BAKER CORRIDOR
PLANNING STUDY

DRAFT Environmental Scan Report

Baker Corridor Planning Study

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Prepared by:

Montana Department of Transportation

MONTANA MDT DEPARTMENT OF TRANSPORTATION

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Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACS	American Community Survey
CAPS	Crucial Areas Planning System
CEIC	Census and Economic Information Center
CFR	Code of Federal Regulations
CRABS	Cultural Resource Annotated Bibliography System
CRIS	Cultural Resource Information Systems
DEQ	Montana Department of Environmental Quality
DNRC	Montana Department of Natural Resources and Conservation
DOC	Montana Department of Commerce
DOLI	Montana Department of Labor and Industry
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
FWP	Montana Department of Fish, Wildlife, and Parks
GIS	Geographic Information System
HUC	Hydrologic Unit Code
LUST	Leaking Underground Storage Tank
LWCFA	Land and Water Conservation Fund Act
MBMG	Montana Bureau of Mines and Geology
MBTA	Migratory Bird Treaty Act
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MFISH	Montana Fisheries Information System
MNHP	Montana Natural Heritage Program
MPDES	Montana Pollutant Discharge Elimination System
MSATs	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPL	National Priority List

NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRIS	Natural Resource Information System
NWI	National Wetlands Inventory
PESC	Permanent Erosion and Sediment Control
PM	Particulate Matter
RP	Reference Post
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SOC	Species of Concern
T&E	Threatened and Endangered
TMDL	Total Maximum Daily Load
UM	University of Montana
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USNPS	United States National Park Services
UST	Underground Storage Tank

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1. Introduction

The primary objective of this environmental scan report is to provide a planning-level overview of resources and determine potential constraints and opportunities for the Baker Corridor Planning Study. Information in this report was obtained from publically available reports, websites, and documentation. This scan is not a detailed environmental investigation.

If improvement options are forwarded from this study into project development, an analysis for compliance with the National and Montana Environmental Policy Acts (NEPA and MEPA) will be completed as part of the Montana Department of Transportation (MDT) project development process. Information provided in this report may be forwarded into the NEPA/MEPA process at that time.

1.1 Study Area

The Baker Study Area is located in southeast Montana in Fallon County. Land use within the Study Area varies considerably, and includes developed lands consisting of industrial sites (oil and gas), roads, residential, and other commercial enterprises (40%); Great Plains Mixed Grass Prairie (20%); agricultural (20%); and Big Sagebrush Steppe (15%); all interspersed with Great Plains Riparian (5%).

Baker is located at the intersection of US Highway 12 (US 12) and Montana Highway 7 (MT 7). US 12 is known as the Lewis and Clark Highway, despite not being the route followed by Lewis and Clark across the state of Montana. US 12 was first created in 1926. It enters Montana at Lolo Pass and travels east to Baker, at which point it continues east to southwestern North Dakota. MT 7 is a south to north state highway established in 1930 that extends from Ekalaka to Wibaux. MT 7 passes along the east side of Medicine Rocks State Park approximately 25 miles south of Baker. Most of downtown Baker was built during the early to mid-1900s. The discovery of natural gas in 1915 began the oil and gas exploration boom, which lasted into the 1970s. This boom drove the building of downtown Baker during the early to mid-1900s. Technological advances in recent years have allowed for extraction of oil and natural gas that was once inaccessible, providing renewed population and economic growth in the area known as the Bakken region due to the oil formation that the City of Baker sits in.

The Study Area for this environmental scan report includes an approximate 53 square mile area centered on the City of Baker. The Study Area is rectangular and begins at Reference Marker (RM) 79 of US 12 to RM 88 of US 12, and RM 31.9 to RM 37.6 of MT 7. Multiple maps have been prepared to illustrate resources present in the Study Area. For ease of reference, all exhibits are included in Attachment 1. Exhibit 1 is an illustration of the Study Area location, and Exhibit 2 is a topographic map of the Study Area.

1.2 Goals of Study

The main intersection in Baker is the junction of US 12 / MT 7, and is used by passenger vehicles both traveling through town and for local access, as well as heavy vehicular freight in large numbers traveling to and from the nearby Bakken region. The growth of the oil industry in the region is increasing the volume of traffic in the area. Because of this growth, the City of

Baker has identified a need for a planning study to investigate alternative corridor/alignment options and determine a preferred route for US 12 / MT 7 in the Baker area.

The goal of the study is to identify a preferred alternative route for the area, reduce planning time while managing community and social issues, and minimize construction costs through the demonstration of feasible alternatives. The study will seek to minimize the cost of any selected route while considering environmental and social concerns.

2. Physical Environment

2.1 Soil Resources and Prime Farmland

Soils information was reviewed to determine the presence of prime and unique farmland in the Study Area to demonstrate compliance with the Farmland Protection Policy Act (FPPA). The FPPA is intended "to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland."

The term "farmland" refers to prime farmland; some prime if irrigated farmland; unique farmland; and farmland, other than prime or unique farmland, that is of statewide importance. Prime farmland soils are those that have the best combination of physical and chemical characteristics for producing food, feed, and forage; the area must also be available for these uses. Prime farmland can be either non-irrigated or lands that would be considered prime if irrigated. Farmland of statewide importance is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, forage, and oilseed crops.

Soil surveys of the Study Area are available from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (see Attachment 2). NRCS soil surveys indicate the presence of farmland of state or local importance, or prime farmland if irrigated within the Study Area. Specifically, areas classified as farmland of state or local importance make up the majority of area within two square miles surrounding the City of Baker (refer to Exhibit 3 in Attachment 1).

Any forwarded improvement options that require right-of-way within identified farmlands and are supported with federal funds will require a CPA-106 Farmland Conversion Impact Rating Form for Linear Projects completed by MDT and coordinated with NRCS. The NRCS uses information from the impact rating form to keep inventory of the prime and important farmlands within the state.

2.2 Geologic Resources

Information on the geology and seismicity in the Study Area came from several published sources. Geologic mapping was reviewed for rock types, the presence of unconsolidated material, and fault lines. The seismicity and potential seismic hazards were also reviewed. This geologic information can help determine potential design and construction issues related to

embankments and road design. The following is a brief summary of the geologic and seismic conditions present in the Study Area. Exhibit 4 (in Attachment 1) presents the geologic formations and structures within the Study Area.

The Baker Study Area covers upland plains dissected by and adjacent to Sandstone Creek. The dominant geologic feature of the area is the Cedar Creek Anticline, which traverses the Study Area from North-northeast to South-southwest, passing just east of the City of Baker. The geologic materials within the Study Area are the Pierre Shale, the Timber Lake, Trail City, and Colgate members of the Fox Hills Formation, the Hell Creek Formation, and the Ludlow member of the Fort Union formation.

The Pierre Shale, Hell Creek Formation and Fox Hills Formation are Cretaceous-age bedrock consisting of shale, mudstone, siltstone, and sandstone. The Ludlow Member is Paleocene-age bedrock consisting of mudstone, siltstone, and sandstone. The bedrock is generally soft, weathers to bad-land topography, and swelling clays visible at the surface often show a characteristic “popcorn” texture.

These types of soils can create revegetation challenges. The clay heavy soil reacts in extremes to either the lack of or presence of moisture. The design of future projects forwarded from the study should consider including permanent erosion and sediment control (PESC) measures to extent practicable to help the soils stay in place long enough for the plants and grasses to take hold and revegetate the project. Native plant and grass types that can live in soils with high clay content should be chosen.

Outside of the corridor, several slope failures have been noted near Sandstone Creek, specifically near the town of Plevna. Many small slumps can be observed in cuts and on embankments near Baker, as well as on naturally occurring steep slopes in the area. These slope failures are likely related to over-steepening of the slopes combined with clay soils and groundwater or high volume runoff events.

Improvements brought forward from the study will be subject to more detailed geotechnical analysis. Part of this detailed analysis may involve taking advance borings to evaluate soil characteristics at exact project locations. This is standard procedure for the majority of MDT road projects. The design of any improvements should take into consideration specific requirements that come from the detailed analysis.

2.3 Surface Waters

Topographic maps and geographic information system (GIS) data were reviewed to identify the location of surface water bodies such as rivers, streams, lakes, and reservoirs within the Study Area. Listed below are the named streams within the Study Area.

- Sandstone Creek
- Deep Creek
- Red Butte Creek
- Lake Baker
- Timber Creek

A variety of additional surface waters, including unnamed streams, natural drainages, wetlands, and ponds are present in the Study Area. Impacts to any of these surface waters could occur from improvements such as culverts under the roadway, placement of fill, or rip rap armoring of banks. The United States Army Corps of Engineers (USACE), the Montana Department of Fish, Wildlife and Parks (FWP), and the Montana Department of Environmental Quality (DEQ) all regulate portions of work within surface waters. Coordination with federal, state, and local agencies would be necessary to determine the appropriate permits based on choice of improvement options forwarded from this study. Impacts should be avoided and minimized to the maximum extent practicable. Stream and wetland impacts may trigger compensatory mitigation requirements of the USACE. Construction of forwarded improvement options may trigger the need to obtain coverage under the Montana Pollutant Discharge Elimination System (MPDES) General Permit for Storm Water Discharges Associated with Construction Activity. Exhibit 5 (in Attachment 1) contains maps depicting surface waters found in the Study Area.

Total Maximum Daily Loads

The Study Area is located in the Lower Yellowstone Watershed (hydrologic unit code (HUC) 10100005). A search of the DEQ website revealed the only stream on the 303d list within the Study Area is Sandstone Creek. Information on Sandstone Creek was then obtained from the DEQ website. Section 303 subsection “d” of the Clean Water Act requires the state of Montana to develop a list, subject to United States Environmental Protection Agency (USEPA) approval, of water bodies that do not meet water quality standards. When water quality fails to meet state water quality standards, DEQ determines the causes and sources of pollutants in a sub-basin assessment and sets maximum pollutant levels, called total maximum daily loads (TMDL).

TMDLs set by DEQ become the basis for implementation plans to restore water quality to a level that supports state designated beneficial water uses. The implementation plans identify and describe pollutant controls and management measures to be undertaken (such as best management practices), the mechanisms by which the selected measures would be put into action, and the individuals and entities responsible for implementation projects.

DEQ lists Sandstone Creek as having impairment in the Draft 2014 Integrated 303(d)/305(b) Water Quality Report for Montana (see Table 1 and Attachment 13). This water body is a Category 5, defined as waters where one or more applicable beneficial uses are impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat. Sandstone Creek is the in O’Fallon TMDL area, but at this time, the TMDL is not completed. One probable sources of impairment is agriculture. The other is municipal point source discharges, which could be a result of release of water from wastewater treatment systems. Additionally, the Fallon Growth policy notes watering of the Golf Course uses water from the sewage treatment plant. Highway construction and ongoing transportation corridor use are not likely contributors to Nitrogen loading in Sandstone Creek, so the Nitrogen impairment is unlikely to trigger design modification for future roadway projects. That said, if improvement options are advanced, it will be necessary to reconsider DEQ TMDL standards and potential impacts to water quality within receiving streams and watersheds in the Study Area.

Table 1: 303(d) Listed Streams in Study Area

Named Stream	Quadrant[1]	Category	Possible Impairment	Beneficial Uses
Sandstone Creek	N 1/2	5	Nitrate/Nitrite, Nitrogen(total)	Primary Contact Recreation, Aquatic Life
Deep Creek	SW	Not listed in DEQ's Water Quality Database		
Red Butte Creek	NW, SW, SE	Not listed in DEQ's Water Quality Database		
Timber Creek	SW	Not listed in DEQ's Water Quality Database		

Source: DEQ, 2014
[1]Quadrants of Study Area used as approximation of location because Study Area is rectangular.

Wild and Scenic Rivers

The Wild and Scenic Rivers Act, created by Congress in 1968, provided for the protection of certain rivers, and their immediate environments, that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, or cultural resources, or other similar values. Based on a review of the United States National Park Service (USNPS) website, none of the waterways within the Study Area carry the wild and scenic designation.

Sewage Treatment Ponds

Between RM 81 and RM 82 on the north side of US 12 is the City of Baker's three-pond wastewater treatment system. The Fallon Growth policy noted that the City of Baker is seeking funding to expand this wastewater treatment system by adding an evaporation pond and possible expansion of the other ponds. By the time improvements are brought forward this study, expansion may have taken place. Coordination with the City of Baker should take place to determine if expansion was completed or if it is still anticipated. Impacts to the wastewater treatment system should be avoided, as it will involve extra costs and possible land acquisition to offset associated impacts.

2.4 Groundwater

According to the Montana Bureau of Mines and Geology (MBMG) Groundwater Information Center (GWIC), there are 1,682 wells on record in Fallon County. Some of these wells are located within the Study Area. The newest well on record is from July 16, 2014, and the oldest well on record is from October 1900. Approximately one-third (492) of wells within Fallon County are at a depth of 0 to 99 feet. There are three statewide monitoring network wells in Fallon County. The wells in Fallon County have widely varying uses, with stockwater wells being the most common followed by domestic wells.

The City of Baker has five public water supply wells ranging in depth 613 to 680 feet and three potable water underground storage tanks ranging in size from 100,000 gallons to 200,000 gallons. Four of the wells are located on the northwest edge of Baker; the fifth well is on the southwest edge of town where the three underground storage tanks are similarly located. Public water supply wells have setbacks to ensure the wells are not contaminated. The typical setback is a 100-foot isolation zone in which no source of pollutant should be inside. The public water

supply wells and underground potable water storage tanks are items of avoidance. Wells are drilled on a per foot price, the public water supply wells will be expensive as they are deep. Exhibit 6 (in Attachment 1) and Attachment 3 present groundwater data, such as well and geologic source information for Fallon County.

Impacts to the municipal drinking water system should be avoided, as it will involve extra costs and possible land acquisition to offset associated impacts. Impacts to existing domestic wells will also need to be considered if improvement options are forwarded from the study.

2.5 Wetlands

The USACE defines wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping data is available for this area from the NWI website or the Montana Natural Resource Information System (NRIS) (see Exhibit 5 in Attachment 1). The potential wetland areas identified within the Study Area are primarily along Sandstone Creek and in the areas surrounding Lake Baker. An MDT wetland mitigation site was created in 2010 to mitigate for unavoidable wetland impacts resulting from two MDT projects; Baker – South, and Junction S-322 – South. This site is located along MT 7 south of Baker at Township 7 North, Range 59 East, Section 26 (Latitude 46.3291, Longitude -140.2854). The MDT wetland mitigation site is currently not an USACE-approved mitigation bank. While some useful information can be ascertained from the NWI maps, these maps are based on the USFWS definition of wetlands, which does not follow the USACE definition that MDT uses in wetland determination and delineation. NWI maps are typically generated based on aerial and satellite imagery, and are not accurate enough or detailed enough for MDT project wetland determination and/or delineation.

Future wetland delineations would be required if improvement options are forwarded from the study that could potentially impact wetlands. Future projects in the Study Area would need to incorporate project design features to avoid and minimize adverse impacts to wetlands to the maximum extent practicable. Unavoidable impacts to wetlands must be compensated through mitigation in accordance with the USACE regulatory requirements and/or requirements of Executive Order 11990. Work within jurisdictional wetlands would require a Clean Water Act 404 permit from the USACE. If required, mitigation for improvement options forwarded from the study would not be able to use mitigation credits from the MDT wetland mitigation site until approved by the USACE and would rather need to address mitigation separately for each project constructed.

2.6 Floodplains and Floodways

Executive Order 11988, Floodplain Management, requires federal agencies to avoid to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development

wherever there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities" for the following actions:

- acquiring, managing, and disposing of federal lands and facilities;
- providing federally-undertaken, financed, or assisted construction and improvements; and
- conducting federal activities and programs affecting land use, including but not limited to, water and related land resources planning, regulation, and licensing activities.

Federal-aid Policy Guide, 23 CFR 650, Bridges, Structures, and Hydraulics, provides “policies and procedures for the location and hydraulic design of highway encroachments on flood plains, including direct Federal highway projects administered by the [Federal Highway Administration (FHWA)].” This document defines “base flood” as the “flood or tide having a 1-percent chance of being exceeded in any given year” and “base flood plain” as the “area subject to flooding by the base flood.”

In 1985, the U.S. Department of Agriculture Soil Conservation Service prepared the *Sandstone Creek and Tributaries Flood Plain Management Study*. This report is a detailed study with defined flood elevations of Sandstone Creek through the City of Baker and created the regulated floodplain boundaries currently used by the Fallon County Floodplain Administrator.

Federal Emergency Management Agency (FEMA)-issued flood maps for Fallon County indicate that four floodplain zones exist within the Study Area, they are as follows (see Exhibit 7 in Attachment 1 and Attachment 14):

Zone AE: Special Flood Hazard Area (SFHA) - 100-Year Flood, Base Flood Elevations Determined;

Zone AE: SFHA – 100-Year Flood, Base Flood Elevations Determined, Floodway Areas;

Zone X: 500-Year Flood;

Zone X: Areas determined to be outside 500-Year flood plain.

Portions of a new bypass to the north of Baker or other improvements within the same area could traverse the Zone AE floodplain for Sandstone Creek. Roadway development would involve placement of fill within the regulatory floodplain and would require a floodplain permit. Project development would then require coordination with Fallon County to minimize floodplain impacts and obtain necessary floodplain permits for project construction. Modifications to the floodplain would involve additional project time and cost to the extent that map revisions are required.

2.7 Irrigation

Irrigated agriculture land exists in Fallon County within the Study Area. Depending on the improvement option(s) proposed during the study, there is potential to impact irrigation facilities. Impacts to irrigation facilities should be avoided when feasible. Future modifications to existing irrigation canals, ditches, or pressurized systems could require redesigning and constructing in consultation with the owners to minimize impacts to agricultural operations. If there is impact to irrigation structures, there could be additional costs above typical project costs associated with the redesign, or moving of the irrigation structure(s). The Water Resources Survey map indicates the presence of one historical private irrigation system and ditch in the Study Area.

The private irrigation system and the Munsell ditch shown on the Water Resources Survey map may be historic (see Attachment 4). At this time not enough information is known about either the private irrigation system or the Munsell ditch, and a field investigation would be necessary to determine National Register of Historic Places eligibility. If eligible for the National Register, then efforts must be made to avoid or minimize impacts to private irrigation system and the Munsell ditch.

2.8 Air Quality

The USEPA has established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, including carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide, and lead. The USEPA designates communities that do not meet NAAQS as “non-attainment areas.” States are then required to develop a plan to control source emissions and ensure future attainment of NAAQS. The Study Area is not located in a non-attainment area for any of the criteria pollutants. Additionally, there are no non-attainment areas nearby. As a result, special design considerations will not be required in future project design to accommodate NAAQS non-attainment issues.

Depending on the scope of improvements considered in the Study Area, an evaluation of mobile source air toxics (MSATs) may be required. MSATs are compounds emitted from highway vehicles and off-road equipment, which are known or suspected to cause cancer or other serious health and environmental effects.

2.9 Hazardous Substances

The NRIS database provides information on underground storage tank (UST) sites, leaking underground storage tank (LUST) sites, abandoned mine sites, remediation response sites, landfills, National Priority List (NPL) sites, hazardous waste, crude oil pipelines, and toxic release inventory sites. The following is a brief summary of the primary sites within the Study Area that could impact improvements and may require additional investigation or remediation if within a forwarded project boundaries.

Underground Storage Tanks

Twenty-six individual USTs are shown to exist within the Study Area. These USTs are registered to various businesses and entities in Baker including the Burlington Northern Santa Fe Railroad, Fueling Facilities, and the Baker Municipal Airport. The majority of the active USTs are located within the city limits of Baker and are unlikely to impact project development of a

bypass route around the City of Baker. There are two closed USTs outside of the city limits of Baker. Additional investigation regarding the precise locations of the USTs may need to take place depending on what improvement options are forwarded from this study (see Exhibit 8 in Attachment 1).

Leaking Underground Storage Tanks

Six active and ten inactive LUST sites were identified within the Study Area, most of the sites are within the limits of the town of Baker. One inactive LUST site is noted to exist outside of the City of Baker. This location is immediately southwest of RM 37 on MT 7, north of Baker (see Exhibit 8 in Attachment 1). If a project were to occur in close proximity to this site, or the City of Baker itself, then further review or potential soil investigation may be necessary. Many of these LUST sites are Petroleum Tank Release Cleanup Fund (PetroFund) sites. Exhibit 9 in Attachment 1 shows the PetroFund sites. If LUSTs or contaminated soils are encountered further investigation and possible remediation may be necessary. This could create additional costs associated with a forwarded improvement.

Mine Sites

The NRIS database identifies one abandoned mine site southwest of the intersection of US 12 and MT 7. There is the potential for other abandoned mine sites that are not currently listed in the NRIS database to exist to the southwest of Baker. If improvements are forwarded from the study, an on the ground field survey will be required to determine if the listed mine still exists and if other abandoned mines are present in the area of possible projects. If an abandoned mine site is located, additional investigation of the soils in this area may be necessary to determine if contamination exists.

The DEQ database identifies one opencut mining site to the southwest outside of the City of Baker. Fallon County Road Department is the permit holder of this opencut mining site.

If there are proposed improvements in the areas near a mine (see Exhibit 9 in Attachment 1), there is the potential for impacts to project design and construction, and additional investigation may be necessary.

Crude Oil Pipeline

The NRIS database identified one crude oil pipeline in the northwest corner of the Study Area (see Exhibit 9 in Attachment 1). The NRIS database does not currently have detailed information on the pipeline. With the high amount of oil and gas wells throughout the Study Area, most likely other sections of pipeline exist that connect the oil and gas wells to storage tanks and other facilities that are not currently listed in the NRIS database. If improvements are proposed in this area, additional research and coordination will need to occur to identify any potential conflicts with the pipeline. On the ground site visits and coordination with oil and gas well owners may be necessary to identify other possible hazardous liquid pipelines that could exist in the Study Area.

Oil and Gas Production Wells

Oil and gas development exists in the entire eastern half of the Study Area. Three oil and gas formations (Cedar Creek, Pennel, and Lookout Butte) are oriented slightly northwest-southeast

and encompass the entire eastern Study Area. These formations contain hundreds of oil and gas wells and associated oil and gas infrastructure (see Exhibit 10 in Attachment 1). If future improvements occur in the eastern half of the Study Area, consideration should be given to avoid oil and gas infrastructure where practicable. If projects brought forward from the study occur in close proximity to the oil and gas wells this would likely warrant additional soil investigations and coordination with oil and gas well owners to determine if contaminated soils are present.

Hazardous Waste Handlers

The DEQ data mapper depicts three hazardous waste handling facilities within the Study Area. They are as follows:

- one facility located in the town of Baker is listed as inactive and a conditionally exempt small quantity generator;
- one facility located north of Baker on Shell Oil Road is listed as active and a conditionally exempt small quantity generator;
- one facility located north of Baker on MT 7, immediately south of RM 37 (Nalco Company Baker Warehouse) is listed as active and a large quantity generator.

It is unlikely that these facilities will impact projects forwarded from the study, however if activities are to occur in close proximity to the Nalco Company Baker Warehouse (see Exhibit 9 in Attachment 1), then a soil investigation to determine if contaminated soils are present could be necessary. A soil investigation would have additional costs above normal project expenditures. If contaminated soils are present, a special provision regarding handling contaminated soils is recommended to be included in project documentation.

3. Biological Resources

3.1 Vegetation

A combination of Great Plains Mixedgrass Prairie, Cultivated Crops, Big Sagebrush Steppe habitat dominate the land cover near the Study Area (see in Exhibit 11 in Attachment 1 and Attachment 5). The majority of land coverage within the Study Area is Great Plains habitat, with a few other land cover types interspersed. Table 2 (following page) presents land cover listed by Montana National Heritage Program (MNHP) for Fallon County. Attachment 5 contains the land cover report for the entire of Fallon County, which may contain some variations from the Study Area due to the size of Fallon County.

Table 2: Fallon County Land Cover

Land Cover Type	% of Cover
Great Plains Mixedgrass Prairie	46
Big Sagebrush Steppe	16
Cultivated Crops	16
Great Plains Sand Prairie	7
Pasture/Hay	5
Great Plains Badlands	4
Great Plains Riparian	4

Source: MNHP, 2014

If improvement options are forwarded from the study, practices outlined in MDT standard specifications should be followed to minimize adverse impacts to vegetation and facilitate establishment of final stabilization of disturbed areas. Removal of mature trees and shrubs should be limited to the extent practicable.

Noxious Weeds

Noxious weeds can degrade native vegetative communities, damage riparian areas, compete with native plants, create fire hazards, degrade agricultural and recreational lands, and pose threats to the viability of livestock, humans, and wildlife. Areas with a history of disturbance, like highway rights-of-way, are at particular risk of weed encroachment. The Invaders Database System lists 49 exotic plant species and 17 noxious weed species in Fallon County, some of which may be present in the Study Area (Attachment 6). Fallon County has created a weed control plan that lists 26 noxious weed species as present in Fallon County, which is included in Attachment 6.

Reseeding of disturbed areas with desirable native plant species will help to reduce the spread and establishment of noxious weeds and to re-establish permanent vegetation. If improvements are forwarded from the study, field surveys for noxious weeds should take place prior to any ground disturbance. In addition coordination with Fallon County Weed Board should occur.

3.2 General Wildlife Species

Mammals

The Study Area is home to a variety of mammal species including white-tail deer, mule deer, pronghorn antelope, and coyote. Other common mammals potentially occurring in the Study Area include mountain lion, raccoon, striped skunk, badger, bobcat, red fox, beaver, muskrat, long-tailed weasel, white-tailed jackrabbit, western harvest mouse, deer mouse, and prairie vole. The Study Area shape creates a unique scenario where many of the mammal distributions cover the area completely, with only a few species distributions being visible on the map. Exhibit 12 (Attachment 1) shows the visible distributions: white-tail deer, wild turkey, and ring-necked Pheasant. If improvement options are forwarded from the study, the need for and viability of wildlife crossing mitigation measures should be explored during the project development process.

Amphibians and Reptiles
The MNHP Natural Heritage Tracker database records and maps documented observations of species in a known location. A review of the MHNP Tracker database for amphibian species known to occur within the Study Area included, but are not limited to, the boreal chorus frog, northern leopard frog, barred tiger salamander, greater short-horned lizard, snapping turtle, painted turtle, gophersnake, prairie rattlesnake, terrestrial gartersnake, and western hog-nosed snake. Any improvements forwarded from the study should take into consideration and minimize impacts to amphibian and reptile habitat where practicable.

Birds
The MNHP Natural Heritage Tracker database indicates there are more than one hundred forty species of birds documented with the potential to occur and nest in the Study Area. These species include representative songbirds, birds of prey, waterfowl, owls, and shorebirds. Exhibit 12 and Exhibit 13 (Attachment 1) show the bird distributions that are visible in the Study Area.

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA). Under this strict liability law, it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Direct disturbance of a nest occupied with birds or eggs is prohibited under the law. The destruction of unoccupied nests of eagles; colonial nesters such as cormorants, herons, and pelicans; and some ground/cavity nesters such as burrowing owls or bank or cliff swallows may also be prohibited under the MBTA.

Data searches revealed that currently there are no known bald eagle or golden eagle nests within the Study Area. The Great Plains riparian habitat is a known ecological system associated with the golden eagle. Bald and golden eagles are protected under the MBTA and managed under the Bald and Golden Eagle Protection Act, which prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle or golden eagle, alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

Any improvements forwarded from this study should consider potential constraints that may result from nesting/breeding periods of migratory birds and presence of unknown or future bald and golden eagles nests. One of the constraints on projects is for any work that involves the disturbance or removal of trees or structures associated with nesting birds will need to schedule this work to take place outside of the typical nesting season of April 15 to August 15.

Fisheries
There are only two aquatic resources listed as possessing warm water fishery resources in the Study Area (see Exhibit 5 in Attachment 1). Table 3 (following page) depicts fisheries information for named streams within the Study Area (see Attachment 7).

Table 3: Fisheries Data

Named Stream within Study Area	Quadrant[1]	Fish Species Present
Sandstone Creek	N ½	Black Bullhead, Fathead Minnow, Yellow Perch, Common Carp, White Sucker, River Carpsucker, Green Sunfish, Sand Shiner, Emerald Shiner, Brassy Minnow, Western Silvery/Plains Minnow, Channel Catfish, Creek Chub, Flathead Chub, Goldeye, Lake Chub, Longnose Dace, Northern Pike, Shorthead Redhorse, Stonecat, Brassy Minnow, Brook Stickleback
Baker Lake	Center	Black Bullhead, Black Crappie, Fathead Minnow, Largemouth Bass, Northern Pike, Yellow Perch

Source: FWP Montana Fisheries Information System (MFISH), 2014.
[1]Quadrants of Study Area used as approximation of location because Study Area is rectangular.

Fish passage and/or barrier opportunities should be considered at affected drainages if improvements are forwarded from this study. Per FWP recommendation, culverts should be sized to span the bankfull channel width on fish-bearing streams. Culverts should also be embedded a minimum of 20% of the culvert rise. Studies have shown that culverts embedded at least 20% reduce the potential for the culvert to become a barrier to fish movements. Permitting from regulatory agencies for any future Study Area improvements may also require incorporation of additional design measures to facilitate aquatic species passage.

Crucial Areas Planning System

The FWP Crucial Areas Planning System (CAPS) is a resource intended to provide non-regulatory information during early planning stages of projects, conservation opportunities, and environmental review. The finest data resolution within CAPS is at the square-mile section scale or water body. Use of these data layers at a more localized scale is not appropriate and may lead to inaccurate interpretations since the classification may or may not apply to the entire square-mile section. The CAPS system was consulted to provide a general overview of the Study Area. CAPS results are presented in Attachment 8.

The online CAPS mapping tool provides FWP general recommendations and recommendations specific to transportation projects for both terrestrial and aquatic species and habitat. These recommendations can be applied generically to possible future improvements carried forward from the study.

3.3 Threatened and Endangered Species

The USFWS maintains the federal list of threatened and endangered (T&E) species. Species on this list receive protection under the Endangered Species Act (ESA). An “endangered” species is in danger of extinction throughout all or a significant portion of its range. A “threatened” species is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list. According to the USFWS, five threatened, endangered, proposed, or candidate species are listed as occurring in Fallon County (see Table 4 on the following page and Attachment 9).

Table 4: Threatened and Endangered Species in Fallon County

Species	Status
Greater Sage-Grouse	Candidate
Sprague's Pipit	Candidate
Red Knot	Threatened
Whooping Crane	Endangered
Northern Long-eared Bat	Proposed

Source: USFWS, 2015.

According to the MNHP - Natural Heritage Map Viewer (report generated August 20, 2014) database, which records and maps documented observations of species in a known location, only the greater sage-grouse, and the Sprague's pipit have been recorded within the boundaries of the Study Area. Therefore, it is reasonable to presume that suitable habitats for these species may be present within the Study Area (see Exhibit 13 in Attachment 1). If improvements are forwarded from the study, an evaluation of potential effects to T&E species will need to be completed during the project development process. As federal status of protected species changes over time, reevaluation of the listed status and afforded protection to each species should be completed prior to issuing a determination of effect relative to potential impacts.

3.4 Species of Concern

Montana species of concern (SOC) are native plants or native animals breeding in the state that are considered to be "at risk" due to declining population trends, threats to their habitats, and/or restricted distribution. Designation of a species as a Montana SOC is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to direct limited resources to priority data collection needs and address conservation needs proactively. Each species is assigned a state rank that ranges from S1 (greatest concern) to S5 (least concern). Other state ranks include SU (unrankable due to insufficient information), SH (historically occurred), and SX (believed to be extinct). Modifiers, such as B (breeding) or N (non-breeding), may follow state ranks.

A search of the MNHP species of special concern database on August 19, 2014, revealed four SOC and four potential SOC in Fallon County. These eight species have the potential to occur in the Study Area based on presence of suitable habitat. For more information and a map depicting distribution, please see Table 5 on the following page, Attachment 10, and Exhibit 13 in Attachment 1.

Table 5: Species of Concern Overlapping the Study Area

Animal Subgroup	Common Name	State[1] Rank	Habitat Description
Birds	Greater Sage-grouse	S2	Sagebrush
	Baird's Sparrow	S3B	Grasslands
	Brewer's sparrow	S3B	Sagebrush
	Chestnut-collard Longspur	S2B	Grasslands
Fish	Brook Stickleback	S4	Small prairie rivers
	Brassy Minnow	S4	Small prairie rivers
	Plains Minnow	S4	Small prairie rivers
	Creek Chub	S4	Small prairie rivers

Source: MNHP, 2014.
[1] State rank definitions are located in Appendix C.

In addition to being a state species of concern, the greater sage-grouse is currently listed as a candidate species for listing on the list of threatened and endangered species by the USFWS. The USFWS has a website dedicated solely to the greater sage-grouse. The status of this species will be amended once USFWS biologists have made a final determination.

Montana's governor Steve Bullock established by Executive Order the Greater Sage-Grouse Habitat Conservation Advisory Council on February 2, 2013. The purpose of the Council was to "to gather information, furnish advice, and provide to the governor recommendations on policies and actions for a state-wide strategy to preclude the need to list the greater sage-grouse under the ESA", by no later than January 31, 2014. The Council was co-chaired by FWP Director, Jeff Hagener, and the governor's Natural Resources Policy Advisor, Tim Baker. Council members included representatives from agriculture and ranching, conservation and sportsmen, energy, mining and power transmission, tribal government, local government, and the legislature. The council has concluded its work and provided recommendations to the governor's office in the form of a "Montana Strategy to address threats to the sage-grouse in Montana" (Attachment 11). This plan should be taken into consideration if habitat for the greater sage-grouse could be impacted.

Other sensitive species, including golden eagles, are not listed here, but have the potential to occur within the Study Area. Available literature identifies no nests currently existing within the Study Area. A thorough field investigation for the presence and extent of these species should be conducted if improvement options are forwarded from this study. If present, special conditions to the project design or during construction should be considered to avoid or minimize impacts to these species.

4. Social and Cultural Resources

4.1 Population Demographics and Economic Conditions

Under NEPA/MEPA and associated implementing regulations, state and federal agencies are required to assess potential social and economic impacts resulting from proposed actions. FHWA guidelines recommend consideration of impacts to neighborhoods and community cohesion, social groups including minority populations, and local and/or regional economies, as well as growth and development that may be induced by transportation improvements. Demographic and economic information presented in this section is intended to assist in identifying human populations that might be affected by improvements within the Study Area.

Title VI of the United States Civil Rights Act of 1964, as amended (USC 2000(d)) and EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, require that no minority, or, by extension, low-income person shall be disproportionately adversely impacted by any project receiving federal funds. For transportation projects, this means that no particular minority or low-income person may be disproportionately isolated, displaced, or otherwise subjected to adverse effects. If a project is forwarded from the improvement option(s), environmental justice will need to be further evaluated during the project development process.

As of the 2010 Census, Fallon County ranks 41 out 56 for total county population in Montana. A large share of the population in Fallon County (60 percent) resides within the City of Baker. Fallon counties population ethnicity in 2010 is primarily white/Caucasian (97.4 percent). No reservations exist within the county most likely attributing to the American Indian population at less than one percent. Hispanic or Latino individuals comprise just over one percent of the population. There is a slight decrease in the white population expected as Baker grows due to the vast array of people migrating to the Bakken region taking jobs in the oil and gas field. Table 6 (following page) summarizes 2010 population and demographic data for Fallon County and includes Montana for comparison.

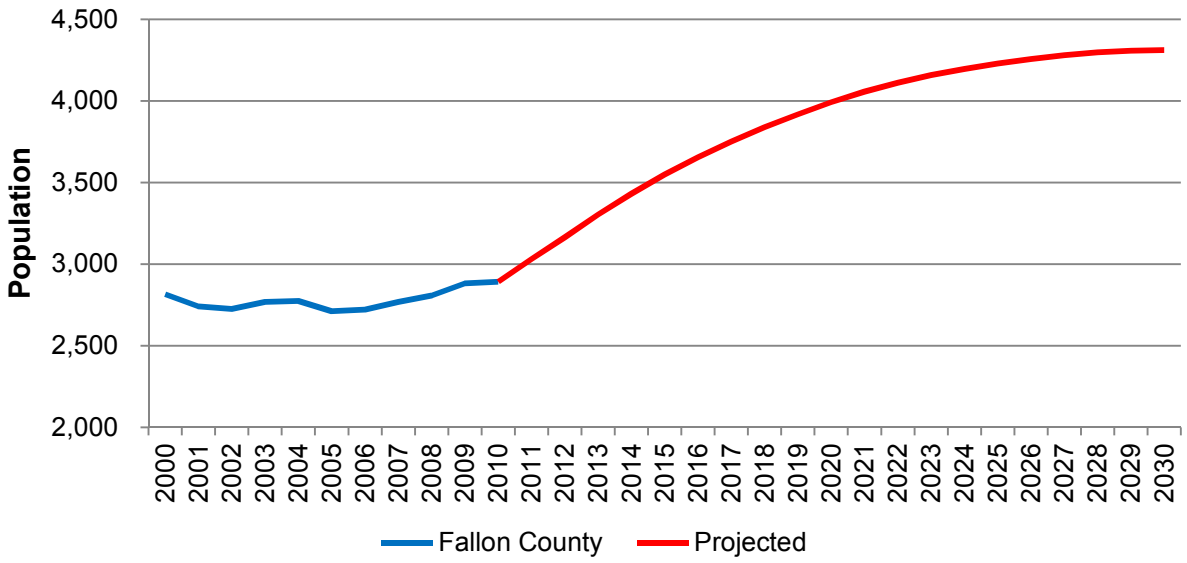
Table 6: 2010 Census Data for Fallon County

	Location	Fallon County	Montana
Population	County	2,890	989,415
	Baker City	1,741	
Ethnic Characteristics	White	97.4%	89.4%
	Black or African American	0.1%	0.4%
	American Indian & Alaska Native	0.4%	6.3%
	Asian	0.6%	0.6%
	Hispanic or Latino	1.2%	2.9%

Source: U.S. Census Bureau, 2010.

According to the 2000 United States Census Bureau (USCB), the population of Fallon County was 2,837. By the 2010 Census, the population of Fallon County was 2,890. This indicates that

Fallon County's population has increased by approximately 3 percent over the last decade. The City of Baker follows the same 3 percent increase from 1,695 in 2000 to 1,741 in 2010, indicating the majority of growth in Fallon County is occurring in the City of Baker. However, regionally, the population for Fallon County shows an increase by a mean of 1.3 percent each year from 2000 to 2013. From 2010 to 2030, the region's population is projected to increase by approximately 1,500 people. This is an increase of approximately 153 percent of the region's 2000 population. On the other hand, Montana will see population growth after 2010, but it will be at a more moderate rate than the Study Area. Figure 1 shows the population of Fallon County from 2000 to 2010 (in blue) and the projections to year 2030 (in red) based on data services through the Montana Department of Commerce (DOC).

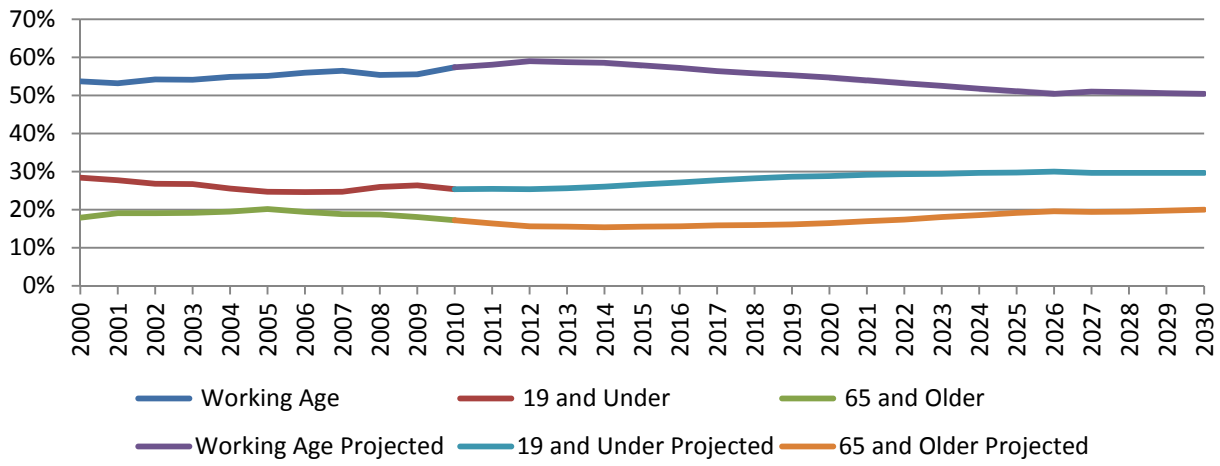


Source: US Census Bureau, 2010.

Figure 1: Total Observed and Projected Population in the Study County

In Fallon County, the working aged population (ages 20 to 64) is expected to increase by about 500 total members, reaching a high of about 60 percent of the population in 2013 and slowly declining to 50 percent by 2030. The decrease in the proportion of working aged members is because of a slower growth rate than the rest of the population.

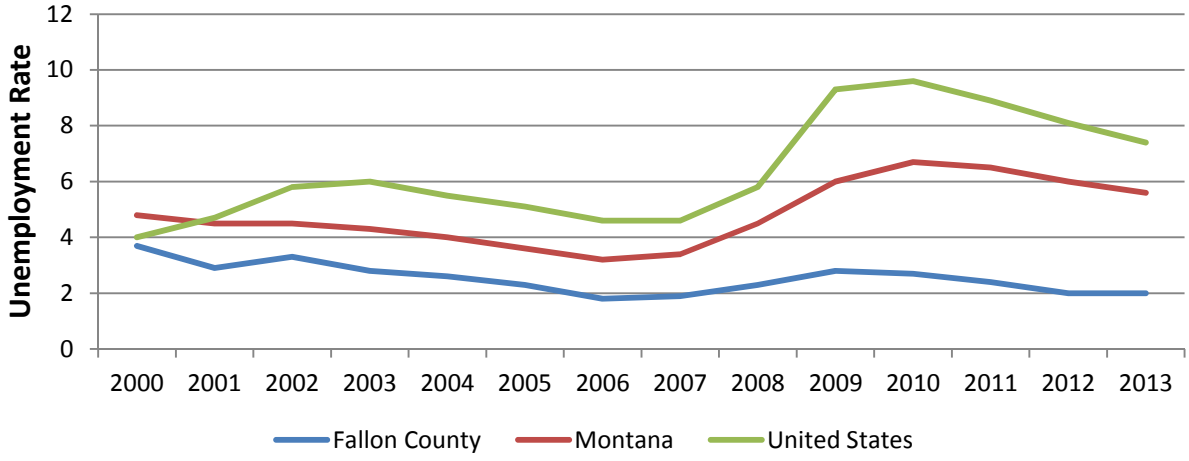
The 19 and under age group is expected to increase at a moderate rate from current levels and eventually hit about 30 percent of the population by 2030. On a similar note, the population category of 65 and older is also expected to experience a slight increase in proportion of the population, eventually converging at about 20 percent. Figure 2 illustrates the projected age distribution.



Source: US Census Bureau, 2010.

Figure 2: **Age Distribution of the Study Counties (Projected after 2013)**

Figure 3 illustrates the unemployment rate comparison from 2000 to 2013. Unemployment in the Fallon County region has experienced about the same fluctuations as the statewide rate for the last decade, but has continuously been below the state and national rate. As the recession began in 2007, the region continued to maintain low unemployment levels and did not face the rapid increases seen at the state and national levels. The sustained levels of low unemployment can likely be attributed to the economic boom from oil and gas in the Bakken region.



Source: US Census Bureau, ACS Survey, 2000-2013.

Figure 3: Unemployment Rate Comparison

The Fallon County Growth Policy used the US Census data and produced the following summary of employment by industry for the City of Baker. The study indicated that City of Baker has approximately 1,618 employed individuals in the labor force. For the City of Baker, the top fields of employment are agriculture, forestry, fishing and hunting, mining; followed by education

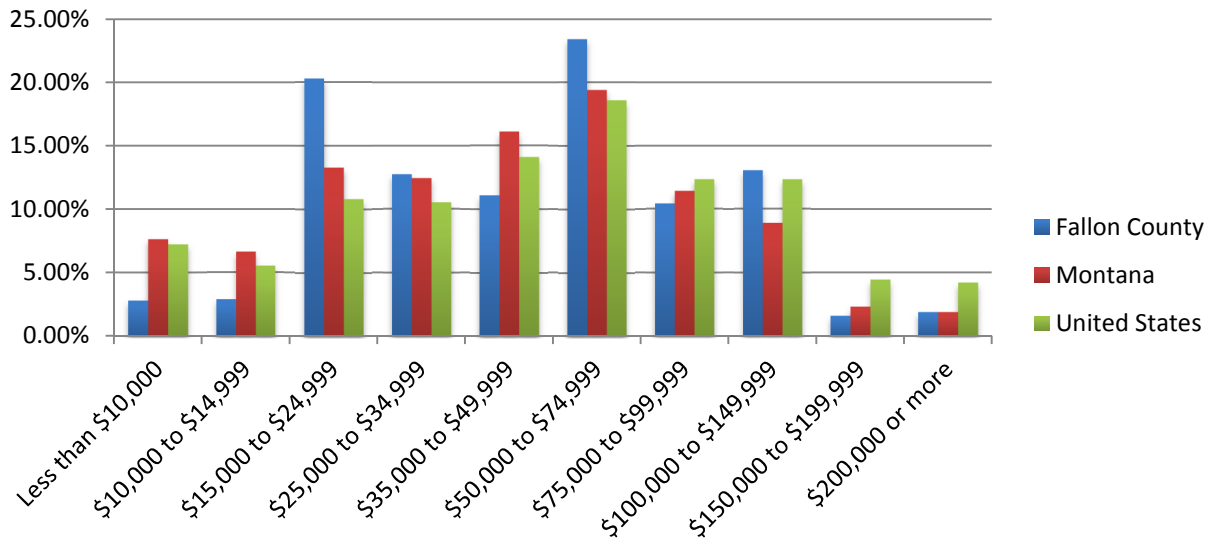
and health care services. Table 7 displays employment within the City of Baker by industry, according to the Fallon Growth Policy and US Census Bureau.

Table 7: County Employment by Industry (2006-2010)

Industry	Total Estimate Baker
Agriculture, forestry, fishing, and hunting	398 (24.6%)
Construction	142 (8.8 %)
Manufacturing	45 (2.8%)
Wholesale trade	20 (1.2%)
Retail trade	131 (8.1%)
Transportation and warehousing, and utilities	161 (10.0%)
Information	42 (2.6%)
Finance and insurance, and real estate and rental and leasing	85 (5.3%)
Professional, scientific, and management , and administrative and waste management services	57 (3.5%)
Educational Services, health care and social assistance	284 (17.6%)
Arts, entertainment, recreation, and accommodation and food services	125 (7.7%)
Other services, except public administration	56 (3.5%)
Public Administration	72 (4.4%)
Civilian employed population (16 years and over)	1,618

Source: US Census Bureau 2010.

Figure 4 (following page) shows the percentage of the population in Fallon County, Montana, and the United States in 10 income categories from the 2010 Census. Fallon County generally has a smaller percentage of the population in the lower and higher income categories compared to the state of Montana and the United States, with the majority of the population falling in the middle of the distribution. In particular, an almost combined 50 percent of the population falls into the $15,000 to $24,999 and $50,000 to $74,999 income categories. For both of those categories, Fallon County has a considerably higher percentage than either the state or the nation.



Source: U.S. Census Bureau, 2010.

Figure 4: Income Distribution by Household 2010

In summary, it appears that the population of Fallon County and the City of Baker is growing in a similar manner to the industry of the region. This growth will continue to add heavy hauling trucks and other vehicles to the current road system in the Study Area. The increased vehicular traffic load and population growth is consistent with the potential need identified by the City of Baker to review the possibility of a bypass road around the City. With high percentage of households in the $15,000 to $24,000 income bracket, further investigation should take place to determine the possibility of low-income person(s) being disproportionately isolated, displaced, or otherwise subjected to adverse effects by any forwarded improvements.

4.2 Land Ownership

Ownership of land in the Study Area is predominantly private, with some interspersed state and federal owners. The specific public landowners are the City of Baker, Fallon County, Montana Department of Transportation, Montana State Trust lands, US Bureau of Land Management, and US Government. The majority of these publicly owned lands are to the south of US 12, with a collection directly in the City of Baker. Much of the private land throughout the Study Area are undeveloped grassland, and agricultural. Land ownership maps for the Study Area are provided in Exhibit 14 (in Attachment 1).

Mixed land use arises from the varied land ownership throughout the Study Area. These land uses include commercial, industrial, crop/pasture, mixed urban, and recreational (see Exhibit 11 in Attachment 1). The large amount of privately owned land in the Study Area may create the need to purchase right-of-way for construction of a bypass route around the City of Baker. This will add land acquisition costs that will depend on the per acre price at the time of purchase. If improvements are forwarded from this study, land use at and adjacent to possible projects will need to be considered during design for determining overall project costs.

4.3 Recreational Resources

The Baker area offers a variety of year round activities including fishing, boating, and swimming at Baker Lake in the summer. In the winter, snowmobiling, ice-skating, and cross-country skiing take over Baker Lake and the surrounding area. There are a collection of city parks within the confines of the City of Baker, Fallon County Rifle Range & Trapshoot facility to the southwest of town and a public golf course.

Recreational resource information was gathered through review of both USFS and FWP resource lists for Fallon County, and the Fallon County Growth Policy. Table 8 lists publically owned recreational resources identified in the Study Area. These recreational areas may be protected under Section 4(f) of the U.S. Department of Transportation Act of 1966, which was enacted to protect publically owned parks, recreation areas, wildlife and waterfowl refuges, and public and private historic sites of local, state, and national significance. Federally funded transportation projects cannot impact Section 4(f)-protected properties unless there are no feasible and prudent avoidance alternatives and all possible planning to minimize harm has occurred. Prior to approving a project that "uses" a Section 4(f) resource, FHWA must find that there is no prudent or feasible alternative that completely avoids the 4(f) resource. "Use" can occur when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of the land that is adverse to a Section 4(f) resource. Constructive "use" can also occur when a project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are "substantially impacted." Potential effects on recreational use would need to be considered in accordance with Section 4(f) if improvements are forwarded from this study. Recreational resources potentially protected under Section 4(f) are mapped in relation to the Study Area in Exhibit 14 (in Attachment 1).

Table 8: Recreational Resources

Resource
Mangold Sports Complex
Triangle Park
Iron Horse Park
Senior Citizens Centennial Park
Eastside Park
Fallon County Fairgrounds
County Golf Course
Steve McClain Memorial Park
Baker Lake Recreation Area

Source: Fallon Growth Policy, 2012.

From a high level evaluation, some of the resources listed in Table 8 may not be considered a Section 4(f) resource, yet it is apparent from the Fallon Growth Policy and the high amount of recreational programs that the City of Baker places a high value its recreational resources. Efforts should be made with projects advanced from the study to avoid adverse impacts to or right-of-way acquisitions from the community recreational resources.

The National Land and Water Conservation Fund Act (LWCFA), or Section 6(f), was enacted to preserve, develop, and assure the quality and quantity of outdoor recreation resources. Section 6(f) protection applies to all projects that impact recreational lands purchased or improved with LWCFA funds. The Secretary of the Interior must approve any conversion of LWCFA property to a use other than public, outdoor recreation. According to FWP LWCFA Sites by County, there are three distinct Section 6(f) resources located within the Study Area: Baker Lake Recreation Area, Baker Pool Improvement, and the Fallon County Rifle Range & Trapshoot facility (see exhibit 14 in Attachment 1). The Baker Lake Recreation Area includes the Baker Pool improvement and two other LWCFA improvements within the boundaries of Baker Lake Recreation Area. All the 6(f) and the possible 4(f) resources except the Fallon County Rife Range & Trapshoot facility are inside the city limits of Baker, most likely not making them a concern to forwarded improvements. These resources can be a difficult and time-consuming task to convert to a non-recreational purpose property and should be avoided if practicable.

4.4 Cultural Resources

For federally funded transportation projects, a cultural resource survey must be conducted for the area of potential effect as specified in Section 106 of the National Historic Preservation Act (NHPA) (36 CFR 800). Section 106 requires federal agencies to "take into account the effects of their undertakings on historic properties." The purpose of the Section 106 process is to identify historic and archaeological properties that could be affected by the undertaking; assess the effects of the project; and investigate methods to avoid, minimize, or mitigate adverse effects on historic properties. These historic resources properties are also generally afforded protection under Section 4(f) of the Transportation Act.

A file search through the Montana State Historic Preservation Office (SHPO) revealed approximately 25 historic or archaeological properties located within the Study Area (Attachment 12). Historic buildings, bridges, a railroad line, pre-contact buried campsites, and lithic scatters are all located in the area. These sites represent approximately 5% of the archaeological sites and historic properties that can be expected within the Study Area boundaries. With the Baker area having minimal ground surveys to date, the current data of known archaeological and historical resources within the Study Area is likely incomplete. On the-ground archaeological field inventory will be necessary to understand and increase the awareness of what cultural resources are located within the Study Area or a project specific location. Direct and indirect impacts (such as visual, noise, and access impacts) to eligible or listed properties would need to be considered if improvements options are carried forward.

A brief discussion of a possible historic private irrigation system and ditch are presented in section 2.7 Irrigation.

4.5 Noise

Evaluation of traffic noise may need to occur for any future improvements in the Study Area. Noise analysis is necessary for "Type I"-classified projects. A Type I project includes a substantial shift in the horizontal or vertical alignments, increasing the number of through lanes, providing passing lanes, or increasing traffic speed and volume. The construction of a bypass

route around the City of Baker contains most of the aspects in the definition and would be considered a Type I project.

Type I projects require a detailed noise analysis, consistent with FHWA requirements and MDT policy, which includes measuring ambient noise levels at selected receivers and modeling design year noise levels using projected traffic volumes. If noise levels approach or substantially exceed noise abatement criteria for the project, noise abatement measures may be necessary. A number of possible abatement measures available for consideration include but are not limited to the following:

- alternating the horizontal or vertical alignment;
- constructing noise barriers such as sound walls or earthen berms; and/or
- decreasing traffic speed limits.

Noise abatement measures must be considered reasonable and feasible prior to implementation.

Construction activities in the Study Area may cause localized, short-duration noise impacts. These impacts can be minimized by using standard MDT specifications for the control of noise sources during construction.

4.6 Visual Resources

The visual resources of an area include landforms, vegetation, water features, and physical modifications caused by human activities that give the landscape its visual character and aesthetic qualities. Visual resources are typically assessed based on the landscape character (what is seen), visual sensitivity (human preferences and values regarding what is seen), scenic integrity (degree of intactness and wholeness in landscape character), and landscape visibility (relative distance of seen areas) of a geographically defined view shed.

Baker is on the eastern edge of Montana, the surrounding area is fields and rolling hills with sandstone out croppings. There are minimal view-obstructing man made items other than the City of Baker itself. To the north and east of Baker oil rigs dot the horizon. As a whole package, the landscape in the Study Area presents itself as a natural prairie/sagebrush environment with scattered agricultural fields and minimal urbanization.

Evaluation of the potential effects on visual resources would need to be conducted if improvement options are forwarded from this study.

5. Conclusion

This environmental scan report identifies physical, biological, social, and cultural resources within the Study Area that may be affected by potential future improvements in the Baker Study Area.

Project-level environmental analysis would be required for any improvements forwarded from this study. Information contained in this report may be used to support future NEPA/MEPA environmental documentation.

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