

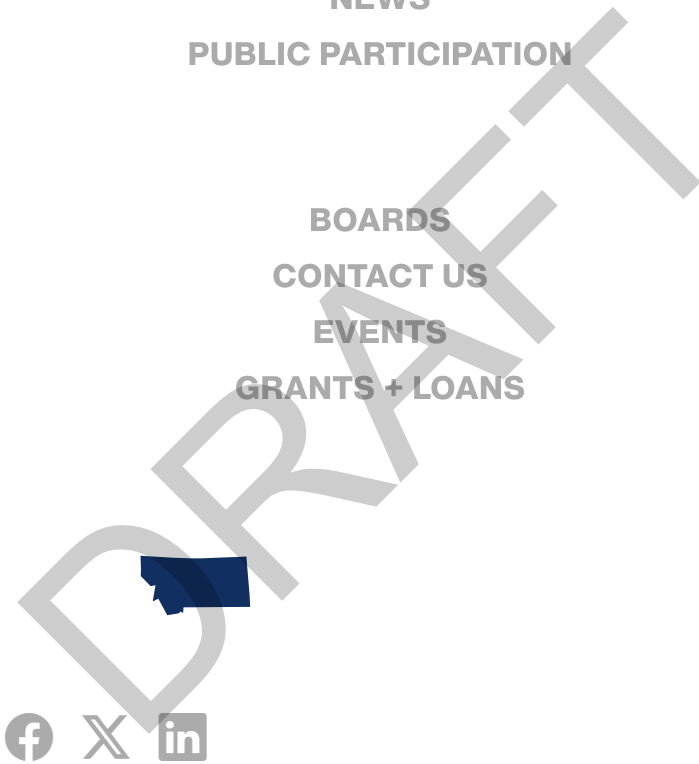
SOURCES

- U.S. Census Bureau & HUD
 - Median Household Income
 - *Census Bureau, American Community Survey 2015-2019 Estimates*
- Total Population & Households
 - *U.S. Census Bureau, 2015-2019 Census - Summary File 1 (SF1) 100% Data*
- Low to Moderate Income Percent
 - *HUD 2015 Low and Moderate Income Data*



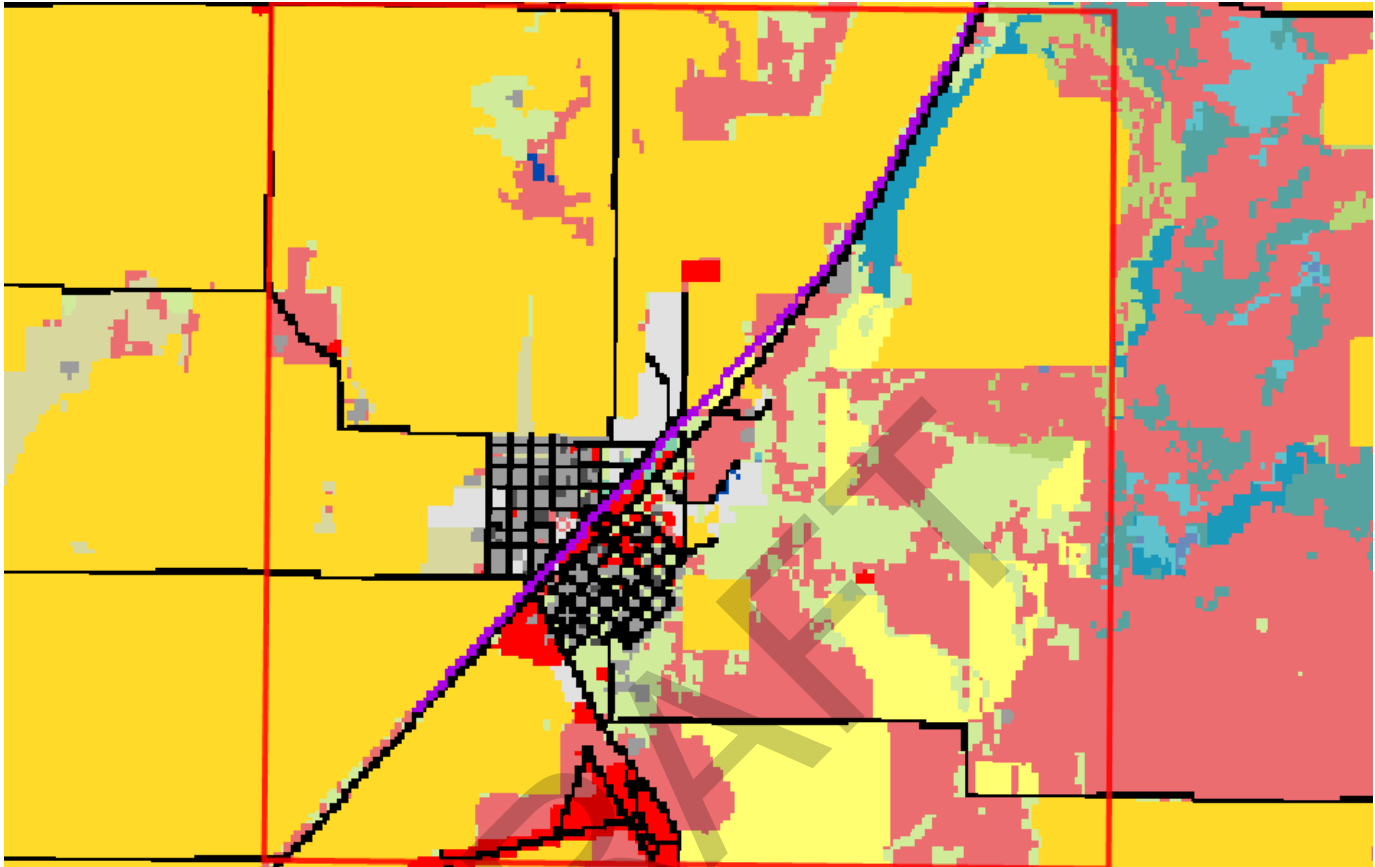
COMMERCE

- LEGAL AFFAIRS**
- NEWS**
- PUBLIC PARTICIPATION**
- BOARDS**
- CONTACT US**
- EVENTS**
- GRANTS + LOANS**



Land Cover

Summarized by: **028N013E018** (*Buffered PLSS Section*)



Human Land Use Agriculture

Cultivated Crops

50% (2,841 Acres)

These areas used for the production of crops, such as corn, soybeans, small grains, sunflowers, vegetables, and cotton, typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.



Recently Disturbed or Modified Introduced Vegetation

Introduced Upland Vegetation - Annual and Biennial Forbland

19% (1,083 Acres)

Land cover is significantly altered/disturbed by introduced annual and biennial forbs. Natural vegetation types are no longer recognizable. Typical species that dominate these areas are knapweed, oxeye daisy, Canada thistle, leafy spurge, pepperweed, and yellow sweetclover.



Grassland Systems

Lowland/Prairie Grassland

Great Plains Mixedgrass Prairie

9% (509 Acres)

The system covers much of the eastern two-thirds of Montana, occurring continuously for hundreds of square kilometers, interrupted only by wetland/riparian areas or sand prairies. Soils are primarily fine and medium-textured. The growing season averages 115 days, ranging from 100 days on the Canadian border to 130 days on the Wyoming border. Climate is typical of mid-continental regions with long severe winters and hot summers. Grasses typically comprise the greatest canopy cover, and western wheatgrass (*Pascopyrum smithii*) is usually dominant. Other species include thickspike wheatgrass (*Elymus lanceolatus*), green needlegrass (*Nassella viridula*), blue grama (*Bouteloua gracilis*), and needle and thread (*Hesperostipa comata*). Near the Canadian border in north-central Montana, this system grades into rough fescue (*Festuca campestris*) and Idaho fescue (*Festuca idahoensis*) grasslands. Remnants of shortbristle needle and thread (*Hesperostipa curisetata*) dominated vegetation are found in northernmost Montana and North Dakota, and are associated with productive sites, now mostly converted to farmland. Forb diversity is typically high. In areas of southeastern and central Montana where sagebrush steppe borders the mixed grass prairie, common plant associations include Wyoming big sagebrush-western wheatgrass (*Artemisia tridentata* ssp. *wyomingensis*/*Pascopyrum smithii*). Fire and grazing are the primary drivers of this system. Drought can also impact it, in general favoring the shortgrass component at the expense of the mid-height grasses. With intensive grazing, cool season exotics such as Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and Japanese brome (*Bromus japonicus*) increase in dominance; both of these rhizomatous species have been shown to markedly decrease species diversity. Previously cultivated acres that have been re-vegetated with non-native plants have been transformed into associations such as Kentucky bluegrass (*Poa pratensis*)/western wheatgrass (*Pascopyrum smithii*) or into pure crested wheatgrass (*Agropyron cristatum*) stands.

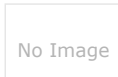


7% (427 Acres)

Human Land Use Agriculture

Pasture/Hay

These agriculture lands typically have perennial herbaceous cover (e.g. regularly-shaped plantings) used for livestock grazing or the production of hay. There are obvious signs of management such as irrigation and haying that distinguish it from natural grasslands. Identified CRP lands are included in this land cover type.

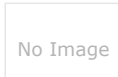


4% (257 Acres)

Human Land Use Developed

Other Roads

County, city and or rural roads generally open to motor vehicles.



2% (97 Acres)

Human Land Use Developed

Commercial / Industrial

Businesses, industrial parks, hospitals, airports; utilities in commercial/industrial areas.



2% (93 Acres)

Human Land Use Developed

Developed, Open Space

Vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes. Impervious surfaces account for less than 20% of total cover. This category often includes highway and railway rights of way and graveled rural roads.

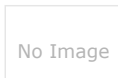


2% (87 Acres)

Human Land Use Developed

Low Intensity Residential

Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-50% of total cover. These areas most commonly include single-family housing units in rural and suburban areas. Paved roadways may be classified into this category.



2% (87 Acres)

Human Land Use Developed

Major Roads

U.S. and State Highways that are not part of the National Highway System (NHS) Interstate network. This category includes entrance and exit ramps to NHS Interstate highways.

Additional Limited Land Cover

- 1% (53 Acres)  [Railroad](#)
- 1% (50 Acres)  [Great Plains Riparian](#)
- 1% (50 Acres)  [Rocky Mountain Lower Montane, Foothill, and Valley Grassland](#)
- 1% (43 Acres)  [Great Plains Sand Prairie](#)
- <1% (11 Acres)  [High Intensity Residential](#)
- <1% (8 Acres)  [Greasewood Flat](#)
- <1% (4 Acres)  [Open Water](#)
- <1% (3 Acres)  [Great Plains Closed Depressional Wetland](#)
- <1% (3 Acres)  [Great Plains Saline Depressional Wetland](#)
- <1% (1 Acres)  [Emergent Marsh](#)

Introduction to Land Cover

Land Use/Land Cover is one of 15 [Montana Spatial Data Infrastructure](#) framework layers considered vital for making statewide maps of Montana and understanding its geography. The layer records all Montana natural vegetation, land cover and land use, classified from satellite and aerial imagery, mapped at a scale of 1:100,000, and interpreted with supporting ground-level data. The baseline map is adapted from the Northwest ReGAP (NWGAP) project land cover classification, which used 30m resolution multi-spectral Landsat imagery acquired between 1999 and 2001. Vegetation classes were drawn from the Ecological System Classification developed by NatureServe (Comer et al. 2003). The land cover classes were developed by Anderson et al. (1976). The NWGAP effort encompasses 12 map zones. Montana overlaps seven of these zones. The two NWGAP teams responsible for the initial land cover mapping effort in Montana were Sanborn and NWGAP at the University of Idaho. Both Sanborn and NWGAP employed a similar modeling approach in which Classification and Regression Tree (CART) models were applied to Landsat ETM+ scenes. The Spatial Analysis Lab within the Montana Natural Heritage Program was responsible for developing a seamless Montana land cover map with a consistent statewide legend from these two separate products. Additionally, the Montana land cover layer incorporates several other land cover and land use products (e.g., MSDI Structures and Transportation themes and the Montana Department of Revenue Final Land Unit classification) and reclassifications based on plot-level data and the latest NAIP imagery to improve accuracy and enhance the usability of the theme. Updates are done as partner support and funding allow, or when other MSDI datasets can be incorporated. Recent updates include fire perimeters and agricultural land use (annually), energy developments such as wind, oil and gas installations (2014), roads, structures and other impervious surfaces (various years): and local updates/improvements to specific ecological systems (e.g., central Montana grassland and sagebrush ecosystems). Current and previous versions of the Land Use/Land Cover layer with full metadata are available for download from the Montana State Library's [GIS Data List](#). More information on the land cover layer is available at: https://msl.mt.gov/geoinfo/msdi/land_use_land_cover/

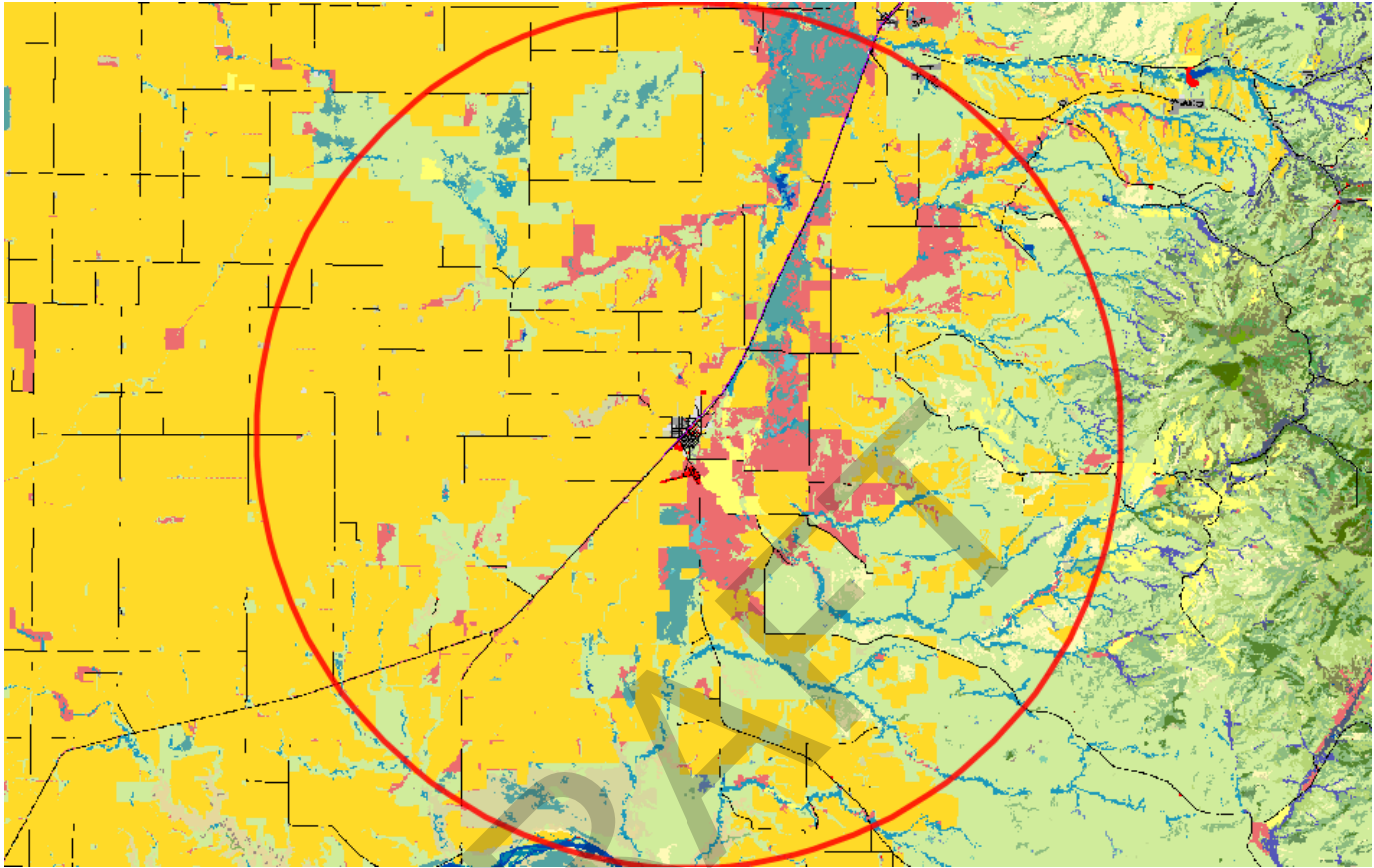
Within the report area you have requested, land cover is summarized by acres of Level 1, Level 2, and Level 3 Ecological Systems.

Literature Cited

- Anderson, J.R. E.E. Hardy, J.T. Roach, and R.E. Witmer. 1976. A land use and land cover classification system for use with remote sensor data. U.S. Geological Survey Professional Paper 964.
- Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. Ecological systems of the United States: A working classification of U.S. terrestrial systems. NatureServe, Arlington, VA.

Land Cover

Summarized by: **Big Sandy (Town)**



Human Land Use Agriculture

Cultivated Crops

54%
(108,585 Acres)

These areas used for the production of crops, such as corn, soybeans, small grains, sunflowers, vegetables, and cotton, typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.



Grassland Systems Lowland/Prairie Grassland

Great Plains Mixedgrass Prairie

26%
(52,671 Acres)

The system covers much of the eastern two-thirds of Montana, occurring continuously for hundreds of square kilometers, interrupted only by wetland/riparian areas or sand prairies. Soils are primarily fine and medium-textured. The growing season averages 115 days, ranging from 100 days on the Canadian border to 130 days on the Wyoming border. Climate is typical of mid-continental regions with long severe winters and hot summers. Grasses typically comprise the greatest canopy cover, and western wheatgrass (*Pascopyrum smithii*) is usually dominant. Other species include thickspike wheatgrass (*Elymus lanceolatus*), green needlegrass (*Nassella viridula*), blue grama (*Bouteloua gracilis*), and needle and thread (*Hesperostipa comata*). Near the Canadian border in north-central Montana, this system grades into rough fescue (*Festuca campestris*) and Idaho fescue (*Festuca idahoensis*) grasslands. Remnants of shortbristle needle and thread (*Hesperostipa curtiseta*) dominated vegetation are found in northernmost Montana and North Dakota, and are associated with productive sites, now mostly converted to farmland. Forb diversity is typically high. In areas of southeastern and central Montana where sagebrush steppe borders the mixed grass prairie, common plant associations include Wyoming big sagebrush-western wheatgrass (*Artemisia tridentata* ssp. *wyomingensis*/*Pascopyrum smithii*). Fire and grazing are the primary drivers of this system. Drought can also impact it, in general favoring the shortgrass component at the expense of the mid-height grasses. With intensive grazing, cool season exotics such as Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and Japanese brome (*Bromus japonicus*) increase in dominance; both of these rhizomatous species have been shown to markedly decrease species diversity. Previously cultivated acres that have been re-vegetated with non-native plants have been transformed into associations such as Kentucky bluegrass (*Poa pratensis*)/western wheatgrass (*Pascopyrum smithii*) or into pure crested wheatgrass (*Agropyron cristatum*) stands.



Recently Disturbed or Modified Introduced Vegetation

Introduced Upland Vegetation - Annual and Biennial Forbland

6%
(12,909 Acres)

Land cover is significantly altered/disturbed by introduced annual and biennial forbs. Natural vegetation types are no longer recognizable. Typical species that dominate these areas are knapweed, oxeye daisy, Canada thistle, leafy spurge, pepperweed, and yellow sweetclover.



Wetland and Riparian Systems Floodplain and Riparian

Greasewood Flat

3% (6,046 Acres)

This system occurs in central, north-central and eastern Montana and as a minor occurrence in southwestern Montana. Elsewhere, it occurs throughout the western U.S. including the Intermountain Basin states, the Columbia Plateau, the Rocky Mountains and the western Great Plains. It is found on nearly level, older alluvial terraces on broad or narrow floodplains and coalescing alluvial fans in valleys. It may also occur on broad expanses along lake shores and playas. Sites typically have saline soil and a shallow water table. They flood intermittently, but the surface is dry for most of the growing season. The water table remains high enough to maintain vegetation, despite salt accumulations. Sites occur where overland flow or soils or a combination of both allow for greater than normal moisture regime. In many cases, fine textured soils result in a perched water table. The structure of this system usually consists of open to moderately dense shrubs dominated by greasewood (*Sarcobatus vermiculatus*) with a sparse graminoid understory most commonly consisting of western wheatgrass (*Pascopyrum smithii*).



Wetland and Riparian Systems Floodplain and Riparian

Great Plains Riparian

2% (4,880 Acres)

This system is associated with perennial to intermittent or ephemeral streams throughout the northwestern Great Plains. In Montana, it occurs along smaller tributaries of the Yellowstone and Missouri rivers, as well as tributaries to the large floodplain rivers that feed them (e.g. the Milk, Marias, Musselshell, Powder, Clark's Fork Yellowstone, Tongue, etc). In areas adjacent to the mountain ranges of central and southeastern Montana, and near the Rocky Mountain Front, it grades into Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland systems. This system is found on alluvial soils in highly variable landscape settings, from confined, deep cut ravines to wide, braided streambeds. Channel migration occurs in less-confined areas, but within a more narrow range than would occur in broad, alluvial floodplains. Typically, the rivers are wadeable by mid-summer.

The primary inputs of water to these systems include groundwater discharge, overland flow, and subsurface interflow from the adjacent upland. Flooding is the key ecosystem process, creating suitable sites for seed dispersal and seedling establishment, and controlling vegetation succession. Communities within this system range from riparian forests and shrublands to tallgrass wet meadows and gravel/sand flats. Dominant species are similar to those found in the Great Plains Floodplain System. In the western part of the system's range in Montana, the dominant overstory species is black cottonwood (*Populus balsamifera ssp. trichocarpa*) with narrowleaf cottonwood (*Populus angustifolia*) and Plains cottonwood (*Populus deltoides*) occurring as co-dominants in the riparian/floodplain interface near the mountains. Further east, narrowleaf cottonwood and Plains cottonwood become dominant. In wetter systems, the understory is typically willow (*Salix spp.*) and redosier dogwood (*Cornus stolonifera*) with graminoids such as western wheatgrass (*Pascopyrum smithii*) and forbs like American licorice (*Glycyrrhiza lepidota*). In areas where the channel is incised, the understory may be dominated by big sagebrush (*Artemisia tridentata*) or silver sagebrush (*Artemisia cana*). Like floodplain systems, riparian systems are often subjected to overgrazing and/or agriculture and can be heavily degraded, with salt cedar (*Tamarix ramosissima*) and Russian olive (*Eleagnus angustifolia*) replacing native woody vegetation and regrowth. Groundwater depletion and lack of fire have resulted in additional species changes.



Grassland Systems Lowland/Prairie Grassland

Great Plains Sand Prairie

2% (4,514 Acres)

The sand prairies constitute a very unique system within the western Great Plains. The unifying and controlling feature for this system is that coarse-textured soils predominate and the dominant grasses are well-adapted to this condition. In the northwestern portion of the system's range, stand size corresponds to the area of exposed caprock sandstone, and small patches predominate, but larger patches are found embedded in the encompassing Great Plains Mixed Grass Prairie, and usually occupy higher positions in local landscapes where former caprock formations have eroded into more subdued and planar topography. In most of eastern Montana, substrates supporting this system have weathered in place from sandstone caprock. Soils can be relatively thin or deep due to varying amounts of downslope movement of weathered sands. Needle and thread (*Hesperostipa comata*) is the dominant grass species. Other frequent species include little bluestem (*Schizachyrium scoparium*), often occurring with threadleaf sedge (*Carex filifolia*) and dominating both sandy sites and actively eroding sites. Prairie sandreed (*Calamovilfa longifolia*), sand bluestem (*Andropogon hallii*) and big bluestem (*Andropogon gerardii*) are sporadically distributed and found generally on the coarsest-textured sands. Other graminoids include bluebunch wheatgrass (*Pseudoroegneria spicata*), sun sedge (*Carex inops ssp. heliophila*), and purple threeawn (*Aristida purpurea*). Characteristic forbs differ by occurrence, but species of scurf pea (*Psoraleidum* species) and Indian breadroot (*Pediomelum*) species are common. Communities of silver sage (*Artemisia cana ssp. cana*) or skunkbush sumac (*Rhus trilobata*) can occur within this system. Wind erosion, fire and grazing constitute the other major dynamic processes that can influence this system.

Additional Limited Land Cover

- 1% (2,235 Acres) ■ [Other Roads](#)
- 1% (2,200 Acres) ■ [Big Sagebrush Steppe](#)
- 1% (1,687 Acres) ■ [Pasture/Hay](#)
- <1% (955 Acres) ■ [Great Plains Badlands](#)
- <1% (818 Acres) ■ [Rocky Mountain Foothill Woodland-Steppe Transition](#)
- <1% (688 Acres) ■ [Rocky Mountain Lower Montane, Foothill, and Valley Grassland](#)
- <1% (619 Acres) ■ [Major Roads](#)
- <1% (341 Acres) ■ [Great Plains Saline Depression Wetland](#)
- <1% (250 Acres) ■ [Low Intensity Residential](#)
- <1% (246 Acres) ■ [Open Water](#)
- <1% (233 Acres) ■ [Emergent Marsh](#)
- <1% (208 Acres) ■ [Great Plains Wooded Draw and Ravine](#)
- <1% (173 Acres) ■ [Railroad](#)
- <1% (129 Acres) ■ [Developed, Open Space](#)
- <1% (129 Acres) ■ [Great Plains Open Freshwater Depression Wetland](#)
- <1% (117 Acres) ■ [Commercial / Industrial](#)
- <1% (97 Acres) ■ [Great Plains Closed Depressional Wetland](#)
- <1% (90 Acres) ■ [Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland](#)
- <1% (66 Acres) ■ [Great Plains Floodplain](#)
- <1% (30 Acres) ■ [Great Plains Shrubland](#)
- <1% (20 Acres) ■ [Great Plains Ponderosa Pine Woodland and Savanna](#)
- <1% (18 Acres) ■ [High Intensity Residential](#)

<1% (15 Acres) ■ [Rocky Mountain Foothill Limber Pine - Juniper Woodland](#)

<1% (4 Acres) ■ [Gas and Gas Storage](#)

<1% (4 Acres) ■ [Introduced Riparian and Wetland Vegetation](#)

<1% (2 Acres) ■ [Great Plains Cliff and Outcrop](#)

DRAFT

Introduction to Land Cover

Land Use/Land Cover is one of 15 [Montana Spatial Data Infrastructure](#) framework layers considered vital for making statewide maps of Montana and understanding its geography. The layer records all Montana natural vegetation, land cover and land use, classified from satellite and aerial imagery, mapped at a scale of 1:100,000, and interpreted with supporting ground-level data. The baseline map is adapted from the Northwest ReGAP (NWGAP) project land cover classification, which used 30m resolution multi-spectral Landsat imagery acquired between 1999 and 2001. Vegetation classes were drawn from the Ecological System Classification developed by NatureServe (Comer et al. 2003). The land cover classes were developed by Anderson et al. (1976). The NWGAP effort encompasses 12 map zones. Montana overlaps seven of these zones. The two NWGAP teams responsible for the initial land cover mapping effort in Montana were Sanborn and NWGAP at the University of Idaho. Both Sanborn and NWGAP employed a similar modeling approach in which Classification and Regression Tree (CART) models were applied to Landsat ETM+ scenes. The Spatial Analysis Lab within the Montana Natural Heritage Program was responsible for developing a seamless Montana land cover map with a consistent statewide legend from these two separate products. Additionally, the Montana land cover layer incorporates several other land cover and land use products (e.g., MSDI Structures and Transportation themes and the Montana Department of Revenue Final Land Unit classification) and reclassifications based on plot-level data and the latest NAIP imagery to improve accuracy and enhance the usability of the theme. Updates are done as partner support and funding allow, or when other MSDI datasets can be incorporated. Recent updates include fire perimeters and agricultural land use (annually), energy developments such as wind, oil and gas installations (2014), roads, structures and other impervious surfaces (various years): and local updates/improvements to specific ecological systems (e.g., central Montana grassland and sagebrush ecosystems). Current and previous versions of the Land Use/Land Cover layer with full metadata are available for download from the Montana State Library's [GIS Data List](#). More information on the land cover layer is available at: https://msl.mt.gov/geoinfo/msdi/land_use_land_cover/

Within the report area you have requested, land cover is summarized by acres of Level 1, Level 2, and Level 3 Ecological Systems.

Literature Cited

- Anderson, J.R. E.E. Hardy, J.T. Roach, and R.E. Witmer. 1976. A land use and land cover classification system for use with remote sensor data. U.S. Geological Survey Professional Paper 964.
- Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. Ecological systems of the United States: A working classification of U.S. terrestrial systems. NatureServe, Arlington, VA.

Land Management

Summarized by: **028N013E018** (Buffered PLSS Section)



Land Management Summary

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	242 Acres (4%)			
Federal				
US Government				
US Government Owned				
Local	242 Acres (4%)			
Local Government	242 Acres (4%)			
Local Government Owned	242 Acres (4%)			
Private Lands or Unknown Ownership	5,470 Acres (96%)			

Introduction to Land Management

Within the report area you have requested, land management information is summarized by acres of federal, state, and local government lands, tribal reservation boundaries, private conservation lands, and federal, state, local, and private conservation easements. Acreage for “Owned”, “Tribal”, or “Easement” categories represents non-overlapping areas that may be totaled. However, “Other Boundaries” represents managed areas such as National Forest boundaries containing private inholdings and other mixed ownership which may cause boundaries to overlap (e.g. a wilderness area within a forest). Therefore, acreages may not total in a straight-forward manner.

Because information on land stewardship is critical to effective land management, the Montana Natural Heritage Program (MTNHP) began compiling ownership and management data in 1997. The goal of the Montana Land Management Database is to manage a single, statewide digital data set that incorporates information from both public and private entities. The database assembles information on public lands, private conservation lands, and conservation easements held by state and federal agencies and land trusts and is updated on a regular basis. Since 2011, the Information Management group in the Montana State Library’s Digital Library Division has led the Montana Land Management Database in partnership with the MTNHP.

Public and private conservation land polygons are attributed with the name of the entity that owns it. The data are derived from the statewide [Montana Cadastral Parcel layer](#). Conservation easement data shows land parcels on which a public agency or qualified land trust has placed a conservation easement in cooperation with the landowner. The dataset contains no information about ownership or status of the mineral estate. For questions about the dataset or to report errors, please contact the Montana Natural Heritage Program at (406) 444-5363 or mtnhp@mt.gov. You can download various components of the Land Management Database and view associated metadata at the Montana State Library’s [GIS Data List](#) at the following links:

[Public Lands](#)

[Conservation Easements](#)

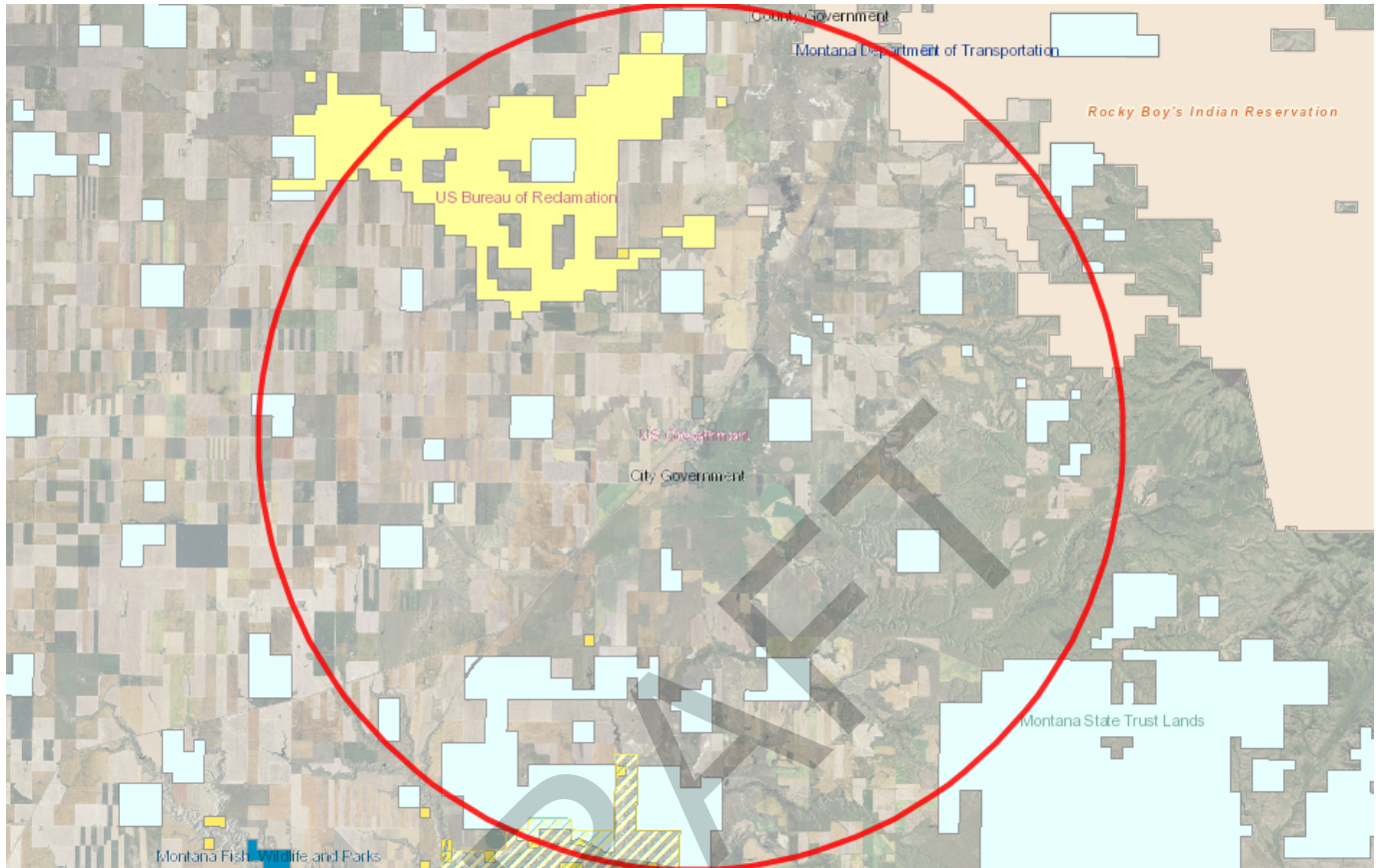
[Private Conservation Lands](#)

[Managed Areas](#)

Map features in the Montana Land Management Database or summaries provided in this report are not intended as a legal depiction of public or private surface land ownership boundaries and should not be used in place of a survey conducted by a licensed land surveyor. Similarly, map features do not imply public access to any lands. The Montana Natural Heritage Program makes no representations or warranties whatsoever with respect to the accuracy or completeness of this data and assumes no responsibility for the suitability of the data for a particular purpose. The Montana Natural Heritage Program will not be liable for any damages incurred as a result of errors displayed here. Consumers of this information should review or consult the primary data and information sources to ascertain the viability of the information for their purposes.

Land Management

Summarized by: **Big Sandy (Town)**



Land Management Summary

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	34,558 Acres (17%)			
Federal	13,551 Acres (7%)			
US Bureau of Land Management	159 Acres (<1%)			
BLM Owned	159 Acres (<1%)			
BLM National Monuments				2,183 Acres
Upper Missouri River Breaks National Monument				2,183 Acres
BLM Wild and Scenic Rivers				2,191 Acres
Upper Missouri Wild & Scenic River				2,191 Acres
US Bureau of Reclamation	13,392 Acres (7%)			
USBR Owned	13,392 Acres (7%)			
US Government				
US Government Owned				
State	20,752 Acres (10%)			
Montana State Trust Lands	20,752 Acres (10%)			
MT State Trust Owned	20,752 Acres (10%)			
Local	255 Acres (<1%)			
Local Government	255 Acres (<1%)			
Local Government Owned	255 Acres (<1%)			
Reservation Boundaries		5,873 Acres (3%)		
Rocky Boy's Indian Reservation		5,873 Acres (3%)		
Private Lands or Unknown Ownership	160,549 Acres (80%)			

Introduction to Land Management

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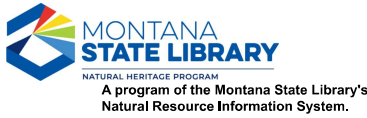
[Public Lands](#)

[Conservation Easements](#)

[Private Conservation Lands](#)

[Managed Areas](#)

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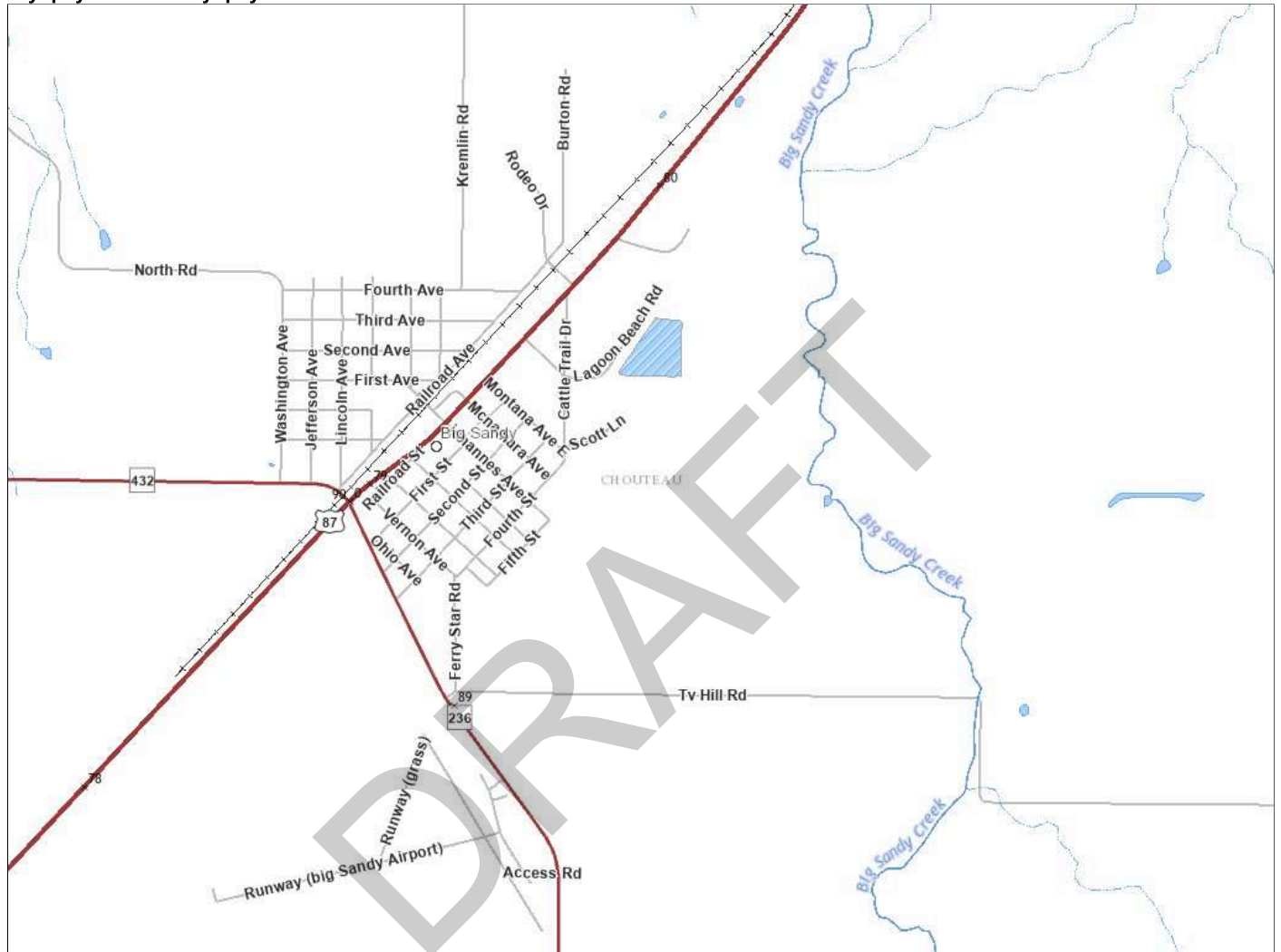
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Longitude -110.04819
48.19519 -110.15560



Montana Generalized Observations Report

Report generated 8/12/2024 10:53:00 AM

Generalized Observations for Mammals = ALL Mammals and Birds = ALL Birds and Reptiles = ALL Reptiles and Amphibians = ALL Amphibians and Fish = ALL Fish and Invertebrates = ALL Invertebrates and Vascular Plants = ALL Vascular Plants and Bryophytes = ALL Bryophytes and Lichens = ALL Lichens



Species	Obs Count	Earliest Obs:	Recent Obs:
+ Mammals - Bobcat (<i>Lynx rufus</i>)	1		
+ Mammals - Little Brown Myotis (<i>Myotis lucifugus</i>)	1	2003	2003
+ Mammals - Northern Pocket Gopher (<i>Thomomys talpoides</i>)	1	2012	2012
+ Mammals - Striped Skunk (<i>Mephitis mephitis</i>)	1	2008	2008
+ Birds - Alder Flycatcher (<i>Empidonax alorum</i>)	1	2009	2009
+ Birds - American Avocet (<i>Recurvirostra americana</i>)	1	2000	2000
+ Birds - American Bittern (<i>Botaurus lentiginosus</i>)	1	1990	1990
+ Birds - American Coot (<i>Fulica americana</i>)	7	1990	2004
+ Birds - American Crow (<i>Corvus brachyrhynchos</i>)	3	1996	1998
+ Birds - American Goldfinch (<i>Spinus tristis</i>)	15	1990	2014
+ Birds - American Kestrel (<i>Falco sparverius</i>)	5	1993	2002
+ Birds - American Pipit (<i>Anthus rubescens</i>)	4	1996	1996
+ Birds - American Robin (<i>Turdus migratorius</i>)	15	1990	2022
+ Birds - American Tree Sparrow (<i>Spizelloides arborea</i>)	5	1996	1996
+ Birds - American Wigeon (<i>Mareca americana</i>)	8	1990	1998
+ Birds - Baird's Sparrow (<i>Centronyx bairdii</i>)	2	2009	2009
+ Birds - Bank Swallow (<i>Riparia riparia</i>)	1	1993	1993
+ Birds - Barn Swallow (<i>Hirundo rustica</i>)	11	1990	2000
+ Birds - Bay-breasted Warbler (<i>Setophaga castanea</i>)	2	1903	1903

+ Birds - Black Tern (<i>Chlidonias niger</i>)	Obs Count: 2	Earliest Obs: 1990	Recent Obs: 1993
+ Birds - Black-bellied Plover (<i>Pluvialis squatarola</i>)	Obs Count: 1	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Black-billed Magpie (<i>Pica hudsonia</i>)	Obs Count: 2	Earliest Obs: 1996	Recent Obs: 2002
+ Birds - Black-capped Chickadee (<i>Poecile atricapillus</i>)	Obs Count: 8	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Black-crowned Night-Heron (<i>Nycticorax nycticorax</i>)	Obs Count: 1	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Blackpoll Warbler (<i>Setophaga striata</i>)	Obs Count: 1	Earliest Obs: 1997	Recent Obs: 1997
+ Birds - Blue Jay (<i>Cyanocitta cristata</i>)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Blue-winged Teal (<i>Spatula discors</i>)	Obs Count: 10	Earliest Obs: 1990	Recent Obs: 2004
+ Birds - Bobolink (<i>Dolichonyx oryzivorus</i>)	Obs Count: 7	Earliest Obs: 1990	Recent Obs: 2009
+ Birds - Brewer's Blackbird (<i>Euphagus cyanocephalus</i>)	Obs Count: 13	Earliest Obs: 1990	Recent Obs: 2014
+ Birds - Brown Thrasher (<i>Toxostoma rufum</i>)	Obs Count: 2	Earliest Obs: 1997	Recent Obs: 2000
+ Birds - Brown-headed Cowbird (<i>Molothrus ater</i>)	Obs Count: 6	Earliest Obs: 1990	Recent Obs: 2006
+ Birds - Bullock's Oriole (<i>Icterus bullockii</i>)	Obs Count: 2	Earliest Obs: 1990	Recent Obs: 1993
+ Birds - Burrowing Owl (<i>Athene cunicularia</i>)	Obs Count: 1	Earliest Obs: 2009	Recent Obs: 2009
+ Birds - Canada Goose (<i>Branta canadensis</i>)	Obs Count: 4	Earliest Obs: 1993	Recent Obs: 2018
+ Birds - Canvasback (<i>Aythya valisineria</i>)	Obs Count: 2	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Chestnut-collared Longspur (<i>Calcarius ornatus</i>)	Obs Count: 1	Earliest Obs: 2009	Recent Obs: 2009
+ Birds - Chipping Sparrow (<i>Spizella passerina</i>)	Obs Count: 4	Earliest Obs: 1993	Recent Obs: 1998
+ Birds - Cinnamon Teal (<i>Spatula cyanoptera</i>)	Obs Count: 5	Earliest Obs: 1993	Recent Obs: 2004
+ Birds - Clay-colored Sparrow (<i>Spizella pallida</i>)	Obs Count: 5	Earliest Obs: 1993	Recent Obs: 2000
+ Birds - Cliff Swallow (<i>Petrochelidon pyrrhonota</i>)	Obs Count: 6	Earliest Obs: 1990	Recent Obs: 1993
+ Birds - Common Grackle (<i>Quiscalus quiscula</i>)	Obs Count: 7	Earliest Obs: 1993	Recent Obs: 2014
+ Birds - Common Nighthawk (<i>Chordeiles minor</i>)	Obs Count: 6	Earliest Obs: 1990	Recent Obs: 2014
+ Birds - Common Raven (<i>Corvus corax</i>)	Obs Count: 4	Earliest Obs: 1998	Recent Obs: 2018
+ Birds - Common Tern (<i>Sterna hirundo</i>)	Obs Count: 1	Earliest Obs: 1990	Recent Obs: 1990
+ Birds - Common Yellowthroat (<i>Geothlypis trichas</i>)	Obs Count: 3	Earliest Obs: 1993	Recent Obs: 2000
+ Birds - Dark-eyed Junco (<i>Junco hyemalis</i>)	Obs Count: 9	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Downy Woodpecker (<i>Dryobates pubescens</i>)	Obs Count: 2	Earliest Obs: 1990	Recent Obs: 1996
+ Birds - Eared Grebe (<i>Podiceps nigricollis</i>)	Obs Count: 9	Earliest Obs: 1990	Recent Obs: 1996
+ Birds - Eastern Kingbird (<i>Tyrannus tyrannus</i>)	Obs Count: 6	Earliest Obs: 1990	Recent Obs: 2000
+ Birds - Eastern Screech-Owl (<i>Megascops asio</i>)	Obs Count: 1	Earliest Obs: 2016	Recent Obs: 2016
+ Birds - Eurasian Collared-Dove (<i>Streptopelia decaocto</i>)	Obs Count: 6	Earliest Obs: 2000	Recent Obs: 2021
+ Birds - European Starling (<i>Sturnus vulgaris</i>)	Obs Count: 26	Earliest Obs: 1990	Recent Obs: 2022
+ Birds - Ferruginous Hawk (<i>Buteo regalis</i>)	Obs Count: 3	Earliest Obs: 1993	Recent Obs: 2009
+ Birds - Franklin's Gull (<i>Leucophaeus pipixcan</i>)	Obs Count: 2	Earliest Obs: 1998	Recent Obs: 2000
+ Birds - Gadwall (<i>Mareca strepera</i>)	Obs Count: 7	Earliest Obs: 1990	Recent Obs: 2004
+ Birds - Golden Eagle (<i>Aquila chrysaetos</i>)	Obs Count: 1	Earliest Obs: 2018	Recent Obs: 2018
+ Birds - Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	Obs Count: 2	Earliest Obs: 1998	Recent Obs: 2009
+ Birds - Gray Catbird (<i>Dumetella carolinensis</i>)	Obs Count: 6	Earliest Obs: 1990	Recent Obs: 2000
+ Birds - Gray Partridge (<i>Perdix perdix</i>)	Obs Count: 2	Earliest Obs: 1995	Recent Obs: 1998
+ Birds - Great Blue Heron (<i>Ardea herodias</i>)	Obs Count: 5	Earliest Obs: 1990	Recent Obs: 2002
+ Birds - Greater Yellowlegs (<i>Tringa melanoleuca</i>)	Obs Count: 7	Earliest Obs: 1993	Recent Obs: 1996
+ Birds - Green-winged Teal (<i>Anas crecca</i>)	Obs Count: 4	Earliest Obs: 1993	Recent Obs: 1997
+ Birds - Harris's Sparrow (<i>Zonotrichia querula</i>)	Obs Count: 3	Earliest Obs: 1996	Recent Obs: 1997
+ Birds - Hermit Thrush (<i>Catharus guttatus</i>)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Horned Lark (<i>Eremophila alpestris</i>)	Obs Count: 8	Earliest Obs: 1990	Recent Obs: 2002
+ Birds - House Finch (<i>Haemorhous mexicanus</i>)	Obs Count: 16	Earliest Obs: 1993	Recent Obs: 2021
+ Birds - House Sparrow (<i>Passer domesticus</i>)	Obs Count: 20	Earliest Obs: 1977	Recent Obs: 2022
+ Birds - House Wren (<i>Troglodytes aedon</i>)	Obs Count: 1	Earliest Obs: 2000	Recent Obs: 2000
+ Birds - Killdeer (<i>Charadrius vociferus</i>)	Obs Count: 13	Earliest Obs: 1990	Recent Obs: 2019
+ Birds - Lark Bunting (<i>Calamospiza melanocorys</i>)	Obs Count: 6	Earliest Obs: 1952	Recent Obs: 2012
+ Birds - Lark Sparrow (<i>Chondestes grammacus</i>)	Obs Count: 3	Earliest Obs: 1990	Recent Obs: 2000
+ Birds - Least Sandpiper (<i>Calidris minutilla</i>)	Obs Count: 3	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Lesser Scaup (<i>Aythya affinis</i>)	Obs Count: 6	Earliest Obs: 1990	Recent Obs: 1996
+ Birds - Lesser Yellowlegs (<i>Tringa flavipes</i>)	Obs Count: 4	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Lincoln's Sparrow (<i>Melospiza lincolni</i>)	Obs Count: 3	Earliest Obs: 1996	Recent Obs: 1998
+ Birds - Loggerhead Shrike (<i>Lanius ludovicianus</i>)	Obs Count: 6	Earliest Obs: 1993	Recent Obs: 2009
+ Birds - Long-billed Curlew (<i>Numenius americanus</i>)	Obs Count: 3	Earliest Obs: 1990	Recent Obs: 1998
+ Birds - Long-billed Dowitcher (<i>Limnodromus scolopaceus</i>)	Obs Count: 4	Earliest Obs: 1993	Recent Obs: 1996
+ Birds - Magnolia Warbler (<i>Setophaga magnolia</i>)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Mallard (<i>Anas platyrhynchos</i>)	Obs Count: 13	Earliest Obs: 1990	Recent Obs: 2004
+ Birds - Marbled Godwit (<i>Limosa fedoa</i>)	Obs Count: 4	Earliest Obs: 1995	Recent Obs: 2000

+ Birds - Merlin (<i>Falco columbarius</i>)	Obs Count: 3	Earliest Obs: 1996	Recent Obs: 2019
+ Birds - Mountain Bluebird (<i>Sialia currucoides</i>)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Mountain Chickadee (<i>Poecile gambeli</i>)	Obs Count: 2	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Mourning Dove (<i>Zenaidura macroura</i>)	Obs Count: 15	Earliest Obs: 1990	Recent Obs: 2022
+ Birds - Northern Flicker (<i>Colaptes auratus</i>)	Obs Count: 6	Earliest Obs: 1996	Recent Obs: 1998
+ Birds - Northern Harrier (<i>Circus hudsonius</i>)	Obs Count: 10	Earliest Obs: 1990	Recent Obs: 2019
+ Birds - Northern Pintail (<i>Anas acuta</i>)	Obs Count: 6	Earliest Obs: 1993	Recent Obs: 2004
+ Birds - Northern Shoveler (<i>Spatula clypeata</i>)	Obs Count: 6	Earliest Obs: 1993	Recent Obs: 2004
+ Birds - Northern Shrike (<i>Lanius borealis</i>)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Northern Waterthrush (<i>Parus noveboracensis</i>)	Obs Count: 1	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Orange-crowned Warbler (<i>Leiothlypis celata</i>)	Obs Count: 2	Earliest Obs: 1996	Recent Obs: 1998
+ Birds - Pectoral Sandpiper (<i>Calidris melanotos</i>)	Obs Count: 1	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Pied-billed Grebe (<i>Podilymbus podiceps</i>)	Obs Count: 4	Earliest Obs: 1990	Recent Obs: 1996
+ Birds - Pine Siskin (<i>Spinus pinus</i>)	Obs Count: 3	Earliest Obs: 1993	Recent Obs: 1996
+ Birds - Prairie Falcon (<i>Falco mexicanus</i>)	Obs Count: 3	Earliest Obs: 1993	Recent Obs: 1996
+ Birds - Red Crossbill (<i>Loxia curvirostra</i>)	Obs Count: 1	Earliest Obs: 1990	Recent Obs: 1990
+ Birds - Red-breasted Nuthatch (<i>Sitta canadensis</i>)	Obs Count: 6	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Red-eyed Vireo (<i>Vireo olivaceus</i>)	Obs Count: 1	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Red-tailed Hawk (<i>Buteo jamaicensis</i>)	Obs Count: 6	Earliest Obs: 1993	Recent Obs: 2019
+ Birds - Red-winged Blackbird (<i>Agelaius phoeniceus</i>)	Obs Count: 20	Earliest Obs: 1990	Recent Obs: 2014
+ Birds - Redhead (<i>Aythya americana</i>)	Obs Count: 2	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Ring-billed Gull (<i>Larus delawarensis</i>)	Obs Count: 5	Earliest Obs: 1990	Recent Obs: 1998
+ Birds - Ring-necked Duck (<i>Aythya collaris</i>)	Obs Count: 2	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Ring-necked Pheasant (<i>Phasianus colchicus</i>)	Obs Count: 6	Earliest Obs: 1993	Recent Obs: 2000
+ Birds - Rock Pigeon (<i>Columba livia</i>)	Obs Count: 5	Earliest Obs: 2002	Recent Obs: 2022
+ Birds - Rough-legged Hawk (<i>Buteo lagopus</i>)	Obs Count: 2	Earliest Obs: 1996	Recent Obs: 2013
+ Birds - Ruby-crowned Kinglet (<i>Corthylio calendula</i>)	Obs Count: 8	Earliest Obs: 1996	Recent Obs: 1998
+ Birds - Ruddy Duck (<i>Oxyura jamaicensis</i>)	Obs Count: 4	Earliest Obs: 1990	Recent Obs: 1996
+ Birds - Rusty Blackbird (<i>Euphagus carolinus</i>)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Sandhill Crane (<i>Antigone canadensis</i>)	Obs Count: 1	Earliest Obs: 1905	Recent Obs: 1905
+ Birds - Savannah Sparrow (<i>Passerculus sandwichensis</i>)	Obs Count: 9	Earliest Obs: 1990	Recent Obs: 2000
+ Birds - Say's Phoebe (<i>Sayornis saya</i>)	Obs Count: 1	Earliest Obs: 1998	Recent Obs: 1998
+ Birds - Semipalmated Sandpiper (<i>Calidris pusilla</i>)	Obs Count: 2	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Sharp-shinned Hawk (<i>Accipiter striatus</i>)	Obs Count: 2	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Sharp-tailed Grouse (<i>Tympanuchus phasianellus</i>)	Obs Count: 1	Earliest Obs: 1998	Recent Obs: 1998
+ Birds - Short-eared Owl (<i>Asio flammeus</i>)	Obs Count: 7	Earliest Obs: 1990	Recent Obs: 2009
+ Birds - Solitary Sandpiper (<i>Tringa solitaria</i>)	Obs Count: 1	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Song Sparrow (<i>Melospiza melodia</i>)	Obs Count: 7	Earliest Obs: 1993	Recent Obs: 2000
+ Birds - Spotted Sandpiper (<i>Actitis macularius</i>)	Obs Count: 1	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Spotted Towhee (<i>Pipilo maculatus</i>)	Obs Count: 1	Earliest Obs: 1997	Recent Obs: 1997
+ Birds - Sprague's Pipit (<i>Anthus spragueii</i>)	Obs Count: 4	Earliest Obs: 1998	Recent Obs: 2009
+ Birds - Stilt Sandpiper (<i>Calidris himantopus</i>)	Obs Count: 3	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Swainson's Hawk (<i>Buteo swainsoni</i>)	Obs Count: 16	Earliest Obs: 1990	Recent Obs: 2014
+ Birds - Thick-billed Longspur (<i>Rhynchophanes mccownii</i>)	Obs Count: 1	Earliest Obs: 2009	Recent Obs: 2009
+ Birds - Townsend's Solitaire (<i>Myadestes townsendi</i>)	Obs Count: 3	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Tree Swallow (<i>Tachycineta bicolor</i>)	Obs Count: 5	Earliest Obs: 1990	Recent Obs: 1998
+ Birds - Upland Sandpiper (<i>Bartramia longicauda</i>)	Obs Count: 5	Earliest Obs: 1990	Recent Obs: 2009
+ Birds - Varied Thrush (<i>Ixoreus naevius</i>)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Vesper Sparrow (<i>Poocetes gramineus</i>)	Obs Count: 3	Earliest Obs: 1990	Recent Obs: 1998
+ Birds - Violet-green Swallow (<i>Tachycineta thalassina</i>)	Obs Count: 1	Earliest Obs: 1993	Recent Obs: 1993
+ Birds - Western Kingbird (<i>Tyrannus verticalis</i>)	Obs Count: 7	Earliest Obs: 1990	Recent Obs: 2014
+ Birds - Western Meadowlark (<i>Sturnella neglecta</i>)	Obs Count: 15	Earliest Obs: 1990	Recent Obs: 2022
+ Birds - Western Wood-Pewee (<i>Contopus sordidulus</i>)	Obs Count: 8	Earliest Obs: 1990	Recent Obs: 2000
+ Birds - White-crowned Sparrow (<i>Zonotrichia leucophrys</i>)	Obs Count: 5	Earliest Obs: 1996	Recent Obs: 1998
+ Birds - White-faced Ibis (<i>Plegadis chihi</i>)	Obs Count: 1	Earliest Obs: 2012	Recent Obs: 2012
+ Birds - White-throated Sparrow (<i>Zonotrichia albicollis</i>)	Obs Count: 4	Earliest Obs: 1996	Recent Obs: 1996
+ Birds - Whooping Crane (<i>Grus americana</i>)	Obs Count: 1	Earliest Obs: 1903	Recent Obs: 1903
+ Birds - Willet (<i>Tringa semipalmata</i>)	Obs Count: 4	Earliest Obs: 1990	Recent Obs: 1998
+ Birds - Willow Flycatcher (<i>Empidonax traillii</i>)	Obs Count: 1	Earliest Obs: 2000	Recent Obs: 2000
+ Birds - Wilson's Phalarope (<i>Phalaropus tricolor</i>)	Obs Count: 10	Earliest Obs: 1990	Recent Obs: 2000
+ Birds - Wilson's Snipe (<i>Gallinago delicata</i>)	Obs Count: 6	Earliest Obs: 1990	Recent Obs: 2000
+ Birds - Wilson's Warbler (<i>Cardellina pusilla</i>)	Obs Count: 4	Earliest Obs: 1993	Recent Obs: 1996

+ Birds - Wood Duck (<i>Aix sponsa</i>)	Obs Count: 1	Earliest Obs: 1990	Recent Obs: 1990
+ Birds - Yellow Warbler (<i>Setophaga petechia</i>)	Obs Count: 12	Earliest Obs: 1990	Recent Obs: 2018
+ Birds - Yellow-headed Blackbird (<i>Xanthocephalus xanthocephalus</i>)	Obs Count: 9	Earliest Obs: 1993	Recent Obs: 2000
+ Birds - Yellow-rumped Warbler (<i>Setophaga coronata</i>)	Obs Count: 4	Earliest Obs: 1996	Recent Obs: 1998
+ Reptiles - Painted Turtle (<i>Chrysemys picta</i>)	Obs Count: 1	Earliest Obs: 2024	Recent Obs: 2024
+ Amphibians - Great Plains Toad (<i>Anaxyrus cognatus</i>)	Obs Count: 1	Earliest Obs: 2005	Recent Obs: 2005
+ Invertebrates - <i>Sympetrum internum</i> (Cherry-faced Meadowhawk)	Obs Count: 2	Earliest Obs: 1974	Recent Obs: 1996
+ Vascular Plants - <i>Asclepias viridiflora</i> (Green Milkweed)	Obs Count: 1	Earliest Obs: 1954	Recent Obs: 1954
+ Vascular Plants - <i>Bromus tectorum</i> (Cheatgrass)	Obs Count: 1	Earliest Obs: 1954	Recent Obs: 1954
+ Vascular Plants - <i>Centaurea stoebe</i> (Spotted Knapweed)	Obs Count: 4	Earliest Obs: 2003	Recent Obs: 2003
+ Vascular Plants - <i>Cirsium arvense</i> (Canada Thistle)	Obs Count: 5	Earliest Obs: 2003	Recent Obs: 2003
+ Vascular Plants - <i>Convolvulus arvensis</i> (Field Bindweed)	Obs Count: 1	Earliest Obs: 2003	Recent Obs: 2003
+ Vascular Plants - <i>Linaria dalmatica</i> (Dalmatian Toadflax)	Obs Count: 2	Earliest Obs:	Recent Obs:
+ Vascular Plants - <i>Lolium multiflorum</i> (Italian Ryegrass)	Obs Count: 1	Earliest Obs: 2000	Recent Obs: 2000
+ Vascular Plants - <i>Polygonum convolvulus</i> (Black Bindweed)	Obs Count: 1	Earliest Obs: 1954	Recent Obs: 1954
+ Vascular Plants - <i>Polygonum sachalinense</i> (Giant Knotweed)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Vascular Plants - <i>Tamarix ramosissima</i> (Salt Cedar)	Obs Count: 1	Earliest Obs: 2012	Recent Obs: 2012
+ Vascular Plants - <i>Tanacetum vulgare</i> (Common Tansy)	Obs Count: 1	Earliest Obs: 1996	Recent Obs: 1996
+ Vascular Plants - <i>Vicia americana</i> (American Purple Vetch)	Obs Count: 1	Earliest Obs: 1994	Recent Obs: 1994

Citation for this report:

Montana Generalized Observations Report

Generalized Observations for Mammals = ALL Mammals and Birds = ALL Birds and Reptiles = ALL Reptiles and Amphibians = ALL Amphibians and Fish = ALL Fish and Invertebrates = ALL Invertebrates

and Vascular Plants = ALL Vascular Plants and Bryophytes = ALL Bryophytes and Lichens = ALL Lichens

Within Lat/Long: (48.15828,-110.04819) to (48.19519,-110.15560)

Natural Heritage Map Viewer, Montana Natural Heritage Program.

Retrieved on August 12, 2024, from <https://mtnhp.org/MapView/GenOBSReport.aspx>



Wetland and Riparian

Summarized by: **028N013E018** (Buffered PLSS Section)



Wetland and Riparian Mapping

P - Palustrine

AB - Aquatic Bed

F - Semipermanently Flooded 8 Acres

h - Diked/Impounded 4 Acres **PABFh**
x - Excavated 4 Acres **PABFx**

K - Artificially Flooded 2 Acres

x - Excavated 2 Acres **PABKx**

P - Palustrine, AB - Aquatic Bed

Wetlands with vegetation growing on or below the water surface for most of the growing season.

US - Unconsolidated Shore

C - Seasonally Flooded 9 Acres

x - Excavated 9 Acres **PUSCx**

P - Palustrine, US - Unconsolidated Shore

Wetlands with less than 75% areal cover of stones, boulders, or bedrock. AND with less than 30% vegetative cover AND the wetland is irregularly exposed due to seasonal or irregular flooding and subsequent drying.

EM - Emergent

A - Temporarily Flooded 346 Acres

(no modifier) 36 Acres **PEMA**
f - Farmed 303 Acres **PEMAf**
h - Diked/Impounded 7 Acres **PEMAh**

C - Seasonally Flooded 70 Acres

(no modifier) 62 Acres **PEMC**
h - Diked/Impounded 6 Acres **PEMCh**
x - Excavated 2 Acres **PEMCx**

P - Palustrine, EM - Emergent

Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.

SS - Scrub-Shrub

A - Temporarily Flooded 10 Acres

(no modifier) 10 Acres **PSSA**

J - Intermittently Flooded 5 Acres

(no modifier) 5 Acres **PSSJ**

P - Palustrine, SS - Scrub-Shrub

Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

R - Riverine (Rivers)

3 - Upper Perennial

UB - Unconsolidated Bottom

R - Riverine (Rivers), 3 - Upper Perennial, UB - Unconsolidated Bottom

F - Semipermanently Flooded 3 Acres
(no modifier) **3 Acres R3UBF**

Stream channels where the substrate is at least 25% mud, silt or other fine particles.

4 - Intermittent

■ SB - Stream Bed

R - Riverine (Rivers), 4 - Intermittent, SB - Stream Bed
Active channel that contains periodic water flow.

C - Seasonally Flooded 13 Acres
x - Excavated **13 Acres R4SBCx**

Rp - Riparian

1 - Lotic

■ FO - Forested
(no modifier)

1 Acres Rp1FO

Rp - Riparian, 1 - Lotic, FO - Forested
This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

2 - Lentic

■ FO - Forested
(no modifier)

3 Acres Rp2FO

Rp - Riparian, 2 - Lentic, FO - Forested
This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

DRAFT

Introduction to Wetland and Riparian

Within the report area you have requested, wetland and riparian mapping is summarized by acres of each classification present. Summaries are only provided for modern MTNHP wetland and riparian mapping and not for outdated (NWI Legacy) or incomplete (NWI Scalable) mapping efforts; [described here](#). MTNHP has made all three of these datasets and associated metadata available for separate download on the Montana [Wetland and Riparian Framework](#) web page.

Wetland and Riparian mapping is one of 15 [Montana Spatial Data Infrastructure](#) framework layers considered vital for making statewide maps of Montana and understanding its geography. The wetland and riparian framework layer consists of spatial data representing the extent, type, and approximate location of wetlands, riparian areas, and deep water habitats in Montana.

Wetland and riparian mapping is completed through photointerpretation of 1-m resolution color infrared aerial imagery acquired from 2005 or later. A coding convention using letters and numbers is assigned to each mapped wetland. These letters and numbers describe the broad landscape context of the wetland, its vegetation type, its water regime, and the kind of alterations that may have occurred. Ancillary data layers such as topographic maps, digital elevation models, soils data, and other aerial imagery sources are also used to improve mapping accuracy. Wetland mapping follows the federal Wetland Mapping Standard and classifies wetlands according to the Cowardin classification system of the National Wetlands Inventory (NWI) (Cowardin et al. 1979, FGDC Wetlands Subcommittee 2013). Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands differently than the NWI. Similar coding, based on U.S. Fish and Wildlife Service conventions, is applied to riparian areas (U.S. Fish and Wildlife Service 2009). These are mapped areas where vegetation composition and growth is influenced by nearby water bodies, but where soils, plant communities, and hydrology do not display true wetland characteristics. **These data are intended for use at a scale of 1:12,000 or smaller. Mapped wetland and riparian areas do not represent precise boundaries and digital wetland data cannot substitute for an on-site determination of jurisdictional wetlands.**

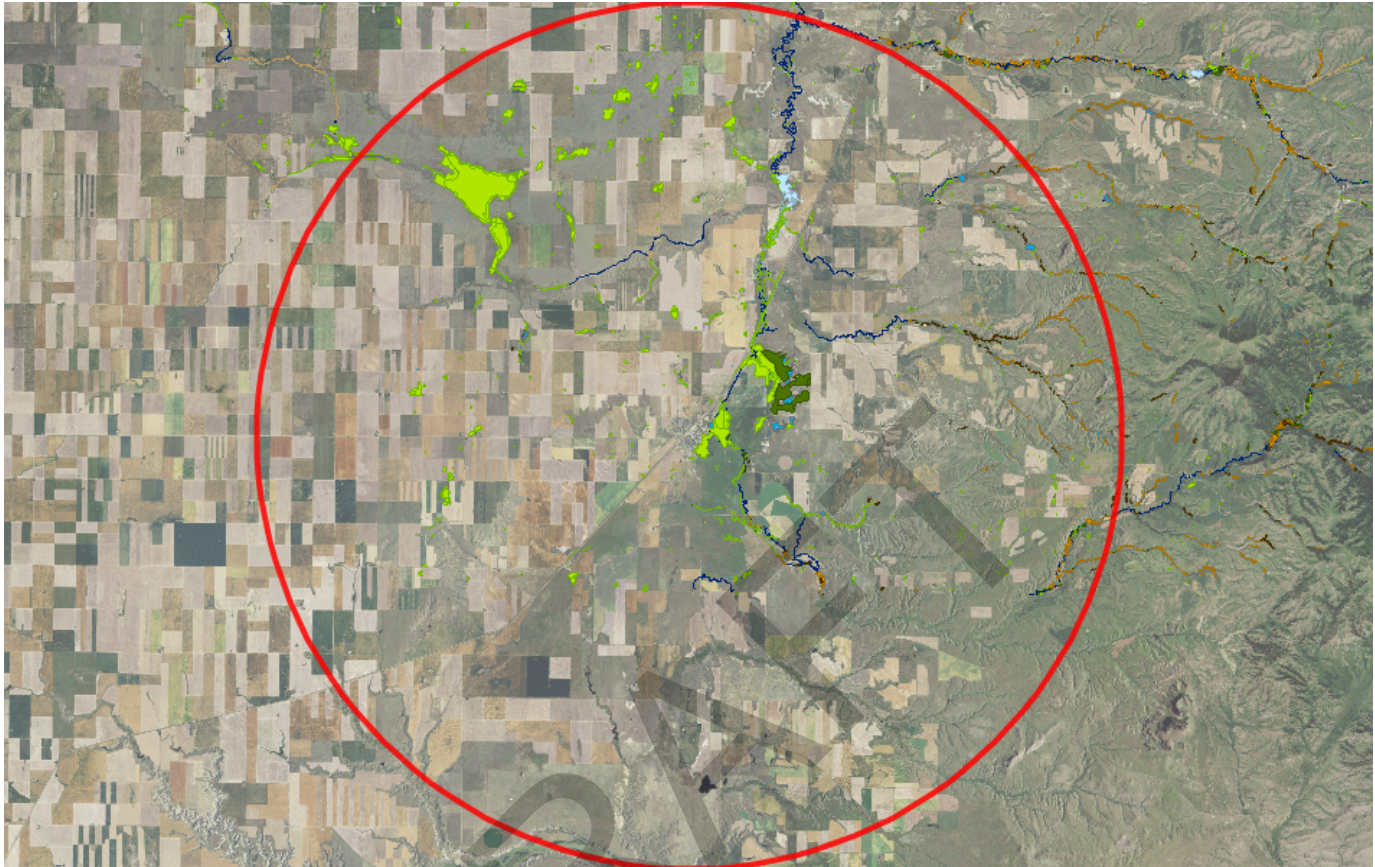
See detailed overviews, with examples, of both wetland and riparian classification systems and associated codes as a [storymap](#) and companion [guide](#)

Literature Cited

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31. Washington, D.C. 103pp.
- Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C.
- U.S. Fish and Wildlife Services. 2009. A system for mapping riparian areas in the western United States. Division of Habitat and Resource Conservation, Branch of Resource and Mapping Support, Arlington, Virginia.

Wetland and Riparian

Summarized by: **Big Sandy (Town)**



Wetland and Riparian Mapping

P - Palustrine

AB - Aquatic Bed	
F - Semipermanently Flooded	176 Acres
(no modifier)	19 Acres PABF
b - Beaver	14 Acres PABFb
h - Diked/Impounded	104 Acres PABFh
x - Excavated	39 Acres PABFx
G - Intermittently Exposed	15 Acres
h - Diked/Impounded	15 Acres PABGh
K - Artificially Flooded	9 Acres
x - Excavated	9 Acres PABKx

P - Palustrine, AB - Aquatic Bed
Wetlands with vegetation growing on or below the water surface for most of the growing season.

US - Unconsolidated Shore	
A - Temporarily Flooded	13 Acres
(no modifier)	12 Acres PUSA
h - Diked/Impounded	1 Acres PUSAh
x - Excavated	<1 Acres PUSAx
C - Seasonally Flooded	21 Acres
(no modifier)	9 Acres PUSC
h - Diked/Impounded	3 Acres PUSCh
x - Excavated	9 Acres PUSCx
J - Intermittently Flooded	101 Acres
(no modifier)	101 Acres PUSJ

P - Palustrine, US - Unconsolidated Shore
Wetlands with less than 75% areal cover of stones, boulders, or bedrock. AND with less than 30% vegetative cover AND the wetland is irregularly exposed due to seasonal or irregular flooding and subsequent drying.

EM - Emergent	
A - Temporarily Flooded	1,637 Acres
(no modifier)	879 Acres PEMA
f - Farmed	576 Acres PEMAf
h - Diked/Impounded	174 Acres PEMAh
x - Excavated	8 Acres PEMAx
B - Saturated	<1 Acres
(no modifier)	<1 Acres PEMB

P - Palustrine, EM - Emergent
Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.

C - Seasonally Flooded 1,217 Acres

(no modifier) 1,053 Acres **PEMC**
b - Beaver 14 Acres **PEMCb**
f - Farmed 28 Acres **PEMcf**
h - Diked/Impounded 100 Acres **PEMCh**
x - Excavated 22 Acres **PEMCx**

F - Semipermanently Flooded 9 Acres

(no modifier) 3 Acres **PEMF**
h - Diked/Impounded 6 Acres **PEMFh**

SS - Scrub-Shrub

A - Temporarily Flooded 11 Acres

(no modifier) 10 Acres **PSSA**
b - Beaver 1 Acres **PSSAb**

C - Seasonally Flooded 14 Acres

b - Beaver 14 Acres **PSSCb**

F - Semipermanently Flooded 1 Acres

b - Beaver 1 Acres **PSSFb**

J - Intermittently Flooded 340 Acres

(no modifier) 340 Acres **PSSJ**

P - Palustrine, SS - Scrub-Shrub

Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

L - Lacustrine (Lakes)

2 - Littoral

AB - Aquatic Bed

F - Semipermanently Flooded 145 Acres
h - Diked/Impounded 145 Acres **L2ABFh**

L - Lacustrine (Lakes), 2 - Littoral, AB - Aquatic Bed

Shorelines with vegetation growing on or below the water surface for most of the growing season.

R - Riverine (Rivers)

2 - Lower Perennial

UB - Unconsolidated Bottom

F - Semipermanently Flooded 65 Acres
(no modifier) 65 Acres **R2UBF**

R - Riverine (Rivers), 2 - Lower Perennial, UB - Unconsolidated Bottom

Stream channels where the substrate is at least 25% mud, silt or other fine particles.

3 - Upper Perennial

UB - Unconsolidated Bottom

F - Semipermanently Flooded 34 Acres
(no modifier) 34 Acres **R3UBF**

R - Riverine (Rivers), 3 - Upper Perennial, UB - Unconsolidated Bottom

Stream channels where the substrate is at least 25% mud, silt or other fine particles.

US - Unconsolidated Shore

A - Temporarily Flooded 6 Acres
(no modifier) 6 Acres **R3USA**

R - Riverine (Rivers), 3 - Upper Perennial, US - Unconsolidated Shore

Shorelines with less than 75% areal cover of stones, boulders, or bedrock and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.

4 - Intermittent

SB - Stream Bed

A - Temporarily Flooded 4 Acres
(no modifier) 4 Acres **R4SBA**

C - Seasonally Flooded 48 Acres

(no modifier) 27 Acres **R4SBC**
x - Excavated 21 Acres **R4SBCx**

R - Riverine (Rivers), 4 - Intermittent, SB - Stream Bed

Active channel that contains periodic water flow.

Rp - Riparian

1 - Lotic

SS - Scrub-Shrub
(no modifier)

161 Acres **Rp1SS**

Rp - Riparian, 1 - Lotic, SS - Scrub-Shrub

This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

FO - Forested
(no modifier)

82 Acres **Rp1FO**

Rp - Riparian, 1 - Lotic, FO - Forested

This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

EM - Emergent
(no modifier)

2 Acres **Rp1EM**

Rp - Riparian, 1 - Lotic, EM - Emergent

Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.

2 - Lentic

FO - Forested
(no modifier)

8 Acres **Rp2FO**

Rp - Riparian, 2 - Lentic, FO - Forested

This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

EM - Emergent
(no modifier)

3 Acres **Rp2EM**

Rp - Riparian, 2 - Lentic, EM - Emergent

Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.

Introduction to Wetland and Riparian

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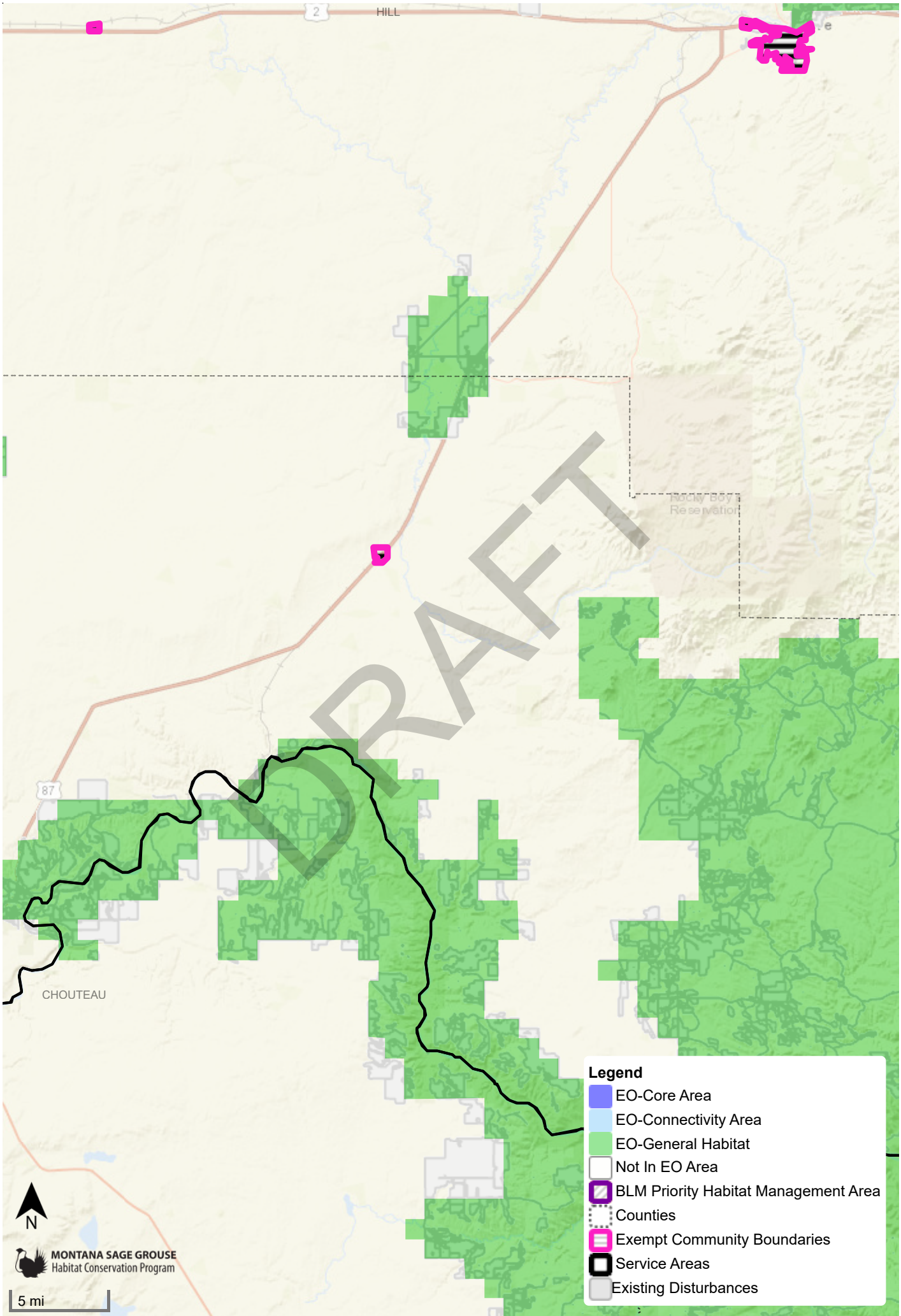
Wetland and Riparian mapping is one of 15 [Montana Spatial Data Infrastructure](#) framework layers considered vital for making statewide maps of Montana and understanding its geography. The wetland and riparian framework layer consists of spatial data representing the extent, type, and approximate location of wetlands, riparian areas, and deep water habitats in Montana.

Wetland and riparian mapping is completed through photointerpretation of 1-m resolution color infrared aerial imagery acquired from 2005 or later. A coding convention using letters and numbers is assigned to each mapped wetland. These letters and numbers describe the broad landscape context of the wetland, its vegetation type, its water regime, and the kind of alterations that may have occurred. Ancillary data layers such as topographic maps, digital elevation models, soils data, and other aerial imagery sources are also used to improve mapping accuracy. Wetland mapping follows the federal Wetland Mapping Standard and classifies wetlands according to the Cowardin classification system of the National Wetlands Inventory (NWI) (Cowardin et al. 1979, FGDC Wetlands Subcommittee 2013). Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands differently than the NWI. Similar coding, based on U.S. Fish and Wildlife Service conventions, is applied to riparian areas (U.S. Fish and Wildlife Service 2009). These are mapped areas where vegetation composition and growth is influenced by nearby water bodies, but where soils, plant communities, and hydrology do not display true wetland characteristics. **These data are intended for use at a scale of 1:12,000 or smaller. Mapped wetland and riparian areas do not represent precise boundaries and digital wetland data cannot substitute for an on-site determination of jurisdictional wetlands.**

See detailed overviews, with examples, of both wetland and riparian classification systems and associated codes as a [storymap](#) and companion [guide](#)

Literature Cited

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31. Washington, D.C. 103pp.
- Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C.
- U.S. Fish and Wildlife Services. 2009. A system for mapping riparian areas in the western United States. Division of Habitat and Resource Conservation, Branch of Resource and Mapping Support, Arlington, Virginia.



Legend

- EO-Core Area
- EO-Connectivity Area
- EO-General Habitat
- Not In EO Area
- BLM Priority Habitat Management Area
- Counties
- Exempt Community Boundaries
- Service Areas
- Existing Disturbances



MONTANA SAGE GROUSE
Habitat Conservation Program

5 mi



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Montana Ecological Services Field Office
585 Shephard Way, Suite 1
Helena, MT 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339

In Reply Refer To:
Project Code: 2024-0120246
Project Name: Big Sandy Medical Center

07/23/2024 17:25:22 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Montana Ecological Services Field Office

585 Shephard Way, Suite 1

Helena, MT 59601-6287

(406) 449-5225

DRAFT

PROJECT SUMMARY

Project Code: 2024-0120246

Project Name: Big Sandy Medical Center

Project Type: Drainage Project

Project Description: The poor stormwater drainage in the area adjacent to the Big Sandy Medical Center cause safety issues for residents. The roads and sidewalks are continually flooded, hampering access for patients, doctors, and visitors. In the winter, the roads and sidewalks are icy, which is especially concerning for elderly patients and individuals with mobility issues. This Preliminary Engineering Report (PER) investigates alternatives to improve stormwater drainage in the area adjacent to the Big Sandy Medical Center to improve patient and visitor safety.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@48.17867455,-110.10886746735298,14z>



Counties: Chouteau County, Montana

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

DRAFT

MAMMALS

NAME	STATUS
Grizzly Bear <i>Ursus arctos horribilis</i> Population: U.S.A., conterminous (lower 48) States, except where listed as an experimental population There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/7642	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

-
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
 2. The [Migratory Birds Treaty Act](#) of 1918.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO BALD AND GOLDEN EAGLES WITHIN THE VICINITY OF YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Northern Harrier <i>Circus hudsonius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350	Breeds Apr 1 to Sep 15

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

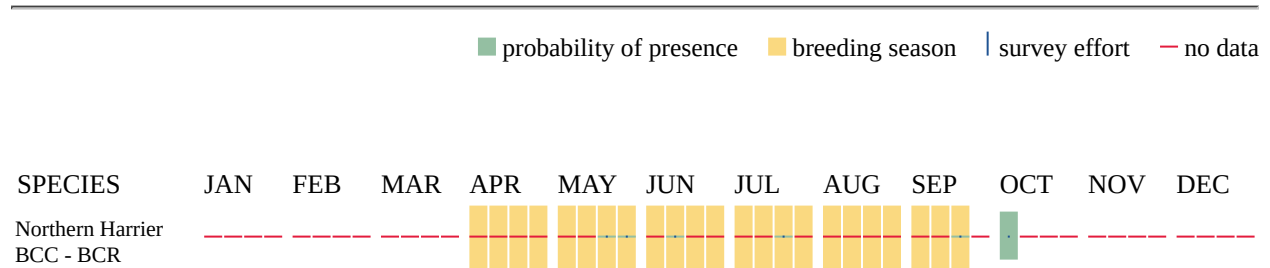
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (-)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Rapid City city
Name: Evelyn Dalldorf
Address: 18 East Main Street
Address Line 2: Suite 229
City: Rapid City
State: SD
Zip: 57701
Email: evelyn.dalldorf@kljeng.com
Phone: 6058725026

LEAD AGENCY CONTACT INFORMATION





Lead Agency: Big Sandy town

DRAFT



July 19, 2024

Wetlands

- | | | |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland |  Lake |
|  Estuarine and Marine Wetland |  Freshwater Forested/Shrub Wetland |  Other |
| |  Freshwater Pond |  Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.