

# **Environmental Assessment and Community Impact Statement**

## **Windmill Farms Subdivision**

Edgar, MT

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## Executive Summary

Windmill 312, LLC. has proposed the development of a nineteen-house subdivision to be sited on privately owned land in Edgar, MT.

The proposed Windmill Farms Subdivision is located along Highway 310, west of Edgar, Montana. The legal description is Tract 2 and 3 of C.O.S. \_\_\_\_ of the NW ¼ of Section 26 Township 04 South, Range 23 East, Edgar, Carbon County, Montana. The area of interest (AOI), Windmill Farms Subdivision, currently consists of an undeveloped parcel of land approximately 30.3 acres in size previously used for agriculture.

The Environmental Assessment and Community Impact Statement provides an analysis of potential environmental impacts that may result from actions related to the construction and operation of the Project.

## I. Description of Environmental Features

### A. Surface Water

#### 1. Plat Overlay or Sketch Map

NEPAssist, an EPA resource tool, was used to create a map of the AOI with the following features:

- a. *Any natural water systems.* Natural water systems that include: impaired streams, impaired waterbodies, streams, water bodies, sole source aquifers, watersheds, and wild and scenic rivers are not present in the AOI.
- b. *Any artificial water systems.* As shown on the proposed project layout, irrigation ditches will run adjacent to the interior roads for irrigating lawns and gardens. The water source is provided by the Prosperity Irrigation Ditch that runs under Highway 310 from the adjacent field from the west.
- c. *Time when water is present.* Carbon County has a milder climate with precipitation levels staying “Near Average” earlier in the year and “Slightly Dry” to “Extremely Dry” in the summer and fall months. Precipitation levels fluctuate slightly year to year, according to the Montana Office State Website, but stay fairly on trend. Water will run through the irrigation ditches approximately through May to October.
- d. *Subject to flood hazard or in delineated 100-year floodplain.* According to NEPAssist and FEMA’s National Flood Hazard Layer (Official), the AOI is in an area of Minimal Flood Hazard.
- e. *Existing or proposed stream bank alteration.* No construction or modification of lake beds or stream channels is proposed for the AOI.

A topographical map of the existing site and the proposed project layout is provided in Appendix A and Appendix B respectively. See Appendix C for the NEPAssist Report Map and Appendix D for the FEMA Flood Map.

## B. Groundwater

### 1. Groundwater Depth.

Data was collected to develop a soil profile for the AOI. Six test pits were dug in the AOI on January 22, 2018; results shown in Appendix E. The test pits were excavated a minimum of eight feet randomly throughout the AOI for an indication of the soil profile. Groundwater was not found when digging the six test pits at 8 feet.

The geologic source in the Edgar area is Alluvium (Quaternary). According to the USDA Web Soil Survey, depth to groundwater in the AOI is greater than 6 feet. Further analysis of data provided by Montana's Ground Water Information Center determined that the average static water level in the area is approximately 17.1 feet. This was determined by averaging the static water level of seven water wells found in the surrounding vicinity of the AOI.

### 2. Steps to avoid depletion or degradation of groundwater recharge areas

Vegetated buffers are areas of natural or established vegetation maintained to protect the water quality of neighboring areas. Buffer zones slow stormwater runoff, provide an area where runoff can permeate the soil, contribute to ground water recharge, and filter sediment. Buffer zones within the AOI include: storm water ditches and open space parkland.

Each lot will have its own individual water well and irrigation ditch water access for lawns, gardens, etc. Each water well will be installed by a licensed contractor. The system and all appurtenances have been designed to meet Montana Department of Environmental Quality (MDEQ) requirements. Each well will pump water at a rate less than 35 gallons per minute and/or 10 acre-feet annually, allowing the well to be considered exempt by Montana DNRC regulations. The proposed wells will be evaluated and approved by the Montana Department of Environmental Quality for non-degradation significance.

## C. Topography, Geology, and Soils

### 1. Topographic Map and Suitability for the Proposed Land

See Appendix A for a topographic map of the area to be subdivided.

A Custom Soil Resource Report for Carbon County Area, Montana was developed by the United States Department of Agriculture Natural Resources Conservation Service (NRCS). The Soil Report can be found in Appendix F including a Custom Soil Resource Report Soil Map.

The AOI consists of Fort Collins loam. Fort Collins loam consists of the whole AOI and is described as the following: 0 to 4 percent slopes, has an elevation of suitability of 2,200

to 6,000 feet, more than 80 inches depth to restrictive features, well drained, and farmland of statewide importance. Fort Collins loam soil has a high infiltration rate (low runoff potential) when thoroughly wet.

## 2. Highly Erodible Soils or Slopes

The Soil Resource Report Soil Map can be found in Appendix F. After careful review of the Soil Report, it was determined there are no areas within the project zone with slopes in excess of 15% and there are no anticipated unusual conditions in the AOI.

In the Web Soil Survey, Wind Erodibility Index, states that Fort Collins loam, 0 to 4 percent slopes, has a rating (tons per acre per year) of 48. *“The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.”*

The Web Soil Survey states, Fort Collins loam is rated for Local Roads and Streets as “Somewhat Limited”. *“Somewhat limited indicates that soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.”*

According to the Web Soil Survey, Fort Collins loam is rated for Shallow Excavations as “Somewhat Limited”. The report describes shallow excavations as trenches or holes dug to a maximum of 5 or 6 feet for purposes including open ditches, graves, and utility lines. *“Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.”*

Fort Collins loam is rated for Dwellings with Basements as “Somewhat Limited.” According to NRCS, *“Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.”*

Hazards within the AOI that have the potential for affecting development and could result in property damage or personal injury include: soil, rock, mud, and snow. Hazards such as soil and rock will be on location throughout the development of the subdivision and hazards such as snow will be weather dependent. The climate in the region is cold winters and hot summers, low humidity, and frequent sunshine. Extremes in temperatures are



characteristic. Hazards such as rock outcroppings, seismic activity, and high-water table were considered when designing the subdivision but were determined to be minimum risk.

Hazardous rock outcroppings are unlikely within the AOI. According to the USGS Mineral Resources data, the AOI consists of the geologic unit Alluvium. “A *general term for clay, silt, sand, gravel or similar unconsolidated detrital material, deposited during comparatively recent geologic time by a stream or other body of running water, as a sorted or semi-sorted sediment.*”

### 3. Hazard Prevention

Safety meetings will be held throughout the construction process to make personnel aware of the potential physical (mud, rock) and seasonal hazards (snow, ice) on site.

According to FEMA Flood Map, the AOI is in an area of Minimal Flood Hazard, see Appendix D. The average depth to ground water, as mentioned in Section B, was determined to be approximately 16-18 feet. Groundwater cycles should be noted so that if dewatering is needed, construction crews are prepared. However, it is not anticipated that a high-water table will be a hazard within the AOI.

The FEMA Earthquake Hazards Maps symbolize “seismic design categories (SDCs)”, which reflect the likelihood of experiencing earthquake shaking of various intensities. According to the FEMA Earthquake Hazards Map, the AOI could experience shaking of moderate intensity if an earthquake were to occur. A FEMA Earthquake Hazards Map can be found in Attachment G. Subdivision development will meet the International Building Codes and any additional seismic requirements allocated to the area.

### 4. Cut and Fill

Cut and fill of more than three feet in depth will take place in a variety of locations within the AOI. Utility lines, on-site sewer systems, and stormwater development, etc. will be placed onsite, as seen in the proposed layout found in Appendix B. The Montana Department of Environmental Quality Water Protection Bureau requires a Storm Water Pollution Prevention Plan (SWPPP) for construction activity be completed prior to development and maintained at the construction activity site.

## D. Vegetation

### 1. Vegetation Map

See Appendix F for the All Ecological Sites—Rangeland—Carbon County Area, Montana map provided by the NRCS.

- a. *Distribution of major vegetation types.* The ecological site type for the area of interest is Rangeland. The soil components in the area include Clayey (Cy) RRU 58A-C 11-

14" p.z. and Subirrigated (Sb). The plant community consists of primarily tall and medium grasses, forbs and shrubs. Further details of the plant community can be found in the Custom Soil Resource Report for Carbon County Area, Montana. The major vegetation types that exist on the site are crops consisting of grass, hay, alfalfa and grain crops during the crop season.

- b. *Location of critical plant communities.* Critical plant communities such as shoreline vegetation, stream bank, and vegetation on steep unstable slopes are not applicable in the AOI due to the agricultural practices on the entire site. However, vegetation in the area of interest does grow in soils susceptible to wind or water erosion as discussed in greater detail in Section I.C.2.

## 2. Vegetation Preservation

- a. *Preserve trees and other natural vegetation, e.g., locating roads and lot boundaries and planning construction to avoid damaging tree cover.* The boundary lines for the AOI can be found on the map in Appendix B. As shown on the map, the AOI is bordered by Pryor Road / Elwell Street to the north and Highway 310 to the west. There is no tree cover within the boundaries of the AOI and construction zone.
- b. *Protect critical plant communities, e.g., keeping structural development away from these areas or setting areas aside for open space.* There are no other critical plant communities known to exist on the AOI, as the site has been utilized for agricultural production. In the proposed layout, the AOI will have a designated area for private parkland that will be approximately 1.3 acre.
- c. *Prevent and control grass, brush or forest fires, e.g., green strips, water supply, access.* There will be irrigation ditches along the northern and eastern perimeter for water runoff from Pryor Rd / Elwell St and Highway 310. A storm water collection system will be in place in the AOI which will act as buffer strips. These types of fires tend to occur in summer months when irrigation ditches can provide water reserves if needed.
- d. *Measures to control noxious weeds.* The type and extent of noxious weeds is evaluated during an inspection conducted by the Weed Coordinator of the Carbon County Weed District. The inspection will be conducted within the timeframe of May through October to ensure the results are conclusive. Depending on the results from the weed inspection, a noxious weed plan may be submitted.

During construction noxious weed contaminated material (if present) will not be removed from the site, nor placed in an area that has not been previously infested with

noxious weeds. The developer will be responsible for weed control on lots after the development of the subdivision and prior to private purchase. Residents will be responsible for properly seeding their yards to prevent noxious weeds in the long term.

## E. Wildlife

### 1. Species of Fish and Wildlife

There are no surface water bodies within the AOI, therefore, risk to species of fish is negligible. However, the Northern American Wolverine, several species of protected birds, as well as a variety of upland game birds, deer, antelope, and nongame wildlife common on the prairies of Eastern Montana can be present in the area.

The North American Wolverine is proposed for official listing as an endangered species. According to the Fish and Wildlife Service, *“wolverines are restricted to high mountain environments near the treeline, where conditions are cold year-round and snow cover persists well into the month of May. Wolverines live in remote and inhospitable places, at high elevations away from human populations.”*

A standalone assessment was conducted to make an effective determination for the project. The Montana Natural Heritage-SOC Report describes the Wolverine as proposed on the following forests (BD, BRT, CG, FLAT, HLC, KOOT, LOLO). Wolverine species occurrences have been verified in the following counties: Beaverhead, Basin, Lake, Lew and Clark, Lincoln, Madison, Meagher, Mineral, Missoula Broadwater, Carbon, Cascade, Deer Lodge, Flathead, Gallatin, Glacier, Granit, Jefferson, Judith, Park, Pondera, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton, and Wheatland.

The AOI has landcover consisting primarily of shrub/scrub, no tree cover, and has human population in the surrounding area. The environment is not suitable habitat for the Northern American Wolverine and it is highly unlikely that this species inhabits the AOI.

Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The following birds, USFWS Birds of Conservation Concern, have a potential to be affected by activities in these locations: Bald Eagle, Brewer’s Sparrow, Burrowing Owl, Ferruginous Hawk, Golden Eagle, Lark Bunting, Lesser Yellowlegs, Long-billed Curlew, Long-eared Owl, Marbled Godwit, Mountain Plover, Pinyon Jay, Sage Thrasher, and Willet.

### 2. Map identifying critical wildlife areas

According to the U.S. Fish and Wildlife Service’s IPaC Information for Planning and Consultation, there are no critical habitats within the AOI.

### 3. Measures of Protection

To create and maintain biodiversity, the developer must consider all three major phases of development: design, construction, and post-construction.

The design phase will determine the placement of homes, lots, and roads while designating remaining area as natural open space. Where practicable driveways, access roads, and utility corridors will use or share existing accesses and right of ways to create an efficiency of space. Natural vegetation will be incorporated as buffers between development and adjacent properties to create a diversified visual, restored habitat and safe corridors for animals.

During the construction phase the viability of onsite and nearby natural habitat will be maintained through Best Management Practices. The placement of topsoil and routes used by heavy construction vehicles can impair survival of trees or native vegetation. Therefore, the route construction vehicles and equipment will use to access the subdivision and placement of materials will be evaluated prior to construction to minimize impact.

The post construction phase is the responsibility of the residents individually and collectively to manage their homes, yards, neighborhoods, and common areas in ways that do not compromise the original intent of the community. Recognizing ways to responsibly manage their yards and neighborhoods are critical factors to restoring and conserving biodiversity within the developed AOI.

Homeowners can minimize the impact of pets on wildlife by keeping cats indoors and dogs on leashes, as well as cleaning up after the pet. Light and noise pollution can be minimized by installing dark-sky lighting fixtures that direct light downward and minimize the amount of light that shines outward and upward. Limiting the height of perimeter fencing is a protection measure that can help the migration of elk and deer.

## II. Summary of Probable Impacts

### A. Effect on Agriculture

1. Acres removed from the production of crops or livestock.

The AOI currently consists of an undeveloped parcel approximately 30.3 acres in size used for agriculture. Due to the proposed development, the AOI will have a change of use from agriculture to residential.

2. Acres of prime farmland removed

The AOI, approximately 30.3 acres, is considered farmland of statewide importance, all of which will be removed.

3. Effect on use of remainder and adjoining properties as farm or ranch land

The AOI is not anticipated to adversely affect the adjoining properties. The site currently has irrigation rights to the Prosperity Ditch. All irrigation rights associated with the property are to be transferred to the homeowner's association.

4. Potential Conflicts with adjacent agricultural operations

*a. Interference with movement of livestock or farm machinery, maintenance of fences, weed proliferation, vandalism or theft, harassment of livestock by pets or humans.*

There are no anticipated potential conflicts with the surrounding agricultural operations due to the development of the AOI.

*b. Effect on market value of surrounding land and the net effect on taxes resulting from additional services.*

The effect on market value of the surrounding land may improve due to the expansion of residential land use within Edgar, Montana. The additional services provided will be the dedicated roads within the AOI. The net effect of taxes on the surrounding land may be minimal.

### B. Effect on Agricultural Water User Facilities

1. Location of or proximity to agricultural water user facilities.

The adjacent farming operations currently use a gated pipe irrigation system, flood irrigation, and center pivots. The AOI will connect to the irrigation system to provide water for individual lot surface water use (yards, gardens, etc.)

2. Potential Conflicts between facility users and subdivision residents including seeps, flooding, washouts; obstructions and interference, and unintended uses

The AOI slopes towards the southeast end near the rail road. Irrigation ditches will be constructed throughout the AOI to prevent flooding, washouts, interference, etc. between the surrounding properties. Every subdivision property will also have an individual water well which helps to minimize potential conflicts regarding water use.

3. Water Rights

The water wells proposed for the individual residential lots, will draw at a rate less than 35 gallons per minute and/or 10 acre-feet annually, allowing the well to be considered exempt by Montana DNRC regulations. The irrigation water rights will be divided between the lots in the AOI, drawing no more water than previously obtained from the Prosperity Ditch

4. Vehicular access to facility

There will not be an access road developed between the adjacent property and the AOI. The AOI can be accessed via Pryor Rd. / Elwell St.

### C. Effect on Local Services

1. Increased demand on services and need to expand services

Impacts due to increased demand on services should be minimal from the development of the 19-lot residential subdivision. The increased demand and impacts thereof are discussed in detail below.

2. Ability to provide services to subdivision

a. *Response times*

Edgar Volunteer Fire Station is within Edgar, Montana which is less than a mile from the AOI. The Carbon County Sheriff's Department is located in Red Lodge, Montana, located approximately 37 miles away. There are three ambulance services located in the county, at Bridger, Joliet, and Red Lodge. All response times to the AOI may vary depending on where the response teams are located at the time of the call. No additional burden or adverse effect is anticipated.

b. *Conditions or roads, bridges, and railroad crossings*

The primary roadways accessing the AOI are Pryor Road / Elwell Street and Highway 310. Both roadways are in good to fair condition. Carbon County maintains these existing roads. No additional burden or adverse effect is anticipated.

c. *Physical barriers*

There are no known physical barriers to the AOI. No additional burden or adverse effect is anticipated.

3. Provision of adequate local services and public facilities simultaneous or prior to onset of impact

Sufficient public services are available for the AOI which include: solid waste collection contractor, emergency medical response, fire department, and law enforcement. Private utilities such as power, gas, telephone, and cable can be extended to the AOI at the discretion of the homeowner.

4. Any special or rural improvement districts that would obligate local government involvement fiscally or administratively

A Rural Special Improvements Districts (RSID) will be created for the maintenance of the proposed roads and the dry fire hydrant located within the AOI. The RSID will be established as part of the platting process. Fees will be added to the County tax assessment for each subdivided lot.

#### D. Effect on Natural Environment

1. Runoff reaching surface waters

The soils reported from the test pits, see Appendix E Test Pit diagram, are described as sandy clay soils. These soils are well-drained so that water is withdrawn from the soil readily but not swiftly. These soils will allow for the storm water runoff in the ditches and boulder pits to empty quickly and recharge the ground water.

After recharging the ground water, runoff reaching surface waters is unlikely therefore, potential impacts to surface waters would be minimal. The nearest surface water to the AOI is the Clarks Fork Yellowstone River, approximately a half of a mile to the southeast. A railroad and farmland acreage separate the AOI from the Clarks Fork Yellowstone River.

2. Impacts on ground water quantity and quality

The individual water wells on each lot will be designed to meet the Montana Department of Environmental Quality (MDEQ) requirements. The low pump rate (less than 35 gallons per minute and/or 10 acre-feet annually) will allow the well to be considered exempt by Montana DNRC regulations and have negligible impact to ground water reserves.

3. Impacts on air quality

According to the EPA, Edgar, MT is not within an area of nonattainment. The air quality in the area is good and typical for a rural community in Carbon County, therefore, the impact of development will be minimal to air quality.

4. Impacts on scenic resources

The AOI is approximately 30.3 acres of land previously used for agriculture. The following are examples of scenic resources not included within the AOI: landforms, human development, recreational trails, and lakes.

5. Impacts on historic, pre-historic, and cultural resources

The Montana State Historic Preservation Office (SHPO) was contacted to determine the presence of any known cultural and/or historic sites within the AOI. The file search yielded no previously recorded sites within the designated AOI. The SHPO does not recommend for a cultural resource inventory at this time. The SHPO stated, as long as there will be no disturbance or alteration to structures over fifty years of age, there is low likelihood cultural properties will be impacted. Therefore, at the time, the impacts on historic, pre-historic, and cultural resources are projected to be negligible. See Appendix H, File Search Request for the AOI, for further details.

6. Noxious Weeds

Noxious weeds degrade habitat, crowd native plants, create fire hazards, poison and injure animals and humans. Areas with a history of disturbance are at a risk of weed encroachment.

If the presence of noxious weeds are determined during the weed inspection, a Noxious Weed Control Plan may be required prior to final plat recordation, which details measures to be taken to control noxious weeds.

To reduce the spread and establishment of noxious weeds and to re-establish permanent vegetation, disturbed areas will need to be seeded with desirable plant species.

7. Wetlands not covered under nationwide permits

According to the U.S. Fish and Wildlife Service's IPaC Information for Planning and Consultation, there are no known wetlands within the AOI.



## E. Effect on Wildlife and Wildlife Habitat

### 1. Loss of significant, important, and critical habitat

According to the U.S. Fish and Wildlife Service's IPaC Information for Planning and Consultation, there are no critical habitats within the AOI. According to Montana Sage Grouse Habitat Conservation Map, the AOI is not within the core sage grouse habitat.

### 2. Impacts on significant, important, and critical habitat

According to the U.S. Fish and Wildlife Service's IPaC Information for Planning and Consultation, there are no critical habitats within the AOI. Critical habitat for listed species is not known to be present on the AOI, as the entire site was modified for agricultural production at one time. However, the changing from agricultural land use to residential land use can impact adequate food supply for multiple species of birds including Canadian Geese.

The AOI will not close existing operations in the area and will not develop new points of access to public lands. The only roads to be developed are the two access roads connecting the AOI to the existing road of Pryor Road / Elwell Street.

## F. Effect on Public Health and Safety

### 1. Creation of potential man-made hazards

Two intersections will be developed within the AOI and both accesses to Pryor Rd / Elwell St. will intersect on the northern portion of the AOI. Safety signs will be in place at the intersections to minimize potential hazards. Due to the nature of the AOI, the hazard potential should be minimal.

### 2. Natural Hazards

Land instability, flooding, ponding, rock outcrops, drought, and fires are natural hazards considered in the design process of the AOI. The AOI development will meet the International Building Codes and any additional seismic requirements allocated to the area.

Grassland and bush fires are a potential hazard within the AOI. Fire hazards will be minimized in several ways including, provision of adequate on-site water supply, limiting fire fuels within the AOI, and community awareness.

Natural hazards such as steep slopes, wildfires (timber), high-risk floodplains were determined to be negligible within the AOI.

3. Existing potential man-made hazards (high pressure gas lines, lack of fire protection)

Residential neighborhoods are in the vicinity of the AOI. Close proximity to residential neighborhoods can increase the likelihood of a man-made hazard. However, there are no known health or safety hazards on or near the AOI.

4. Traffic Safety

Driveways, access roads, and utility corridors will use or share existing access points and right of ways where feasible. Asphalt roads will be constructed within the AOI and will connect with Pryor Road / Elwell Street. Appropriate safety measures will be put in place at these intersections.

5. Emergency vehicle access

An emergency response to a residential job site will be similar to a response to a completed and occupied residential neighborhood, except there will only be one entrance point for the emergency vehicle to access the construction area. In an emergency a contractor will have someone meet emergency personnel at the entrance and direct them to the location of the emergency.

The emergency vehicle will have to travel on the temporary construction road (in the early development phase) at reduced speeds since the road will be unpaved and potentially rough or rutted. The emergency vehicle will be sharing the roadway with construction workers (pedestrians), construction equipment, materials, and heavy trucks.

Emergency vehicle access to the developed AOI will have two points of entry from Pryor Road / Elwell Street.

6. Emergency medical response time

An emergency medical response to a residential job site will be similar to a response to a completed and occupied residential neighborhood, except access may not be as easily available in a construction area, minimally effecting response time. In an emergency a contractor will have someone meet emergency personnel at the entrance and direct them to the location of the emergency.

Emergency personnel may have to carry equipment and/or the patient some distance back to the emergency vehicle. Expect noise, dust, and lighting that will often be too bright or too dim in a construction zone and additional protective equipment may be required in some situations.

Emergency response time will vary depending on the location of the response team at the time of the call.

7. Condition of road letting to proposed subdivision

Pryor Road / Elwell Street is in good condition within the AOI. The road currently shows no signs of deterioration or structural instability. The proposed traffic is negligible when compared to the capacity of the road and will therefore have minimal impact.

8. Condition of bridges on road leading to proposed subdivision

There are currently no bridges on the access road leading to the AOI.

9. Other items that endanger public health and safety

Weather conditions can be unpredictable and have the potential to cause hazards at a construction zone and on the roads.

### III. Community Impact Report

#### A. Education and Busing

##### 1. Available educational facilities

The AOI falls into the Fromberg School District within Carbon County. Fromberg School offers Kindergarten through eighth grade facilities and offers ninth through twelfth grade facilities. The school facilities are approximately six miles from the AOI.

##### 2. Affected school system

An estimated number of 6 students will be added by the AOI; this was determined using information provided by the Montana Census Data. A statement provided by Teri Harris the Superintendent/Principal/AD of Fromberg School District, states that the school system would be able to manage the projected children coming from the AOI with the present personnel, facilities, and by the existing school bus system. The statement can be found in Appendix I.

#### B. Roads and Maintenance

##### 1. Daily traffic

###### *a. Capability of existing and proposed roads to accommodate increase in traffic.*

Based on the Trip Generation Manual, 9th Edition published by the Institute of Transportation Engineers, the AOI would produce total daily traffic of 228 trips per day, AM peak hour of 25 trips, and PM peak hour of 25 trips.

The developer will construct an asphalt road within the AOI meeting the County subdivision regulations. The proposed asphalt road will provide an asphalt-to-asphalt connection with Pryor Road / Elwell Street. Pryor Road / Elwell Street is in good condition within the AOI. The road currently shows no signs of deterioration or structural instability. Measurements pulled from a desktop review show the average width of the asphalt section of the road to be approximately 24 feet.

Performance Engineering determined that providing an asphalt-to-asphalt connection with less than 230 vehicular trips per day to Pryor Road / Elwell Street will have a marginal impact on the transportation network due to the AOI development. Peak traffic generation during the AM and PM hours is minimal when compared to the capacity of Pryor Road / Elwell Street.

*b. Increased maintenance problems and cost*

The development of the AOI will have a relatively small footprint, which can equate to lower costs for maintaining roads. The developer will finance the construction of the roadways within the AOI. Maintenance of the asphalt roads within the AOI will be provided by the RSID.

2. Proposed new public or private access roads

*a. Storm run-off*

A SWPPP will be completed prior to the road construction. The SWPPP will provide information on methods such as best management practices (BMPs) to prevent water pollution due to construction activities. A RSID for maintenance will be established prior to filing the final plat of the AOI, which will establish an initial maintenance schedule for the public roadways.

*b. Road surface and provisions for dust*

Dust shall be minimized during construction of the AOI as specified in the construction specifications. The constructed roads will have an asphalt surface, which will minimize dust.

*c. Facilities for streams or drainage crossing*

Culverts will be installed where the interior roads extend to Pryor Road / Elwell Street.

*d. Seeding of disturbed areas*

Residents will be required to seed their properties with species of vegetation that are conducive to the native environment.

3. Closing or modification of existing roads

There is no proposed closure or modification to any existing roadway.

4. Road access within the subdivision

Access to Pryor Road / Elwell Street will come from two roads developed within the AOI. The new roads shall be designed to maximize pedestrian safety and circulation within the AOI. Due to the location of the subdivision (rural area), the average lot size being greater than one acre, and the town of Edgar no longer containing a school, foot traffic out of the AOI is expected to be minimal. Potential safety measures that could be taken include Pedestrian Crossing signage near the entry points of the subdivision. There will be no access to any individual lot directly from an arterial road.

5. Year-round access

The AOI will be available for year-round access by conventional automobile over legal rights-of-way. No private property will be traversed to access the AOI.

6. Installation, maintenance, snow removal

The existing adjacent roadways are owned and maintained by Carbon County. It is expected that additional revenue from taxes on the subject property would offset any additional roadway maintenance costs, including snow removal.

### C. Water, Sewage, and Solid Waste Facilities

1. Water Supply and sewage treatment systems

Each lot will have an individual water well that will draw at a rate less than 35 gallons per minute and/or 10 acre-feet annually. Each lot will contain a wastewater collection system that will include an individual septic tank and drain field.

2. Cost and Finance

The wastewater system and the water wells are designed by Performance Engineering and will go through an approval process by the Montana Department of Environmental Quality. The property owner will finance the development of both of the systems.

3. Solid waste generated, collecting and disposing

Residents of the AOI will have to set up an agreement with a contracted solid waste removal company. The solid waste will be collected from the individual lots and then transported to the City of Billings landfill.

4. Disposal Company

Disposal services in the area are Republic Services and Mac Kenzie Disposal Inc. that will be contracted by the residents of the AOI.

### D. Fire Protection

1. Fire District

The AOI will fall under jurisdiction of the Edgar Volunteer Fire District. The Fire District has 14 firemen. The department has one structure truck, one 3600 gal tender, two 800-gal tender, grass trucks, three type 6 grass trucks, and one command pickup. There will be a dry fire hydrant located within the AOI for fire protection.

2. Response Time

Due to the close proximity of the volunteer fire station located within Edgar Montana and generally low traffic volumes in the area, response time should be minimal but may vary.

3. Source

Dave Wetstein, Fire Chief, (406) 962-4440

E. Law Enforcement Protection

1. Law enforcement personnel and response time

The Carbon County Sheriff's Office is the chief law enforcement agency in Carbon County, Montana. The Carbon County Sheriff's Department is located in Red Lodge, Montana approximately 37 miles southwest of Edgar, Montana. The Department is responsible for patrolling the entire Carbon County. Response time will vary depending on the patrol schedule, who is on duty, and location of the officer at the time of the call. Under Sheriff Jeff Schmalz, reported that the Department is currently understaffed and adding potential calls from the AOI would exaggerate the problem.

2. Law enforcement requirements

There are no requirements of law enforcement to serve the AOI due to its location within Carbon County.

3. Source

Jeff Schmalz, Under Sheriff of Carbon County, (406) 445-7580

F. Payment for Extension of Capital Facilities

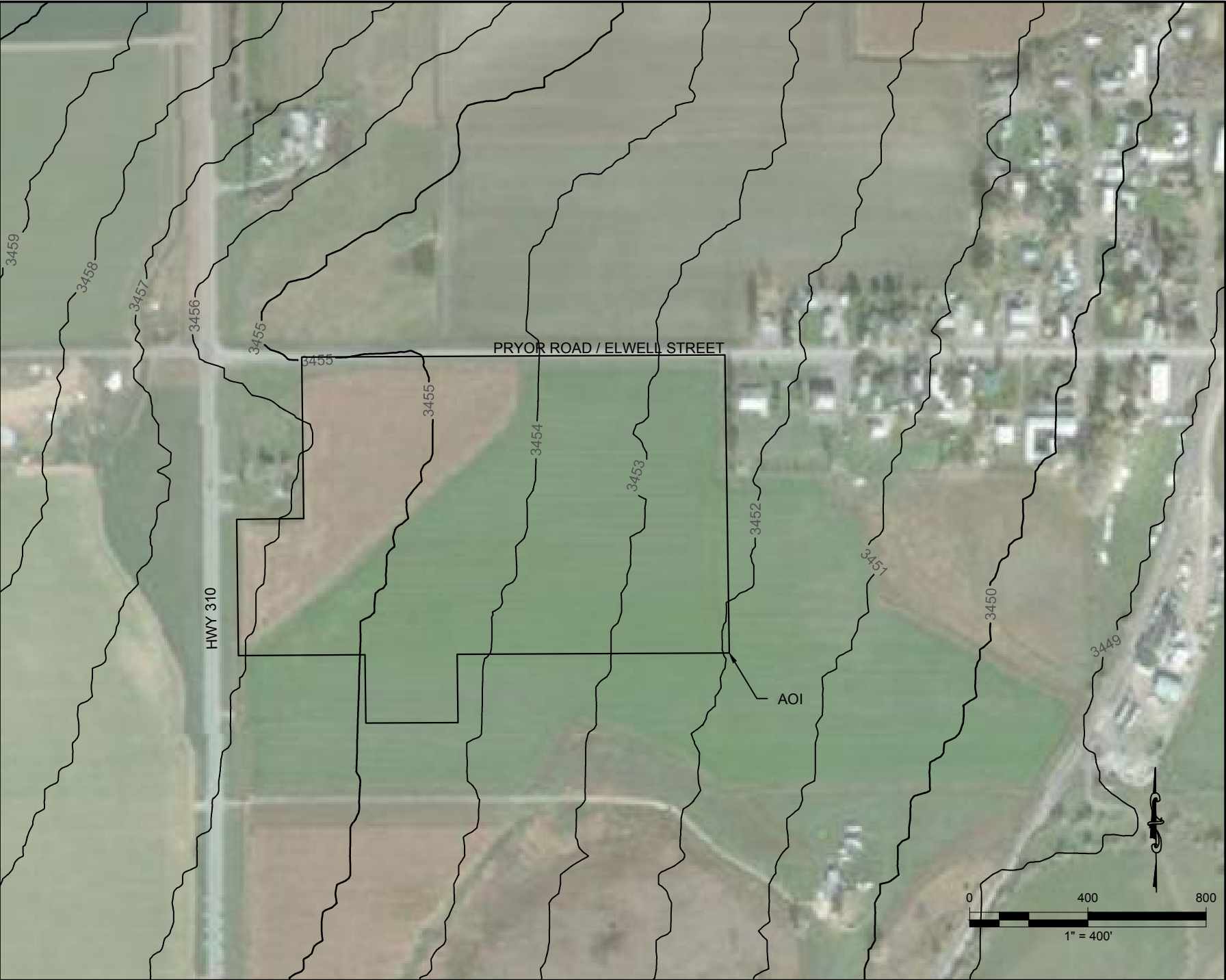
The subdivider will pay for the cost of extending capital facilities required from expected impacts directly attributable to the AOI with capital if deemed necessary.

References:

- Carbon County, <http://co.carbon.mt.us/>
- Carbon County Sheriff's Department, <http://www.carboncosheriff.org/>
- Cultural Records, Montana State Historic Preservation Office, <https://mhs.mt.gov/Shpo/CulturalRecords>
- DNRC, Water Resources Survey, Carbon County, [http://dnrc.mt.gov/divisions/water/water-rights/docs/survey-books/carbonwrs\\_1966.pdf](http://dnrc.mt.gov/divisions/water/water-rights/docs/survey-books/carbonwrs_1966.pdf)
- Edgar Water Wells, Montana Bureau of Mines and Geology, <http://data.mbm.mtech.edu/mapper/mapper.asp?view=Wells&>
- Emergency Operations Plan, Carbon County, Montana, <http://co.carbon.mt.us/wp-content/uploads/2015/11/2010-EOP-BASIC-PLAN.pdf>
- FEMA's National Flood Hazard Layer (Official), FEMA GeoPlatform, <https://msc.fema.gov/portal/search#searchresultsanchor>
- FEMA's Earthquake Hazard Maps, FEMA GeoPlatform, <https://www.fema.gov/earthquake-hazard-maps>
- Fromberg Public Schools; <http://www.frombergpublicschools.com/>
- IPaC Information for Planning and Construction, U.S. Fish and Wildlife Service, <https://ecos.fws.gov/ipac/location/DV4YOLSEGVC6ZIGODOW3MMJDQY/resources>
- Montana Climate, Montana Official State Website, [https://mslservices.mt.gov/Geographic\\_Information/Maps/drought/](https://mslservices.mt.gov/Geographic_Information/Maps/drought/)
- Montana Sage Grouse Habitat Conservation Map, Montana Official State Website, <https://sagegrouse.mt.gov/ProgramMap>
- Montana Census Data: Households and Families, <http://www.census-charts.com/HF/Montana.html>
- Montana's Ground Water Information Center, Montana Bureau of Mines and Geology, <http://mbmggwic.mtech.edu/>
- NEPAassist, Environmental Protection Agency, <https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=Montana>
- Property Record Card, Montana Cadastral, <http://svc.mt.gov/msl/mtcadastral/>
- Web Soil Survey, U.S. Department of Agriculture Natural Resources Conservation Service, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>



APPENDIX A  
EXISTING SITE MAP



PROJECT TITLE <b>WINDMILL FARMS SUBDIVISION</b>	DRAWN BY JTR	CLIENT <b>WINDMILL 312, LLC BRUCE TONN, PARTNER</b> 5427 WALTER HAGEN BILLINGS, MT 59106
	DATE 3/18	
SHEET TITLE <b>EXISTING SITE MAP</b>	CHECKED BY MB	
<div><div><b>PERFORMANCE ENGINEERING</b></div><div>7100 COMMERCIAL AVE., SUITE 4 OFFICE - 406-394-0080</div><div>BILLINGS, MT 59101 www.performance-ec.com</div></div>		
<b>EXHIBIT EX 1</b> COPYRIGHT 2018 ©		

APPENDIX B  
PROPOSED SITE MAP



PROJECT TITLE  
**WINDMILL FARMS  
SUBDIVISION**

DRAWN BY  
TTR

DATE  
3/18

CHECKED BY  
MB

SHEET TITLE  
**PROPOSED LAYOUT**

CLIENT  
**WINDMILL 312, LLC  
BRUCE TONN, PARTNER**

5427 WALTER HAGEN  
BILLINGS, MT 59106

**PERFORMANCE  
ENGINEERING**

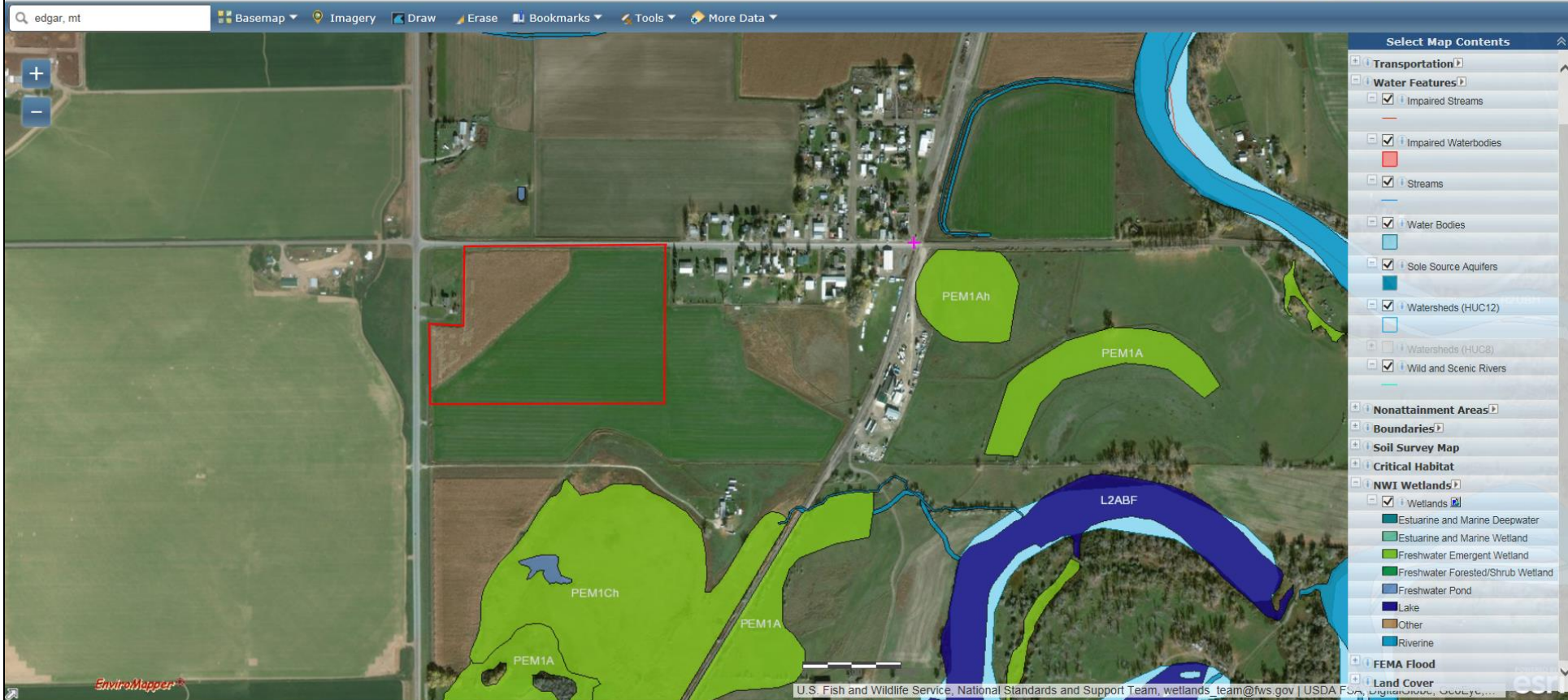
7100 COMMERCIAL AVE., SUITE 4  
OFFICE - 406-394-0080

BILLINGS, MT 59101  
www.performance-ec.com

EXHIBIT  
**EX 2**

COPYRIGHT 2018 ©

APPENDIX C  
NEPASSIST REPORT



APPENDIX D  
FEMA FLOOD MAP



NOTES TO USERS

Map is for use in administering the National Flood Insurance Program. It does not identify areas subject to flooding, particularly from local drainage of small size. The community map repository should be consulted for more detailed information in areas where Base Flood Elevations (BFEs) have been determined, users are encouraged to consult the Flood and Floodway Data and/or Summary of Stillwater Elevations tables and within the Flood Insurance Study (FIS) report that accompanies this FIRM. These BFEs are intended for flood insurance rating purposes only and not be used as the sole source of flood elevation information. Accordingly, elevation data presented in the FIS report should be utilized in conjunction with BFEs for purposes of construction and/or floodplain management.

Base Flood Elevations (BFEs) shown on this map apply only to landward of the National Flood Insurance Program. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations in the Summary of Stillwater Elevations table should be used for construction floodplain management purposes when they are higher than the elevations on this FIRM.

Floodway areas shown on this map were computed at cross sections and interpolated at cross sections. The floodway areas are based on hydraulic considerations with requirements of the National Flood Insurance Program. Floodway widths for each floodway area are provided in the Flood Insurance Study report for this jurisdiction.

Floodway areas not in Special Flood Hazard Areas may be protected by flood control measures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

Floodway areas used in the preparation of this map was Universal Transverse Mercator (UTM) zone 12. The horizontal datum was NAD83. GRS1980 spheroid. The vertical datum was the National Geodetic Vertical Datum of 1929 and the North American Datum of 1983. For information regarding conversion of datum, please refer to the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov) or contact the National Geodetic Survey at the following:

Information Services  
NNGS12  
National Geodetic Survey  
12000  
West Highway  
Spring, Maryland 20710-3282  
313-3242

Information Services  
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National Geodetic Survey  
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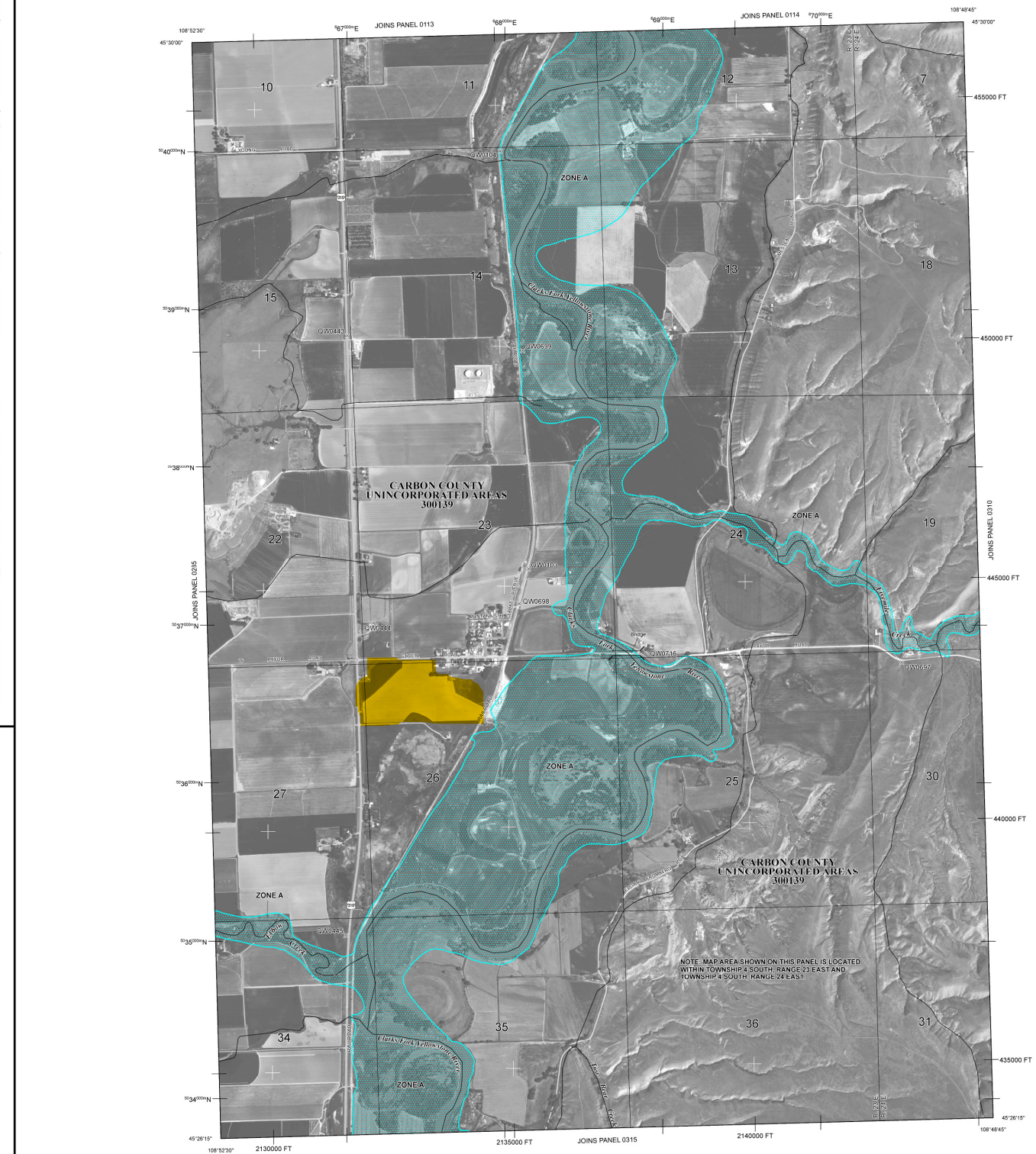
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**LEGEND**

**SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION**

**1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Areas shown on this map are subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, Zone AE, Zone AH, Zone AD, Zone AR, Zone A99, Zone V, and Zone VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

**ZONE A** No Base Flood Elevations determined.

**ZONE AE** Base Flood Elevations determined.

**ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevation determined.

**ZONE AD** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); wave action determined. For areas of alluvial fan flooding, velocities also determined.

**ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates the former flood control system is being retained to provide protection from the 1% annual chance or greater flood.

**ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal protection system under construction; no Base Flood Elevation determined.

**ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevation determined.

**ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevation determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be reserved so that the 1% annual chance flood can be carried without substantial increases in flood heights.

**OTHER FLOOD AREAS**

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with depths of less than 1 foot or with drainage areas less than 1 square mile are protected by levees from 1% annual chance flood.

**OTHER AREAS**

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

**ZONE D** Areas in which flood hazards are undetermined, but possible.

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

**OTHERWISE PROTECTED AREAS (OPAs)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

**1% annual chance floodplain boundary**

**0.2% annual chance floodplain boundary**

**Floodway boundary**

**Zone D boundary**

**CBRS and OPA boundary**

**Boundary dividing Special Flood Hazard Area Zone A from Zone AE**

**Boundary dividing Special Flood Hazard Areas of different flood depths, flood depths, or flood velocities**

**Base Flood Elevation line and value, elevation in feet**

**Base Flood Elevation value where uniform within zone, in feet**

**513 (EL. 513)**

**Referenced to the North American Vertical Datum of 1988**

**A** Cross section line

**Traverse line**

**Geographic coordinates referenced to the North Datum of 1983 (NAD 83), Western Hemisphere**

**100-meter Universal Transverse Mercator grid ticks, 5000-foot grid values; Montana State Plane coordinates (MTSPC) = 2000; Lambert projection**

**Bench mark (see explanation in Notes to Users section of FIS report)**

**BM 1.5**

**MAP REPOSITORIES**

Refer to Map Repositories List on Map Index

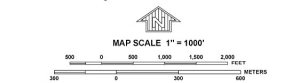
**EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**

December 4, 2012

**EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**

For community map revision history prior to countywide mapping, refer to the Community Map Revision History for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or the National Flood Insurance Program at 1-800-638-6620.



**NFIP**

**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0305D**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**CARBON COUNTY, MONTANA**

**AND INCORPORATED AREAS**

**PANEL 305 OF 1500**

(SEE MAP INDEX FOR FIRM PANEL LIST)

**CONTAINS:**

**COMMUNITY:** CARBON COUNTY

**NUMBER:** 300139

**PANEL:** 0305

**MAP NUMBER:** 30009C

**EFFECTIVE DATE:** DECEMBER 4, 2012

**Federal Emergency Management Agency**



APPENDIX E  
SOIL TEST PIT LOCATION  
AND DESCRIPTION

PROPERTY OWNER	EDGAR SUB. TP#1
PROPERTY ADDRESS	3872 US HIGHWAY 310, FROMBERG, MT 59029

SCS Symbol	Not available on NRCS Web Soil Survey	1/4	1/4	1/4	SECTION	TOWNSHIP	RANGE
SCS Name							

LIMITATIONS			
TYPE	DEPTH	TEXTURE	PERM. IN/HOUR
Top Soil	0-1.0'		
Clayey Sand	1'-8'	Darker, more saturated soils @ approx 6 FT	

Application complete?		On-site visit required	
Depth to seasonally high groundwater:	No GW @ 8 FT	Verified by:	
Groundwater monitoring required?		Vegetative indicators	
Depth to unsuitable treatment material:		How verified:	
Is property in floodplain?		Or within 100' of 100 yr. Floodway	
Slope at treatment area:		7 foot test hole required?	
Is phosphorus breakthrough required?		Is nitrate sensitivity required?	
Is there room for a replacement system?		Are all separation requirements met?	

APPROVED?

BASIS FOR DENIAL:

RE-EVALUATION DATE

APPROVED?

BASIS:

SITE OBSERVATIONS:

DOES THIS SITE MEET THE REQUIREMENTS OF THE ON-SITE WASTEWATER TREATMENT REGULATIONS?

\_\_\_\_\_.

SOIL TYPE:

TEXTURAL CLASSIFICATION:

REVIEWED BY:

DATE: 1/22/2018 Joe Summers

PROPERTY OWNER	Edgar Sub. TP #2
PROPERTY ADDRESS	3872 US Highway 310, Fromberg, MT 59029

SCS Symbol	Not available on NRCS Web Soil Survey	1/4	1/4	1/4	SECTION	TOWNSHIP	RANGE
SCS Name							

LIMITATIONS			
TYPE	DEPTH	TEXTURE	PERM. IN/HOUR
Top Soil	0-1.5'		
Clayey Sand	1.5'-8'	Light color throughout	

Application complete?		On-site visit required	
Depth to seasonally high groundwater:	No GW @ 8'	Verified by:	
Groundwater monitoring required?		Vegetative indicators	
Depth to unsuitable treatment material:		How verified:	
Is property in floodplain?		Or within 100' of 100 yr. Floodway	
Slope at treatment area:		7 foot test hole required?	
Is phosphorus breakthrough required?		Is nitrate sensitivity required?	
Is there room for a replacement system?		Are all separation requirements met?	

APPROVED?

BASIS FOR DENIAL:

RE-EVALUATION DATE

APPROVED?

BASIS:

SITE OBSERVATIONS:

DOES THIS SITE MEET THE REQUIREMENTS OF THE ON-SITE WASTEWATER TREATMENT REGULATIONS?

\_\_\_\_\_

SOIL TYPE:

TEXTURAL CLASSIFICATION:

REVIEWED BY:

DATE: 1/22/2018 Joe Summers

PROPERTY OWNER	Edgar Sub TP#3
PROPERTY ADDRESS	3872 US Highway 310, Fromberg, MT 59029

SCS Symbol	Not available on NRCS Web Soil Survey	1/4	1/4	1/4	SECTION	TOWNSHIP	RANGE
SCS Name							

LIMITATIONS			
TYPE	DEPTH	TEXTURE	PERM. IN/HOUR
Top Soil	0-1.5'		
Clayey Sand	1.5'-8'	Darker / Saturated Sand @ approx 6.5'	FT

Application complete?		On-site visit required	
Depth to seasonally high groundwater:	No GW @ 8'	Verified by:	
Groundwater monitoring required?		Vegetative indicators	
Depth to unsuitable treatment material:		How verified:	
Is property in floodplain?		Or within 100' of 100 yr. Floodway	
Slope at treatment area:		7 foot test hole required?	
Is phosphorus breakthrough required?		Is nitrate sensitivity required?	
Is there room for a replacement system?		Are all separation requirements met?	

APPROVED?

BASIS FOR DENIAL:

RE-EVALUATION DATE

APPROVED?

BASIS:

SITE OBSERVATIONS:

DOES THIS SITE MEET THE REQUIREMENTS OF THE ON-SITE WASTEWATER TREATMENT REGULATIONS?

\_\_\_\_\_.

SOIL TYPE:

TEXTURAL CLASSIFICATION:

REVIEWED BY:

DATE: 1/22/2018 Joe Summers



PROPERTY OWNER	Edgar Sub. TP#4
PROPERTY ADDRESS	3872 US Highway 310, Fromberg, MT 59029

SCS Symbol	Not available on NRCS Web Soil Survey	¼	¼	¼	SECTION	TOWNSHIP	RANGE
SCS Name							

LIMITATIONS			
TYPE	DEPTH	TEXTURE	PERM. IN/HOUR
Top Soil	0-1.5'		
Clayey Sand	1.5'-8'	Saturated Sand @ 6 FT	

Application complete?		On-site visit required	
Depth to seasonally high groundwater:	No GW @ 8 Ft	Verified by:	
Groundwater monitoring required?		Vegetative indicators	
Depth to unsuitable treatment material:		How verified:	
Is property in floodplain?		Or within 100' of 100 yr. Floodway	
Slope at treatment area:		7 foot test hole required?	
Is phosphorus breakthrough required?		Is nitrate sensitivity required?	
Is there room for a replacement system?		Are all separation requirements met?	

APPROVED?

BASIS FOR DENIAL:

RE-EVALUATION DATE

APPROVED?

BASIS:

SITE OBSERVATIONS:

DOES THIS SITE MEET THE REQUIREMENTS OF THE ON-SITE WASTEWATER TREATMENT REGULATIONS?

\_\_\_\_\_.

SOIL TYPE:

TEXTURAL CLASSIFICATION:

REVIEWED BY:

DATE: 1/22/2018 Joe Summers

PROPERTY OWNER	Edgar Sub. TP #5
PROPERTY ADDRESS	3872 US Highway 310, Fromberg, MT 59029

SCS Symbol	Not available on NRCS Web Soil Survey	1/4	1/4	1/4	SECTION	TOWNSHIP	RANGE
SCS Name							

LIMITATIONS			
TYPE	DEPTH	TEXTURE	PERM. IN/HOUR
Top Soil	0-1'		
Clayey Sand	1'-8'	Saturated soil @ 5.5 FT. Trace of gravel @ 8 FT depth.	

Application complete?		On-site visit required	
Depth to seasonally high groundwater:	No GW @ 8'	Verified by:	
Groundwater monitoring required?		Vegetative indicators	
Depth to unsuitable treatment material:		How verified:	
Is property in floodplain?		Or within 100' of 100 yr. Floodway	
Slope at treatment area:		7 foot test hole required?	
Is phosphorus breakthrough required?		Is nitrate sensitivity required?	
Is there room for a replacement system?		Are all separation requirements met?	

APPROVED?

BASIS FOR DENIAL:

RE-EVALUATION DATE

APPROVED?

BASIS:

SITE OBSERVATIONS:

DOES THIS SITE MEET THE REQUIREMENTS OF THE ON-SITE WASTEWATER TREATMENT REGULATIONS?

\_\_\_\_\_.

SOIL TYPE:

TEXTURAL CLASSIFICATION:

REVIEWED BY:

DATE: 1/22/2018 Joe Summers

PROPERTY OWNER	Edgar Sub. TP#6
PROPERTY ADDRESS	3872 US Highway 310, Fromberg, MT 59029

SCS Symbol	Not available on NRCS Web Soil Survey	1/4	1/4	1/4	SECTION	TOWNSHIP	RANGE
SCS Name							

LIMITATIONS			
TYPE	DEPTH	TEXTURE	PERM. IN/HOUR
Top Soil	0-2'		
Clayey Sand	2'-8'	Darker, Saturated @ 6.5 FT	

Application complete?		On-site visit required	
Depth to seasonally high groundwater:	No GW @ 8'	Verified by:	
Groundwater monitoring required?		Vegetative indicators	
Depth to unsuitable treatment material:		How verified:	
Is property in floodplain?		Or within 100' of 100 yr. Floodway	
Slope at treatment area:		7 foot test hole required?	
Is phosphorus breakthrough required?		Is nitrate sensitivity required?	
Is there room for a replacement system?		Are all separation requirements met?	

APPROVED?

BASIS FOR DENIAL:

RE-EVALUATION DATE

APPROVED?

BASIS:

SITE OBSERVATIONS:

DOES THIS SITE MEET THE REQUIREMENTS OF THE ON-SITE WASTEWATER TREATMENT REGULATIONS?

\_\_\_\_\_.

SOIL TYPE:

TEXTURAL CLASSIFICATION:

REVIEWED BY:

DATE: 1/22/2018 Joe Summers



Google Maps Edgar

013





APPENDIX F  
NCRS SOIL REPORT



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Carbon County Area, Montana**



March 26, 2018

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and



## Custom Soil Resource Report

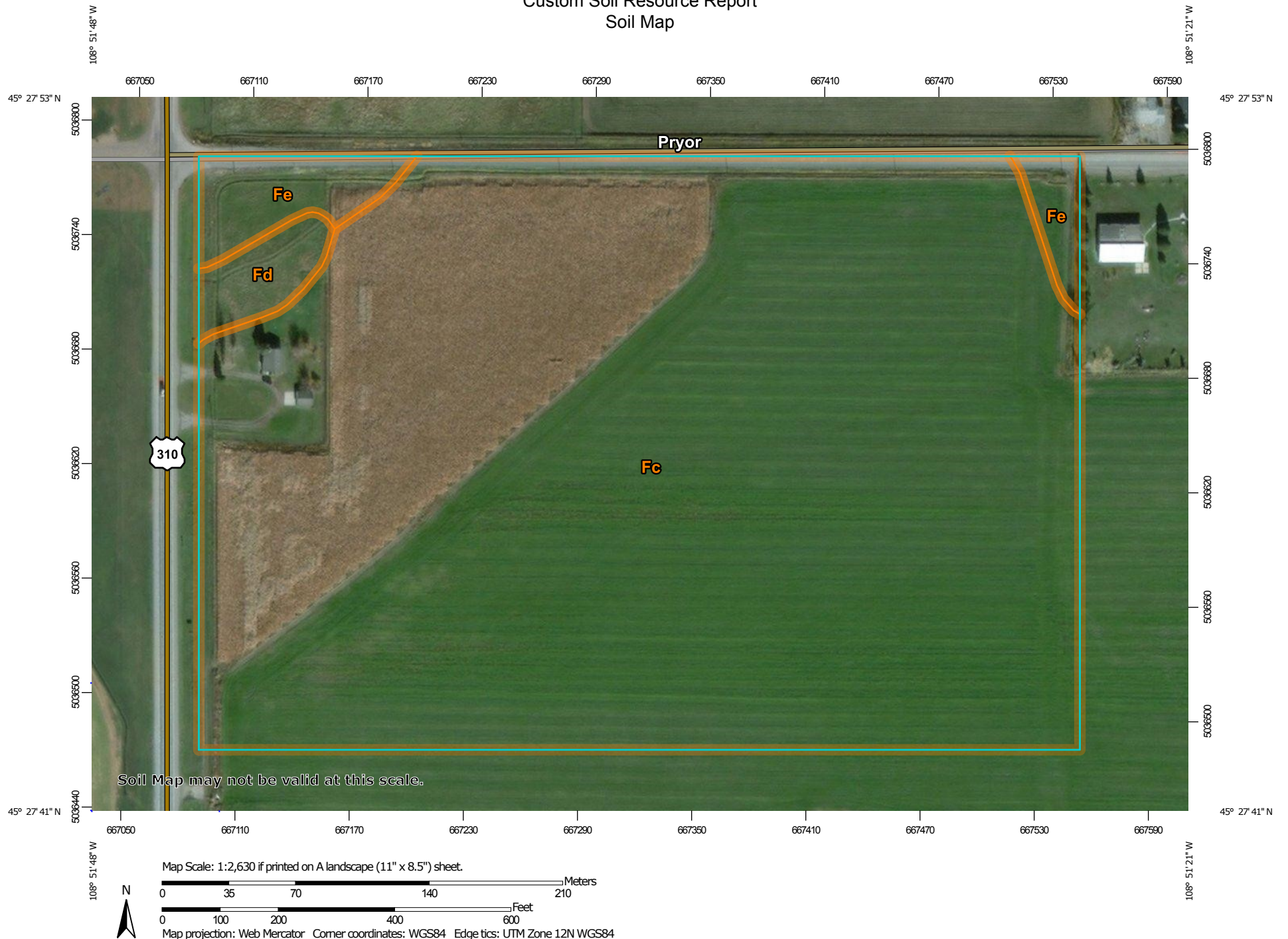
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit

 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals


### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon County Area, Montana  
Survey Area Data: Version 13, Sep 21, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2014—Mar 6, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Fc	Fort Collins loam, 0 to 2 percent slopes	33.7	94.2%
Fd	Fort Collins loam, 2 to 4 percent slopes	0.7	1.8%
Fe	Fort Collins loam, wet, 0 to 2 percent slopes	1.4	3.9%
<b>Totals for Area of Interest</b>		<b>35.7</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Carbon County Area, Montana

### Fc—Fort Collins loam, 0 to 2 percent slopes

#### Map Unit Setting

*National map unit symbol:* cn46

*Elevation:* 2,200 to 6,600 feet

*Mean annual precipitation:* 10 to 14 inches

*Mean annual air temperature:* 36 to 50 degrees F

*Frost-free period:* 110 to 130 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Fort collins and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Fort Collins

##### Setting

*Landform:* Alluvial fans, stream terraces

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium

##### Typical profile

*A - 0 to 4 inches:* loam

*Bt - 4 to 15 inches:* clay loam

*Bk - 15 to 60 inches:* loam

##### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 15 percent

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* High (about 10.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 2e

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

#### Minor Components

##### Vona

*Percent of map unit:* 4 percent

*Landform:* Alluvial fans, stream terraces

*Down-slope shape:* Linear

## Custom Soil Resource Report

*Across-slope shape:* Linear

*Hydric soil rating:* No

### **Heldt**

*Percent of map unit:* 3 percent

*Landform:* Alluvial fans, stream terraces

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Clayey (Cy) RRU 58A-C 11-14" p.z. (R058AC041MT)

*Hydric soil rating:* No

### **Toluca**

*Percent of map unit:* 3 percent

*Landform:* Stream terraces, alluvial fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Clayey (Cy) RRU 58A-C 11-14" p.z. (R058AC041MT)

*Hydric soil rating:* No

## **Fd—Fort Collins loam, 2 to 4 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* cn47

*Elevation:* 2,200 to 6,600 feet

*Mean annual precipitation:* 10 to 14 inches

*Mean annual air temperature:* 36 to 50 degrees F

*Frost-free period:* 110 to 130 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Fort collins and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Fort Collins**

#### **Setting**

*Landform:* Alluvial fans, stream terraces

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium

#### **Typical profile**

*A - 0 to 4 inches:* loam

*Bt - 4 to 15 inches:* clay loam

*Bk - 15 to 60 inches:* loam

#### **Properties and qualities**

*Slope:* 2 to 4 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

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*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 15 percent

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* High (about 10.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* 2e

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

### Minor Components

#### Vona

*Percent of map unit:* 5 percent

*Landform:* Stream terraces, alluvial fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Toluca

*Percent of map unit:* 5 percent

*Landform:* Stream terraces, alluvial fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Clayey (Cy) RRU 58A-C 11-14" p.z. (R058AC041MT)

*Hydric soil rating:* No

#### Heldt

*Percent of map unit:* 5 percent

*Landform:* Alluvial fans, stream terraces

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Clayey (Cy) RRU 58A-C 11-14" p.z. (R058AC041MT)

*Hydric soil rating:* No

## Fe—Fort Collins loam, wet, 0 to 2 percent slopes

### Map Unit Setting

*National map unit symbol:* cn48

*Elevation:* 2,200 to 6,600 feet

*Mean annual precipitation:* 10 to 14 inches

*Mean annual air temperature:* 39 to 50 degrees F

*Frost-free period:* 110 to 130 days

*Farmland classification:* Farmland of local importance

### Map Unit Composition

*Fort collins and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Fort Collins

#### Setting

*Landform:* Alluvial fans, stream terraces

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium

#### Typical profile

*A - 0 to 4 inches:* loam

*Bt - 4 to 24 inches:* clay loam

*Bk - 24 to 60 inches:* loam

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)

*Depth to water table:* About 24 to 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 10 percent

*Salinity, maximum in profile:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

*Available water storage in profile:* High (about 9.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3w

*Hydrologic Soil Group:* B

*Ecological site:* Subirrigated (Sb) (R043BS325MT)

*Hydric soil rating:* No

### Minor Components

#### Vona

*Percent of map unit:* 4 percent

*Landform:* Alluvial fans, stream terraces

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Heldt

*Percent of map unit:* 3 percent

*Landform:* Stream terraces, alluvial fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Clayey (Cy) RRU 58A-C 11-14" p.z. (R058AC041MT)

*Hydric soil rating:* No

#### Toluca

*Percent of map unit:* 3 percent

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*Landform:* Stream terraces, alluvial fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Clayey (Cy) RRU 58A-C 11-14" p.z. (R058AC041MT)

*Hydric soil rating:* No

# **Soil Information for All Uses**

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## **Suitabilities and Limitations for Use**

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

## **Building Site Development**

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

## **Dwellings With Basements**

Dwellings are single-family houses of three stories or less. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet.

The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the



## Custom Soil Resource Report

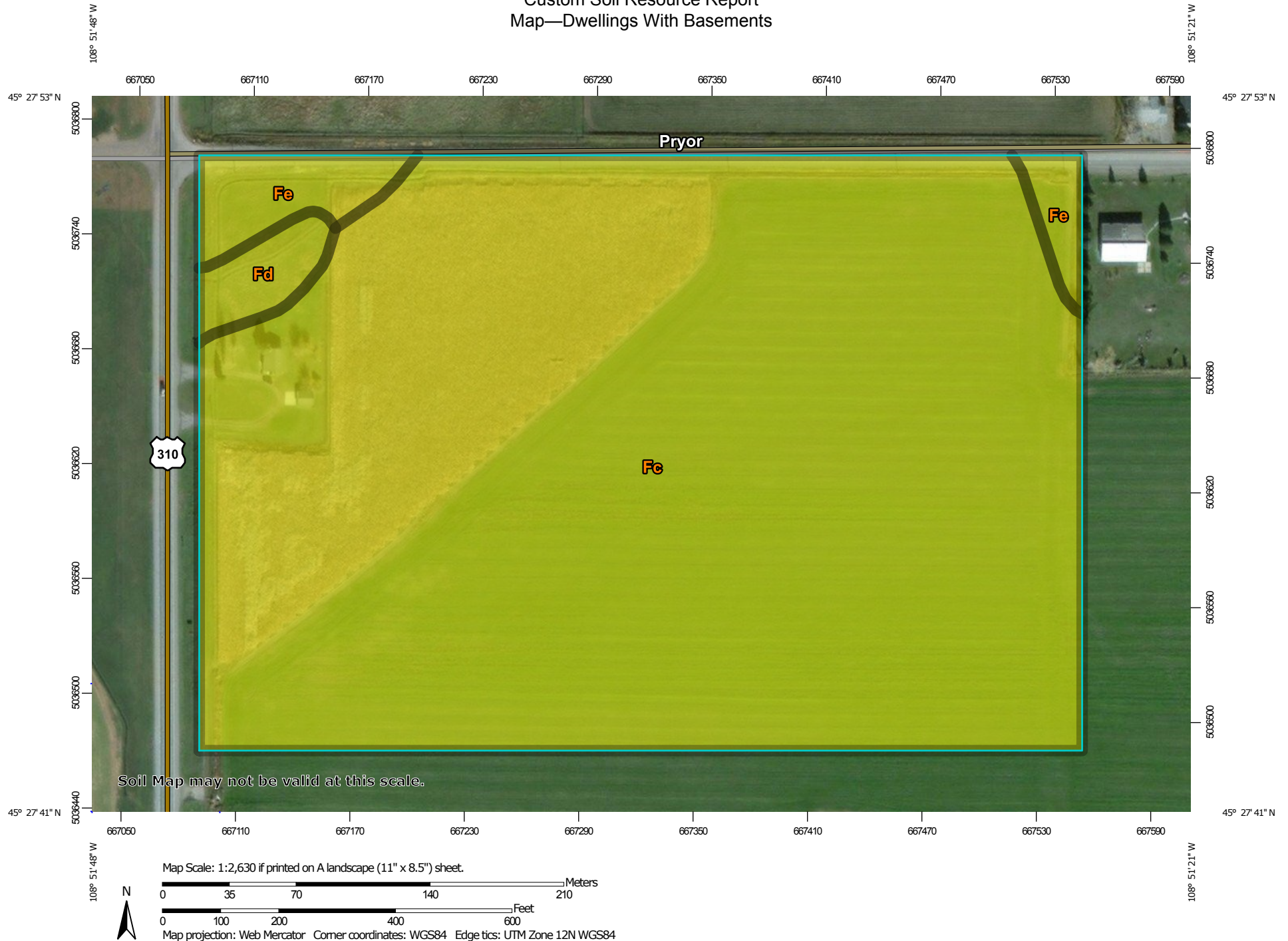
specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.


# Custom Soil Resource Report Map—Dwellings With Basements




## Custom Soil Resource Report

### MAP LEGEND

#### Area of Interest (AOI)





 Area of Interest (AOI)

#### Background





 Aerial Photography

#### Soils





##### Soil Rating Polygons

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available


##### Soil Rating Lines

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available






##### Soil Rating Points

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

#### Water Features

 Streams and Canals

#### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Soil Survey Area: Carbon County Area, Montana  
Survey Area Data: Version 13, Sep 21, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2014—Mar 6, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Tables—Dwellings With Basements

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Fc	Fort Collins loam, 0 to 2 percent slopes	Somewhat limited	Fort Collins (90%)	Shrink-swell (0.50)	33.7	94.2%
Fd	Fort Collins loam, 2 to 4 percent slopes	Somewhat limited	Fort Collins (85%)	Shrink-swell (0.50)	0.7	1.8%
Fe	Fort Collins loam, wet, 0 to 2 percent slopes	Somewhat limited	Fort Collins (90%)	Depth to saturated zone (0.82)	1.4	3.9%
				Shrink-swell (0.50)		
Totals for Area of Interest					35.7	100.0%

Rating	Acres in AOI	Percent of AOI
Somewhat limited	35.7	100.0%
<b>Totals for Area of Interest</b>	<b>35.7</b>	<b>100.0%</b>

## Rating Options—Dwellings With Basements

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

## Local Roads and Streets

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the

specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

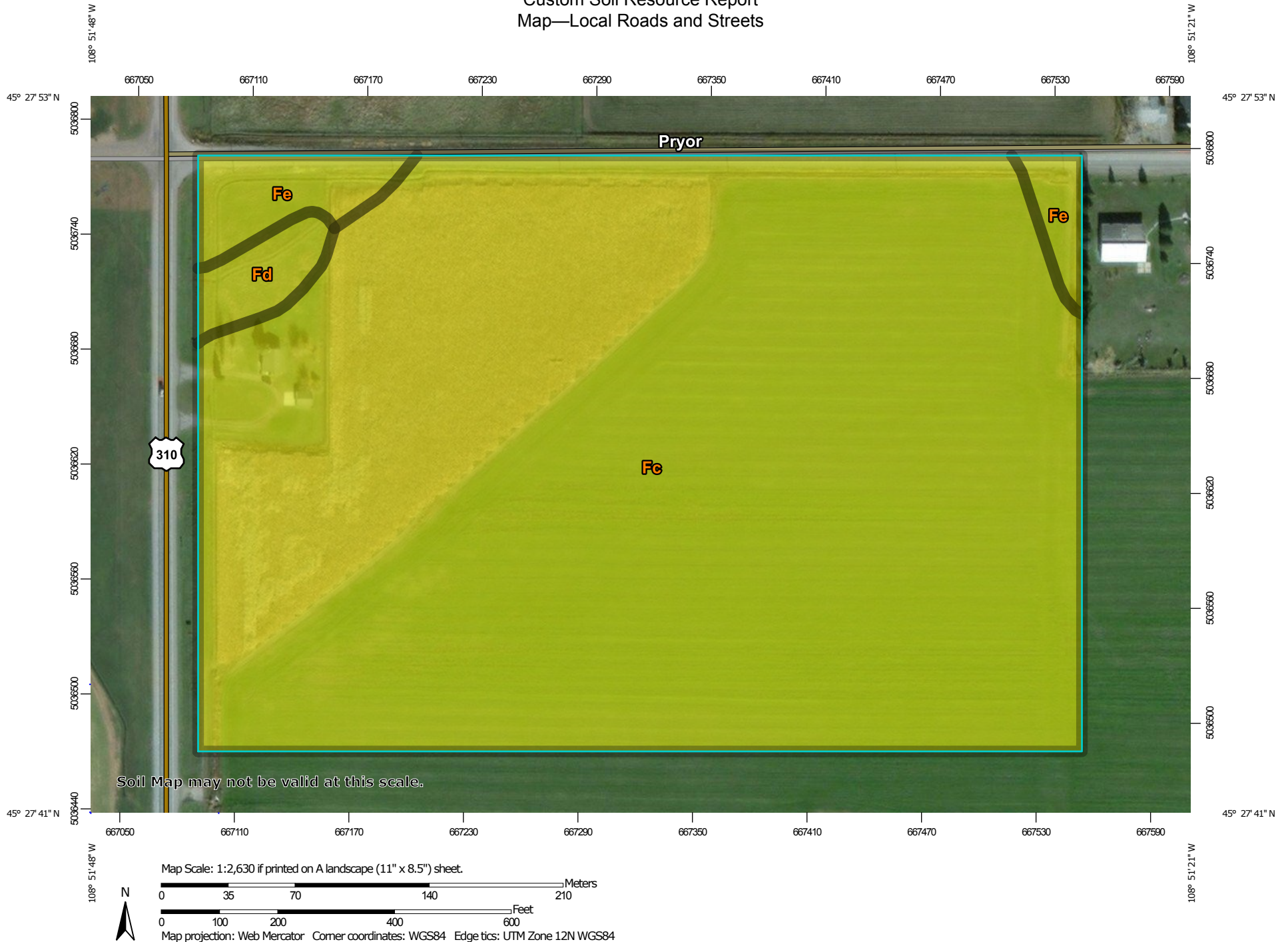
Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.



# Custom Soil Resource Report Map—Local Roads and Streets







## Custom Soil Resource Report

### MAP LEGEND

#### Area of Interest (AOI)





 Area of Interest (AOI)

#### Background





 Aerial Photography

#### Soils





##### Soil Rating Polygons

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available


##### Soil Rating Lines

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available





##### Soil Rating Points

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

#### Water Features

 Streams and Canals

#### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon County Area, Montana  
Survey Area Data: Version 13, Sep 21, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2014—Mar 6, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

### Tables—Local Roads and Streets

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Fc	Fort Collins loam, 0 to 2 percent slopes	Somewhat limited	Fort Collins (90%)	Frost action (0.50)	33.7	94.2%
				Shrink-swell (0.50)		
				Low strength (0.03)		
			Vona (4%)	Frost action (0.50)		
			Toluca (3%)	Frost action (0.50)		
Fd	Fort Collins loam, 2 to 4 percent slopes	Somewhat limited	Fort Collins (85%)	Frost action (0.50)	0.7	1.8%
				Shrink-swell (0.50)		
				Low strength (0.03)		
			Vona (5%)	Frost action (0.50)		
			Toluca (5%)	Frost action (0.50)		
Fe	Fort Collins loam, wet, 0 to 2 percent slopes	Somewhat limited	Fort Collins (90%)	Frost action (0.50)	1.4	3.9%
				Shrink-swell (0.50)		
				Low strength (0.04)		
			Vona (4%)	Frost action (0.50)		
			Toluca (3%)	Frost action (0.50)		
Totals for Area of Interest					35.7	100.0%

Rating	Acres in AOI	Percent of AOI
Somewhat limited	35.7	100.0%
<b>Totals for Area of Interest</b>	<b>35.7</b>	<b>100.0%</b>

### Rating Options—Local Roads and Streets

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

## Shallow Excavations

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

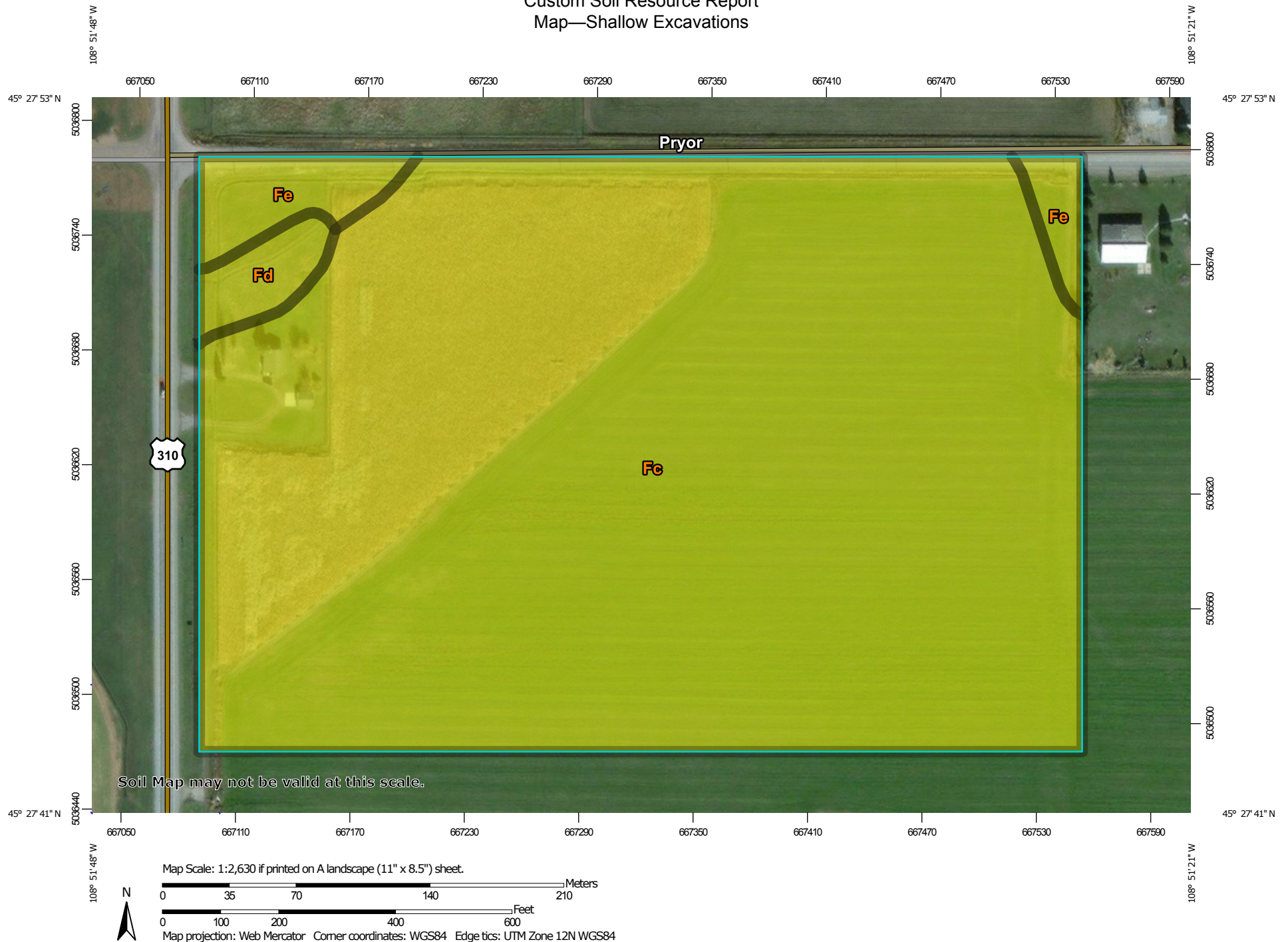
The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.


# Custom Soil Resource Report Map—Shallow Excavations




## Custom Soil Resource Report

### MAP LEGEND

#### Area of Interest (AOI)





 Area of Interest (AOI)

#### Background





 Aerial Photography

#### Soils





##### Soil Rating Polygons

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available


##### Soil Rating Lines

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available






##### Soil Rating Points

-  Very limited
-  Somewhat limited
-  Not limited
-  Not rated or not available

#### Water Features

 Streams and Canals

#### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon County Area, Montana  
Survey Area Data: Version 13, Sep 21, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2014—Mar 6, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Tables—Shallow Excavations

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Fc	Fort Collins loam, 0 to 2 percent slopes	Somewhat limited	Fort Collins (90%)	Dusty (0.14)	33.7	94.2%
				Unstable excavation walls (0.01)		
			Vona (4%)	Dusty (0.03)		
				Unstable excavation walls (0.01)		
			Toluca (3%)	Dusty (0.31)		
				Unstable excavation walls (0.01)		
			Heldt (3%)	Unstable excavation walls (0.51)		
				Dusty (0.33)		
Fd	Fort Collins loam, 2 to 4 percent slopes	Somewhat limited	Fort Collins (85%)	Dusty (0.14)	0.7	1.8%
				Unstable excavation walls (0.01)		
			Vona (5%)	Dusty (0.03)		
				Unstable excavation walls (0.01)		
			Toluca (5%)	Dusty (0.31)		
				Unstable excavation walls (0.01)		
			Heldt (5%)	Unstable excavation walls (0.51)		
				Dusty (0.33)		
Fe	Fort Collins loam, wet, 0 to 2 percent slopes	Somewhat limited	Fort Collins (90%)	Depth to saturated zone (0.82)	1.4	3.9%
				Dusty (0.23)		
				Unstable excavation walls (0.01)		
			Vona (4%)	Dusty (0.03)		
				Unstable excavation walls (0.01)		

## Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Heldt (3%)	Unstable excavation walls (0.51)		
				Dusty (0.33)		
			Toluca (3%)	Dusty (0.31)		
				Unstable excavation walls (0.01)		
Totals for Area of Interest					35.7	100.0%

Rating	Acres in AOI	Percent of AOI
Somewhat limited	35.7	100.0%
<b>Totals for Area of Interest</b>	<b>35.7</b>	<b>100.0%</b>

### Rating Options—Shallow Excavations

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher



## **Soil Properties and Qualities**

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

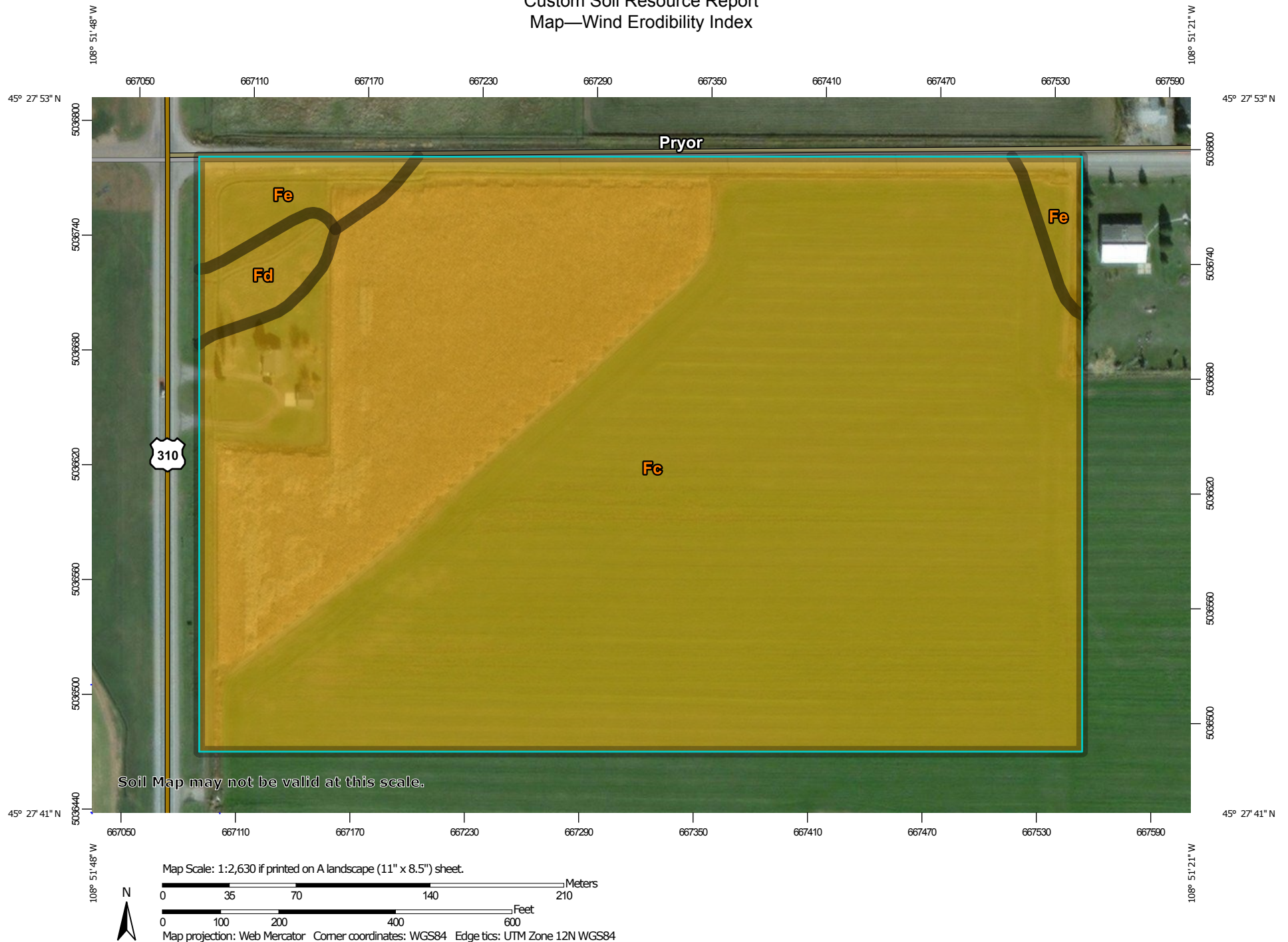
## **Soil Erosion Factors**

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

## **Wind Erodibility Index**


The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

# Custom Soil Resource Report Map—Wind Erodibility Index















## MAP LEGEND

### Area of Interest (AOI)










 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons


	0
	38
	48
	56
	86
	134
	160
	180
	220
	250
	310
	Not rated or not available

#### Soil Rating Lines













	0
	38
	48
	56
	86
	134
	160
	180
	220

 250


 310

 Not rated or not available





#### Soil Rating Points

	0
	38
	48
	56
	86
	134
	160
	180
	220
	250
	310
	Not rated or not available

#### Water Features

 Streams and Canals

#### Transportation

	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads

#### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

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Date(s) aerial images were photographed: Oct 21, 2014—Mar 6, 2017

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**Table—Wind Erodibility Index**

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
Fc	Fort Collins loam, 0 to 2 percent slopes	48	33.7	94.2%
Fd	Fort Collins loam, 2 to 4 percent slopes	48	0.7	1.8%
Fe	Fort Collins loam, wet, 0 to 2 percent slopes	48	1.4	3.9%
<b>Totals for Area of Interest</b>			<b>35.7</b>	<b>100.0%</b>

**Rating Options—Wind Erodibility Index**

*Units of Measure:* tons per acre per year

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

## Ecological Site Assessment

Individual soil map unit components can be correlated to a particular ecological site. The Ecological Site Assessment section includes ecological site descriptions, plant growth curves, state and transition models, and selected National Plants database information.

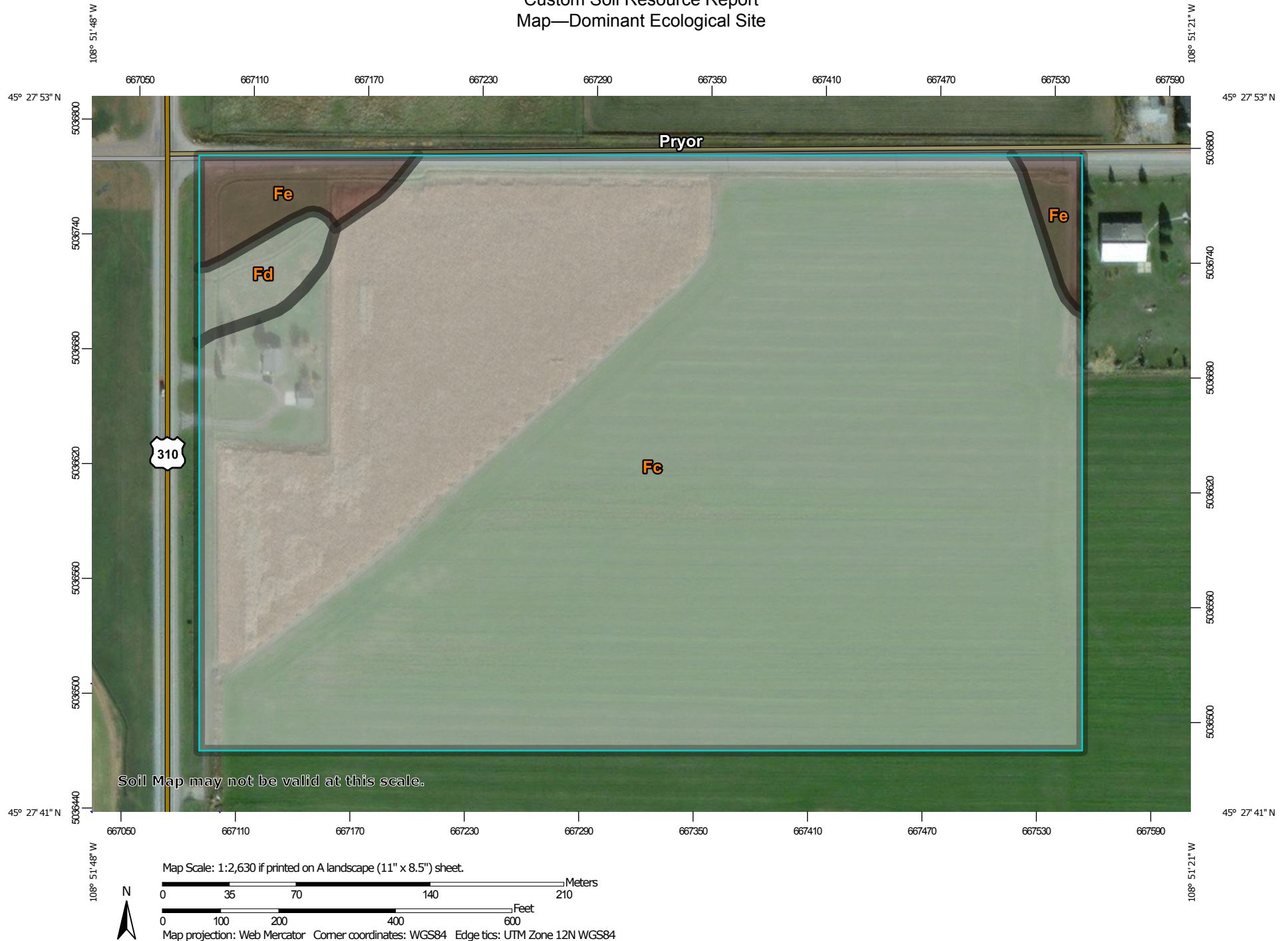
### All Ecological Sites — Rangeland

An "ecological site" is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. For example, the hydrology of the site is influenced by development of the soil and plant community. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production.

An ecological site name provides a general description of a particular ecological site. For example, "Loamy Upland" is the name of a rangeland ecological site. An "ecological site ID" is the symbol assigned to a particular ecological site.

The map identifies the dominant ecological site for each map unit, aggregated by dominant condition. Other ecological sites may occur within each map unit. Each map unit typically consists of one or more components (soils and/or miscellaneous areas). Each soil component is associated with an ecological site. Miscellaneous areas, such as rock outcrop, sand dunes, and badlands, have little or no soil material and support little or no vegetation and therefore are not linked to an ecological site. The table below the map lists all of the ecological sites for each map unit component in your area of interest.


Custom Soil Resource Report  
Map—Dominant Ecological Site







## MAP LEGEND

### Area of Interest (AOI)



 Area of Interest (AOI)

### Soils



#### Soil Rating Polygons

 R043BS325MT  
 Not rated or not available


#### Soil Rating Lines

 R043BS325MT  
 Not rated or not available






#### Soil Rating Points

 R043BS325MT  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

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Date(s) aerial images were photographed: Oct 21, 2014—Mar 6, 2017

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**Table—Ecological Sites by Map Unit Component**

Map unit symbol	Map unit name	Component name (percent)	Ecological site	Acres in AOI	Percent of AOI
Fc	Fort Collins loam, 0 to 2 percent slopes	Fort Collins (90%)		33.7	94.2%
		Vona (4%)			
		Heldt (3%)	R058AC041MT — Clayey (Cy) RRU 58A-C 11-14" p.z.		
		Toluca (3%)	R058AC041MT — Clayey (Cy) RRU 58A-C 11-14" p.z.		
Fd	Fort Collins loam, 2 to 4 percent slopes	Fort Collins (85%)		0.7	1.8%
		Heldt (5%)	R058AC041MT — Clayey (Cy) RRU 58A-C 11-14" p.z.		
		Toluca (5%)	R058AC041MT — Clayey (Cy) RRU 58A-C 11-14" p.z.		
		Vona (5%)			
Fe	Fort Collins loam, wet, 0 to 2 percent slopes	Fort Collins (90%)	R043BS325MT — Subirrigated (Sb)	1.4	3.9%
		Vona (4%)			
		Heldt (3%)	R058AC041MT — Clayey (Cy) RRU 58A-C 11-14" p.z.		
		Toluca (3%)	R058AC041MT — Clayey (Cy) RRU 58A-C 11-14" p.z.		
Totals for Area of Interest				35.7	100.0%

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

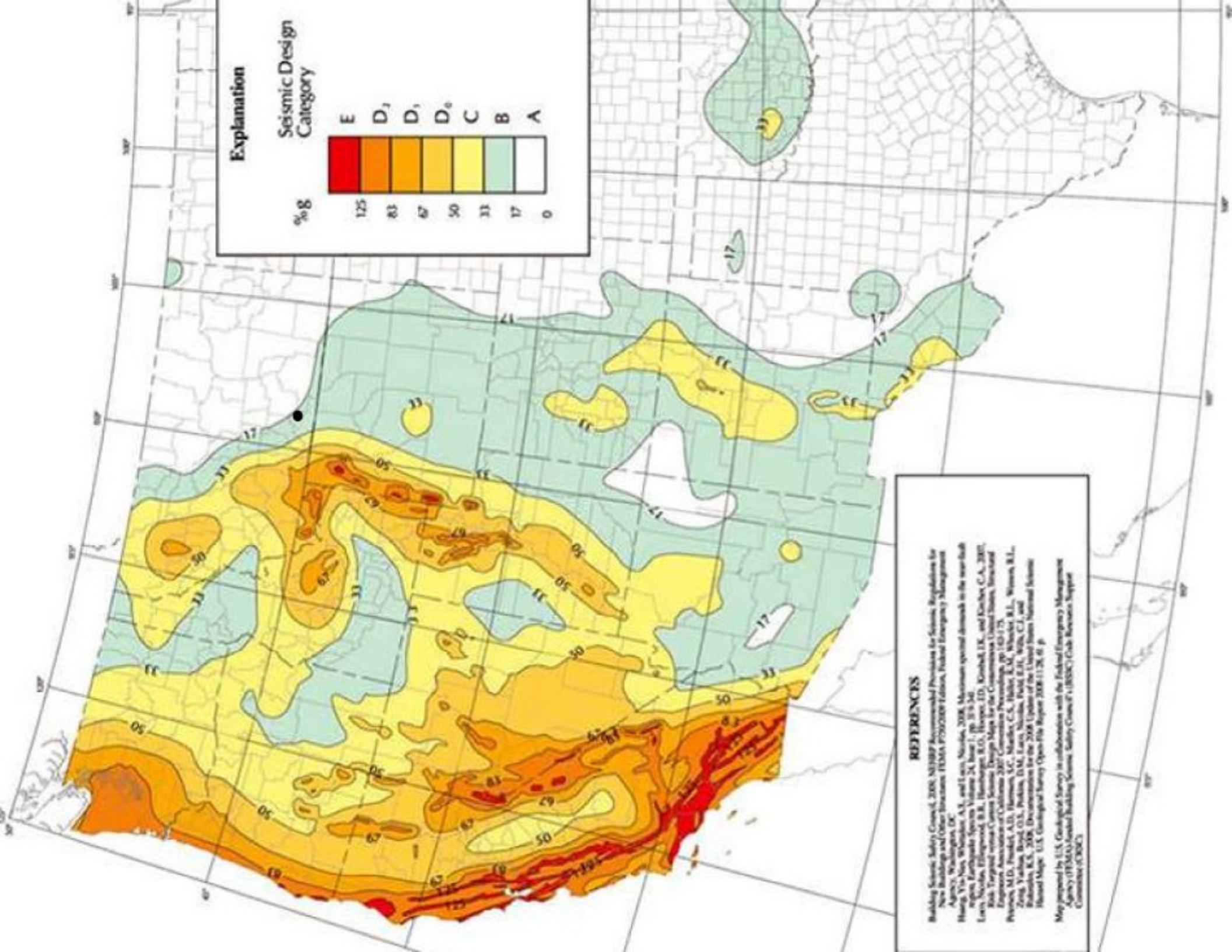
## Custom Soil Resource Report

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APPENDIX G  
FEMA SEISMIC  
HAZARD MAP



# REFERENCES

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Huang, Yixiao, Whittaker, R.L., and L. Lee. 2008. Maximum spectral demands in the near-fault region. *Earthquake Spectra*, Volume 24, Issue 1, pp. 35-50.

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Peacock, M.D., Fowler, A.D., Hammer, S.C., Mueller, C.S., Haller, K.M., Whittaker, R.L., Whittaker, R.L., Zeng, Yixiao, Boyd, O.S., Perkins, D.M., Lynn, Nicolas, Field, E.H., Wills, C.J., and Robinson, K.S., 2008. Documentation for the 2008 Update of the United States National Seismic Hazard Maps. U.S. Geological Survey Open-File Report 2008-11, 28 p.

Map prepared by U.S. Geological Survey in collaboration with the Federal Emergency Management Agency (FEMA)/Federal Building Seismic Safety Council (FBISSSC) Code Review Support Committee (CRSC).

APPENDIX H  
SHPO FILE SEARCH

## Teri Tritz

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**From:** Murdo, Damon <dmurdo@mt.gov>  
**Sent:** Friday, March 23, 2018 9:43 AM  
**To:** Teri Tritz  
**Subject:** RE: File Search Request  
**Attachments:** 2018032302.pdf



March 23, 2018

Teri Tritz  
Performance Engineering  
7100 Commercial Ave. STE #4  
Billings MT 59101

RE: WINDMILL FARMS 19 LOT SUBDIVISION, CARBON COUNTY. SHPO Project #:2018032302

Dear Teri:

I have conducted a cultural resource file search for the above-cited project located in Section 26, T4S R23E. According to our records there have been no previously recorded sites within the designated search locale. The absence of cultural properties in the area does not mean that they do not exist but rather may reflect the absence of any previous cultural resource inventory in the area, as our records indicated none.

It is SHPO's position that any structure over fifty years of age is considered historic and is potentially eligible for listing on the National Register of Historic Places. If any structures are to be altered and are over fifty years old we would recommend that they be recorded and a determination of their eligibility be made.

As long as there will be no disturbance or alteration to structures over fifty years of age we feel that there is a low likelihood cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time. However, should structures need to be altered or if cultural materials be inadvertently discovered during this project we would ask that our office be contacted and the site investigated.

If you have any further questions or comments you may contact me at (406) 444-7767 or by e-mail at [dmurdo@mt.gov](mailto:dmurdo@mt.gov). I have attached an invoice for the file search. Thank you for consulting with us.

Sincerely,

Damon Murdo  
Cultural Records Manager  
State Historic Preservation Office

File: LOCAL/SUBDIVISIONS/2018



APPENDIX I  
FROMBERG SCHOOL  
STATEMENT

## Teri Tritz

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**From:** Teri Harris <tharris@fromberg.k12.mt.us>  
**Sent:** Wednesday, March 14, 2018 2:51 PM  
**To:** Teri Tritz  
**Subject:** Re: Proposed Edgar Subdivision

Teri,

Fromberg School can absolutely accommodate the increased enrollment and would welcome new students.

On Wed, Mar 14, 2018 at 2:41 PM, Teri Tritz <[teri@performance-ec.com](mailto:teri@performance-ec.com)> wrote:

Good afternoon Ms. Harris,

My name is Teri Tritz and I am an engineer with Performance Engineering. I am currently conducting an Environmental Report for a proposed subdivision near Edgar. I contacted the Carbon County Superintendent of School's office and they directed me to the Fromberg School District Superintendent, so I am hoping I found the right person.

A requirement of the Environmental Report is to provide a statement from the administrator of the affected school system indicating whether the increased enrollment can be accommodated by the present personnel and facilities and by the existing school bus system. If not, please provide an estimate of the increased expenditures that would be necessary to do so.

The proposed subdivision will be located south of Elwell St, between HWY 310 and Edgar and will consist of 19 lots. An estimated number of 6 students will potentially be added to the school district by the subdivision.

Please contact me if you would like to discuss further, have any questions, or need additional information.

Thank you,

Teri Tritz, EI

Associate Engineer

[teri@performance-ec.com](mailto:teri@performance-ec.com)

Office: [\(406\) 384-0080](tel:4063840080)



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***Teri Harris, Superintendent***

*Fromberg Public School*

*319 School Street*

*Fromberg, MT 59029*

*(406) 668-7755*

[\*tharris@fromberg.k12.mt.us\*](mailto:tharris@fromberg.k12.mt.us)

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