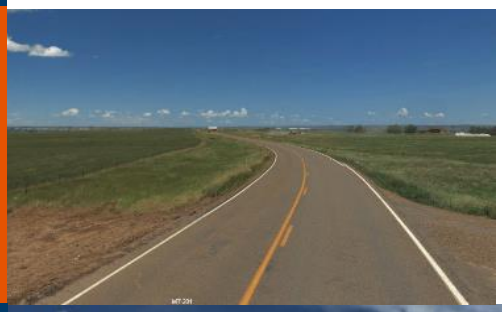
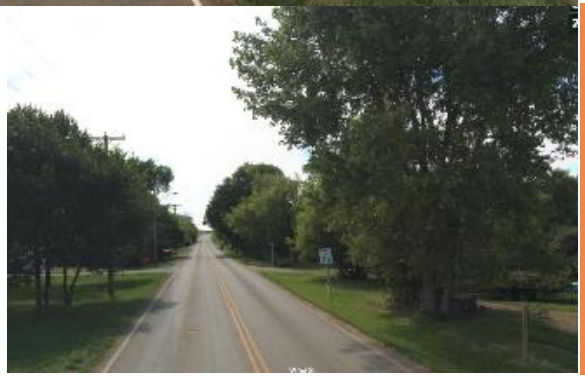
EXISTING AND PROJECTED CONDITIONS

Fairview – West (Phase I)

FINAL





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June 14, 2016

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ABBREVIATIONS / ACRONYMS

AAA	Airport Affected Area
AADT	Average Annual Daily Traffic
AAGR	Average Annual Growth Rate
ACI	Alligator Crack Index
ATR	Automatic Traffic Recording
AWSC	All Way Stop Control
BNSF	BNSF Railway
CAPS	Crucial Areas Planning System
CEIC	Census & Economic Information Center
CFR	Code of Federal Regulations
CHAT	Crucial Habitat Assessment Tool
CMP	Corrugated Metal Pipe
CN	Control Number
CR	County Road
DOI	U.S. Department of the Interior
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
GIS	Geographic Information System
GWIC	Groundwater Information Center
HUC	Hydrologic Unit Code
IPAC	Information, Planning and Conservation System
IRI	International Roughness Index
LOS	Level of Service
LOSS	Level of Service of Safety
LUST	Leaking Underground Storage Tank
LWCF	Land and Water Conservation Funds
MBTA	Migratory Bird Treaty Act
MCI	Miscellaneous Cracking Index
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation

MDU	Montana Dakota Utilities
MEPA	Montana Environmental Policy Act
MNHP	Montana Natural Heritage Program
MSAT	Mobile Source Air Toxics
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NBI	National Bridge Inventory
NDDOT	North Dakota Department of Transportation
NEPA	National Environmental Policy Act
NHS	National Highway System
NPL	National Priority List
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRIS	Natural Resource Information System
NWI	National Wetlands Inventory
PDO	Property Damage Only
PTW	Presently Traveled Way
PvMS	Pavement Management System
RCTS	Richland County Transportation Services
REMI	Regional Economic Models Inc.
RI	Roughness Index
RP	Reference Post
SOC	Species of Concern
STPP	Surface Transportation Program - Primary
UGPTI	Upper Great Plains Transportation Institute
UPN	Uniform Project Number
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
VPD	Vehicles per Day
WAFWA	Western Association of Fish and Wildlife Agencies
Section 4(f)	Section 4(f) of the 1966 Department of Transportation Act
Section 6(f)	Section 6(f) of the National Land and Water Conservation Funds Act

EXISTING AND PROJECTED CONDITIONS

1.0 INTRODUCTION

The Montana Department of Transportation (MDT) has initiated early project development activities for the Fairview-West project. The project, designated as STPP 201-2(14)64, CN 8650000, is intended to reconstruct approximately 6 miles of Montana Primary Highway 201 (MT 201/P-201) west of the Town of Fairview in Richland County. The segment of MT 201 proposed for reconstruction begins at Reference Post (RP) 63.6, located about 6 miles west of the community, and extends to the junction of P-201 and Montana Highway 200 (MT 200/Ellery Avenue) at RP 69.5 in Fairview.

The initial phase of the Fairview-West project, referred to as the Phase I Feasibility Study, involves the identification and analysis of potential new alignments for a portion of MT 201 between RP 67.4 and the intersection of MT 200/Ellery Avenue in Fairview (RP 69.5). MDT and local elected officials agreed that before commencing project development activities for the entire 6 miles of MT 201 (i.e. Phase 2), analysis work should be performed that informs the best possible location for MT 201 as it enters the Fairview community.

Coincident to the preparation of this Existing and Projected Conditions Report, related analysis work associated with the Phase I Feasibility Study has occurred and resulted in companion reports and memorandums. The following documents have been completed to assist in the analysis and to help inform the identification of potential new alignments:

- Quantum Route Optimization “Input” Memorandum – dated June 2, 2015
- Environmental Scan Report – dated September 29, 2015
- Alternative Alignment Analysis – dated September 29, 2015

A public meeting was held in Fairview to present the initial findings of potential alternative alignments for MT 201 between RP 67.4 and the intersection of MT 200/Ellery Avenue in Fairview (RP 69.5). The public meeting was held on August 25, 2015 at the Fairview School Cafeteria. Approximately 55 people attended the meeting, which consisted of an open house and a formal presentation/question and answer session.

All of the work associated with this Phase I Feasibility Study (i.e. alternative alignment analysis) is being completed outside of the formal NEPA/MEPA process, and is intended to inform the decision of the best alignment possible to increase safety and shift trucks from the existing road facility as it enters Fairview.

This Existing and Projected Conditions Report identifies existing and projected roadway conditions for MT 201 between RP 67.4 and RP 69.5, as well as social, economic, and environmental factors that influence this present roadway corridor. The analysis performed includes a planning level examination of the corridor by applying technical and environmental considerations to determine known issues, constraints, and/or areas of concern. The analysis contained in this report is based on existing and historic traffic data, field measurements and observations, roadway as-built plans, aerial imagery, Geographical Information Systems (GIS), and publically available environmental information and demographics. **Appendix A** contains a photo log of various features along MT 201.

1.1. Study Area

The study area of this Existing and Projected Conditions Report is a 2.1-mile long segment of the presently traveled way (PTW) and its adjoining roadside environment. This study area of MT 201 is intended to capture geometric, safety and traffic conditions of the existing roadway and its major intersection(s). This segment of MT 201 falls entirely within the larger Phase I study area examined in detail in the previously mentioned Environmental Scan. The Environmental Scan study area was established to include not only the PTW, but also areas that may be affected by potential new alignments for MT 201 between RP 67.4 and the intersection of MT 200/Ellery Avenue in Fairview (RP 69.5). A 200-foot buffer from centerline along both sides of the roadway was used to define the study area for purposes of this E&P Report. **Figure 1** presents the location of the existing MT 201 corridor and the study area. The segment of MT 201 under evaluation is located in the following legally described areas in Richland County:

- Township 24 North, Range 59 East, Sections 1, 12
- Township 24 North, Range 60 East, Sections 5, 6, 7, 8

The roadway corridor for MT 201 includes both lands in Richland County and the town of Fairview. The topography of the area crossed by the PTW is generally level land in and north of Fairview and rolling terrain in the foothills area west of Fairview. Surface elevations range from about 1,900 feet above sea level in Fairview to about 2,180 feet west of the Fairview Airport (located south of RP 68).

East of RP 67.4, the primary land uses are agricultural cropland and dispersed industrial uses including several gravel pits and a few oil well pads. The use of deep horizontal drilling technology allows wells to coexist with other land uses including farming. The Fairview Airport is also located south of MT 201 in the

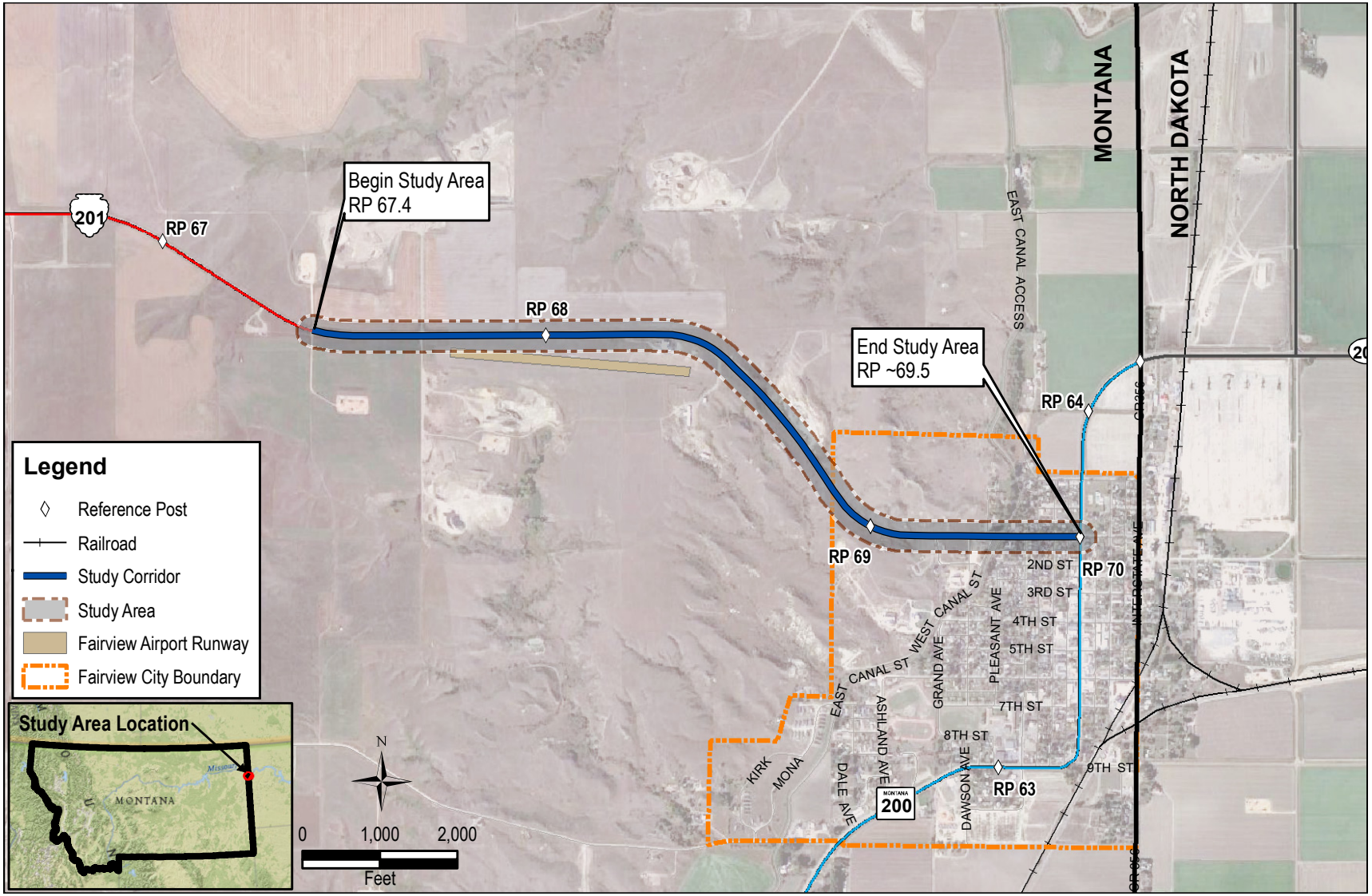

Figure 1: Study Area

vicinity of RP 68.0. A few commercial and public uses and a small cemetery exist along the roadway west of Fairview.

MT 201 enters the Town of Fairview at RP 68.87 and residential uses adjoin both sides of the roadway for several blocks between the Main Canal and MT 200/Ellery Avenue. MT 200/Ellery Avenue in Fairview serves as the community's main street, and the commercial core area of town is south of the MT 201 intersection. Sharbano Park, the only city park in Fairview, is located at the northeast quadrant of the intersection of MT 200 and MT 201.

1.2. Past, Current, and Planned Projects

A review of MDT's *Road Log* and Right-of-Way Plans shows the segment of MT 201 under study was originally built in the mid-1930s and reconstructed in 1950 under the following projects:

- RP 57.5 to RP 68.5 S 361(4)
- RP 68 to RP 69.5 S 327(2)

MT 201 did receive an overlay through an MDT Maintenance contract in 2013.

A search of the MDT online letting summary of road and bridge construction projects and the *2015-2019 Final Statewide Transportation Improvement Program (STIP)* were reviewed to identify notable recent projects within the Fairview area. A list of recent and planned projects, along with the letting date and a brief description, are shown in **Table 1**. The list is not an all-inclusive list of projects and does not include maintenance projects performed by MDT such as guardrail repair, pothole repair, striping, or other similar projects.

Table 1: Recent and Planned MDT Projects

	Project Name	ID Number	UPN	Letting Date	Description
Recent	**Fairview Intersection Improvements**	STPP 20-2(28)63 SFCP 20-2(26)63 STPP 20-2(27)63	7832	June 2012	Installation of traffic signal at MT 200 and 6th Street and improvements to the intersection of MT 200 and MT 201.
Planned	**Sidewalks – Richland County**	STPE	8561	FY 2015	Sidewalk installation along the east side of MT 200 between 1st and 2nd Streets, northside of 1st St between Montana and MT 200, and west side of Montana between 1st St and City Parking Lot.
	Sidney to Fairview	NH 20-2(30)53 STPP 20-2(29)53	7950	FY 2016	Minor rehabilitation with overlay, seal and cover (RP 52.57-62.3) on MT 200.
	MT 200-Fairview	STPP 20-2(31)62 NH 20-2(32)62	8168	FY 2019	Major rehabilitation without added capacity—new storm drains, milling/pulverizing existing surface, new plant mix surface (RP 62.3 -64.18) on MT 200.

Source: MDT Project List accessible at http://www3.mdt.mt.gov:7782/mtwtrn/mtwtrn.wtrk0009.project_init
2015-2019 Final Statewide Transportation Improvement Program (STIP) accessible at:
http://www.mdt.mt.gov/publications/docs/plans/stip/2015stip_final.pdf

1.3. Recent and Ongoing Transportation Planning in the Fairview Area

Several past and ongoing transportation planning projects address road conditions and use in the Fairview area. These projects are identified below and discussed further in the following paragraphs.

MT 16 / MT 200 Glendive to Fairview Corridor Study. MDT, in cooperation with Dawson and Richland Counties and the FHWA, completed a corridor planning study for the MT 16 / MT 200 corridor between Glendive and Fairview in July 2012. The corridor study examined the section of MT 16 from the junction of I-94 near Glendive to the junction of MT 200/County Road (CR) 123 south of Sidney and MT 200 from the north city limits of Sidney to the south city limits of Fairview. The corridor study area is located within the area influenced by oil development in the Bakken Formation, and was focused on addressing traffic and safety issues resulting from increasing regional traffic volumes due to rapid growth in the oil industry. The study recommended potential improvement options to improve safety and traffic operations, and actions to preserve and maintain the existing roadway infrastructure within the corridor.

Fairview Corridor Planning Study. The Town of Fairview and the MDT Glendive District initiated a corridor planning study in February 2015 to investigate alternative routes to alleviate truck traffic in the Fairview area. Truck traffic in Fairview has increased due to oil and gas development activities in the Bakken Oil Field in both Montana and North Dakota. Much of the drilling activity has occurred in North Dakota and this activity has contributed significantly to the truck traffic seen in the Fairview area. The corridor planning study includes collaboration between MDT, North Dakota Department of Transportation (NDDOT), and Federal Highway Administration (FHWA), as well as the local governmental officials of Fairview, East Fairview, Richland County, and McKenzie County, North Dakota. The corridor planning study will identify potential improvement options to facilitate truck movements through the Fairview area. The Fairview Corridor Planning Study is expected to be completed in April 2016.

Richland County Master Transportation Plan. Richland County has developed a Master Transportation Plan[1] and held a series of public hearings on the plan in April 2015. The transportation plan has a 20-year planning horizon and identifies a wide range of improvements intended to support land use development, both currently and as growth is anticipated to occur in the future. Short-term improvements in the plan are focused on improving roads to allow safe connections throughout the county and longer term improvements aim to build capacity to address future traffic growth.

Within the Fairview area, the Master Transportation Plan identifies the following projects as recommended future improvements and specifies a desired timeframe for their implementation:

Implementation Year 2020 to 2030

- **Project #16** - widening and adding turn lanes on MT 201 at the route's intersection with County Road 134 (located at RP 66.5± on MT 201); and
- **Project #17** - realigning the intersection of County Road 134 and MT 200 at the south edge of Fairview.

Implementation Year 2030 to 2040

- **Project #33** - constructing a 5-lane bypass route around the town anticipated after 2030.

[1] KLJ, *Richland County Draft Transportation Plan (April 2015)*, Available at: http://richlandplan.com/, accessed: 4/20/15.

1.4. Local Planning

Land use and development within the MT 201 study corridor is guided by the Richland County Growth Policy Update and the Town of Fairview Growth Policy Update. Both of these local planning documents were reviewed for relevance to transportation within the study corridor. Future improvements considered for MT 201 should be reviewed for consistency with existing local plans and regulations during the project development process. The following provides a summary of what relevant planning documents say with respect to transportation in and around Fairview.

Richland County Growth Policy. The Richland County Growth Policy Update (2015)[2] was drafted as a comprehensive plan to provide guidance for decisions made regarding land development and public investments within the county. The document includes a section devoted to transportation which outlines two transportation-related goals and several objectives to help achieve the goals that are relevant to this study. These goals and objectives are listed below:

Relevant Goals

- Provide for logical, cost effective future extension of infrastructure near cities and towns.
- Incorporate recommendations from the Transportation Plan, including preserving right-of-way for corridors and implementing road development standards.
- Work with the state to maintain and improve safety on state routes.

Relevant Objectives

- Implement recommendations from the Transportation Plan into existing planning documents such as subdivision regulations, local ordinances and other applicable regulations.
- Coordinate with Montana Department of Transportation on improvements to state highways and access to state roads.
- Upgrade the priorities for improvements on Highways 16, 200 and 201.

Town of Fairview Growth Policy. The Town of Fairview Growth Policy Update (2015)[3] is intended to provide policy guidance and a framework to guide decisions about the social, environmental, economic, and physical makeup of the town of Fairview. The Growth Policy Update, prepared concurrently with the county's growth policy, includes a transportation element with similar transportation goals and objectives. The town's growth policy included an additional goal focused on improving safety for pedestrians by increasing sidewalk infrastructure within the community.

[2] KLJ, *Richland County Growth Policy Update (April 2015)*, Available at: http://richlandplan.com/, accessed: 4/20/15.
[3] KLJ, *Town of Fairview Growth Policy Update (April 2015)*, Available at: http://richlandplan.com/, accessed: 4/20/15.

2.0 TRANSPORTATION SYSTEM

MT 201 begins at Montana Highway 13 (P-25) in adjoining McCone County and continues easterly for nearly 70 miles to the intersection with MT 200 in Fairview. Montana Highway 16 (N-62) intersects P-201 about 10 miles west of Fairview. Between MT 16 and MT 200, MT 201 is classified as a Minor Arterial Highway on the Non-NHS Primary System in Montana. Minor arterials provide service for trips of moderate length, serve geographic areas that are smaller than their principal arterial counterparts, and offer connectivity to the principal arterial system. In a rural setting, minor arterials are typically designed to provide relatively high overall travel speeds, with minimum interference to through movement

MT 200 passes through Fairview and becomes North Dakota Highway 200 (ND 200) at the nearby state line. MT 200 connects the communities of Sidney and Fairview to North Dakota and roadways serving the oil and gas development areas in the northwestern portion of North Dakota. The roadway is classified as a Principal Arterial Non-Interstate route. Principal arterials carry the major portion of trips entering and leaving an activity center, as well as the majority of through movements that either go directly through or bypass the area. Principal arterials place an emphasis on mobility and directly serve abutting land uses. In rural settings, principal arterials service trips lengths and travel density characteristics similar to that of interstate travel.

A network of local roads and streets serve the community of Fairview. MT 201 in Fairview is intersected by the following roads and streets (from east to west): MT 200/Ellery Avenue, Central Avenue, North Western Avenue, South Western Avenue, North Dawson Avenue, and South Dawson Avenue.

The following sections discuss the transportation-specific aspects of the study corridor. Information obtained from publically available sources, field observations, data collection efforts, GIS data, and as-built drawings were used to evaluate the transportation system.

2.1. Physical Features and Characteristics

As noted earlier, MT 201 was originally built in the mid-1930s and reconstructed in 1950. Within the study corridor, the roadway consists of two travel lanes and serves both local access and regional travel demands.

2.1.1. Roadway Surfacing

The MDT *Road Log*[4] contains information for roadway surface width, lane width, shoulder width, surfacing thickness, and base thickness. According to the *Road Log*, the study corridor consists of a 24-foot paved roadway. The paved surface includes two 12-foot travel lanes and no shoulders. The MDT *Road Design Manual*[5] requires a minimum travel lane width of 12 feet. The MDT *NHS and Non-NHS Route Segment Map*[6] does not show a recommended roadway width for the MT 201 corridor. The MDT Roadway Width Committee is responsible for determining the appropriate width during future project development.

[4] *Montana Road Log*, Montana Department of Transportation, 2013, http://www.mdt.mt.gov/publications/docs/brochures/2013_ROADLOG.PDF
[5] *Road Design Manual*, Montana Department of Transportation, July 18, 2008, http://www.mdt.mt.gov/publications/manuals.shtml
[6] NHS and Non-NHS Route Segment Map (available at http://www.mdt.mt.gov/other/webdata/external/cadd/MONTANA_ROAD_DESIGN_MANUAL/ROUTE_SEGMENT_PLAN_2014_.PDF)

2.1.1.1. Pavement Condition

MDT annually tracks and measures pavement condition indices along the corridor. MDTs Pavement Management System (PvMS) is used to analyze the collected data to determine the relative performance of the pavement. Items of primary interest include the presence and degree of cracking and rutting, as well as overall ride quality. By understanding the condition of the pavement, MDT can identify the most appropriate treatments and resources needed to extend pavement life. Several pavement condition indices are monitored through MDT's PvMS. The performance measures and corresponding indices are such that the numerical value of 100 is assigned to a new pavement with no flaws, and zero is assigned to a highly degraded pavement. The following performance measures are routinely used to track pavement conditions:

- **Ride Index:** This is determined by using an internationally applied roughness index (IRI) in inches per mile and converting the number to a 0 to 100 scale.
- **Rut Index (RI):** This is calculated by converting rut depth to a 0 to 100 scale. Rut measurements are taken approximately every foot and averaged into one-tenth-mile reported depths.
- **Alligator Crack Index (ACI):** This is measured by combining all load-associated cracking and converting the index to a 0 to 100 scale.
- **Miscellaneous Cracking Index (MCI):** This is calculated by combining all non-load-associated cracking and converting the index into a 0 to 100 scale.

The segment of MT 201 in the study corridor has 1.5 inches of compacted bituminous surfacing with seal and cover over a 3-inch compacted top course and a 7-10 inches base course. The roadway did receive an overlay through an MDT Maintenance contract in 2013, and the various performance measures highlighted in **Table 2** indicate the pavement on MT 201 is in relatively good condition.

Table 2: Roadway Surfacing and Pavement Condition

Location	Surface Width	Last Surface	Flexible Thickness (inches)	IRI	RI	ACI	MCI
RP 57.76 to RP 68.04	24	2013	1.5	84.2	79.9	89.5	99.0
RP 68.04 to RP 69.52*	24	2013	1.5	77.0	84.0	98.0	99.0

* Year 2016

2.1.2. Structures

One bridge—the Main Canal bridge (NBI S00201069+03001)—occurs within the MT 201 study corridor. The bridge, located on the west edge of Fairview at RP 69.35, was built in 1934 under contract NRS 327 U2 (Drawing 1215). The existing wooden structure is 24 feet wide and 51 feet long and has a wood deck overlain with bituminous surfacing. The bridge has a Sufficiency Rating of 51.8 based on its most recent inspection in December 2014. The bridge is not deficient based on its Sufficiency Rating and is considered to be in good overall condition.

Looking east across the Main Canal bridge on MT 201.

Looking north at the existing timber structure.

A copy of the most recent condition assessment form for the structure can be found in **Appendix D**.

2.1.3. Right-of-Way

Right-of-way boundaries and widths for MT 201 were estimated based on a review of available MDT as-built drawings, right-of-way plans, and State of Montana cadastral information. Right-of-way widths vary throughout the corridor. MDT right-of-way widths on rural sections of MT 201 typically range from 80 to 120 feet. Within the town of Fairview, the right-of-way width generally varies from 66 to 85 feet; however, a short section of right-of-way east of the Main Canal is only 47 feet wide.

Table 3 summarizes the variation in right-of-way dimensions for MT 201. The locations for changes in right-of-way widths are identified by project stations based on a review of as-built and right-of-way plans for construction projects. The reference post locations presented in the table are estimates based on known reference point locations within the study corridor.

Table 3: MT 201 Right-of-Way Analysis

Project Stations		Reference Point	R/W Offset from Centerline (ft)		Total R/W
From	To	(RP) Locations	Left	Right	Width (ft)
Begin MT 201 Study Corridor at RP 67.4±					
149+00	154+22.1	67.4+ to 67.50	60	50-117	110-177
154+22.1	175+26	67.50 to 67.90	60	30-35	90-95
175+26	202+69.4	67.90 to 68.46	50	35	85
202+69.4	223+49.4	68.46 to 68.85	60	60	120
223+49.4	231+75	68.85 to 69.01	40	40	80
231+75	234+00	69.01 to 69.05	60	40	100
234+00	236+40.4	69.05 to 69.09	40	40	80
236+40.4	240+00	69.09 to 69.16	40	30-45	70-85
240+00	248+52.7	69.16 to 69.32	40	40-45	80-85
248+52.7	253+00	69.32 to 69.40	27	20	47
253+00	258+33.7	69.40 to 69.52	40-42	24-26	66
End MT 201 Study Corridor at MT 200/Ellery Avenue at RP 69.52					

2.1.4. Approaches and Accesses

Access along the rural section of MT 201 west of Fairview is limited by terrain and adjoining land uses. There are no public road approaches between the beginning of the study corridor (RP 67.4) and the corporate limits of the town of Fairview (RP 68.87). This section includes five approaches to adjacent oil pads and gravel pits/aggregate businesses and an approach accessing the Fairview Airport. None of the approaches along this section of MT 201 have traffic controls.

The number and frequency of access points along MT 201 increases within the town of Fairview. There are six public roads which intersect MT 201 within Fairview. These roads are local streets which serve residential areas or other adjoining uses. The intersections of North and South Western Avenues, Central Avenue, and MT 200/Ellery Avenue are stop controlled. Alleys and several private driveway approaches exist along MT 201 between the Main Canal and MT 200/Ellery Avenue.

Table 4 lists developed approaches along MT 201 and describes the form of traffic control at each approach. The reference post locations presented in the table are estimates based on known locations and measurements calculated using online aerial photography. Montana Code Annotated (MCA) 61-8-343 defines state law with regards to side street approaches to a public roadway and states that "*…the operator of a vehicle about to enter or cross a roadway from a private road, driveway, alley, or public approach ramp shall yield the right-of-way to all vehicles approaching on the roadway.*"

Table 4: MT 201 Public and Private Approaches

Intersection/Approach	RP	Classification	Jurisdiction	Traffic Control
Oil Pad Roads (RT/LT)	67.4±	Private	Landowner	None
Gravel Pit Roads (RT/LT)	67.70	Private (RT) / Private-restricted (LT)	Landowner	None
Farm Field Approach (LT)	67.93	Private	Landowner	None
Fairview Airport Approach (RT)	68.19	Restricted	County	None
Approach (RT)	68.40	Private	Landowner	None
2 Approaches (LT)	68.46	Private	Landowner	None
Pit approach (LT)	68.76	Private - restricted	Landowner	None
Water Tank Approach (RT)	69.04	Restricted	Town	None
Unnamed Street	69.16	Local Street	Town	None
North Dawson Avenue (LT)	69.24	Local Street	Town	None
West Canal Street (RT)	69.30	Local Street	Town	None
East Canal Access Road (RT/LT)	69.32	Canal Access Road	Bureau of Reclamation	None
Driveway (LT)	69.35	Private	Landowner	None
Driveway (LT)	69.36	Private	Landowner	None
South Western Avenue (RT)	69.38	Local Street	Town	Stop Control
Driveway (LT)	69.38	Private	Landowner	None
Driveway (RT)	69.40	Private	Landowner	None
North Western Avenue (LT)	69.41	Local Street	Town	Stop Control
Alley and Driveway (RT)	69.42	Local/Private	Town/Landowner	None
Central Avenue (LT & RT)	69.45	Local Street	Town	Stop Control
Alley (LT) /Alley and Driveway (RT)	69.49	Local/Private	Town/Landowner	None
MT 200/Ellery Avenue (LT & RT)	69.52	Principal Arterial	MDT	All Way Stop Control

2.1.5. Drainage Conditions

Topography within the study area generally slopes from west to east. Runoff from MT 201 drains to adjoining shoulders and graded side slopes carry run-off to natural drainages through constructed roadside ditches within the right-of-way.

Within the town of Fairview, several adjoining local streets (South Western Avenue, North Western Avenue, and Central Avenue) have been constructed with curbs and gutter. A valley gutter has been installed across Central Avenue north of MT 201 to maintain drainage through the area. Valley gutters have also been installed at the intersection of MT 201 and MT 200/Ellery Avenue to direct drainage flows.

Table 5 provides a list of mainline drainage culverts crossing MT 201. These culvert locations are identified by project stations based on a review of as-built plans for construction projects. The reference post locations presented for each culvert are estimates based on known reference point locations within the study corridor.

Table 5: Mainline Drainage Culverts on MT 201

Project Station	RP	Pipe Dimensions
From S 361(4) As-Builts		
155+55	67.52	48” x 64’ CMP Drain
163+75	67.68	24” x 48’ CMP Drain
178+15	67.95	48” x 64’ CMP Drain
From S 327(2) As-Builts		
190+00	68.22	24” X 40’ CMP Drain
209+14	68.58	30” X 110’ CMP Drain (Skewed)
210+82	68.61	18” x 86’ CMP Drain
217+40	68.74	18” x 52’ CMP Drain
220+19	68.79	36” x 72’ CMP Drain
221+48	68.81	18” x 72’ CMP Drain
236+77	69.10	24” x 48’ CMP Drain

2.1.6. Winter Operations

MT 201 is considered a Level II winter maintenance area according to the MDT *Maintenance Operations and Procedures Manual*[7]. A Level II roadway receives the second highest level of maintenance and attention during inclement weather events. Level II routes are eligible to receive up to 17 hours-per-day coverage typically between 5:00 AM and 10:00 PM during a winter storm event. Coverage is at the discretion of MDT’s Area Maintenance Chief. The primary objective is to keep one lane in each direction open to traffic. Snow packed and/or icy surfaces are acceptable but they may be treated with abrasives or abrasive/chemical combination.

[7] *Maintenance Operations and Procedures Manual*, Montana Department of Transportation, Chapter 9, Winter Maintenance Program, December 2009, http://www.mdt.mt.gov/publications/docs/manuals/mmanual/chapt9c.pdf

2.1.7. Other Transportation Modes

2.1.7.1. Non-motorized

With the exception of sidewalks in several quadrants at the intersection of MT 201 and MT 200/Ellery Avenue, there are no dedicated pedestrian or bicycle facilities or sidewalks. Epoxy pedestrian crossing markings and stop bars have been installed on all four legs of the intersection at MT 201 and MT 200/Ellery Avenue. Sharbono Park is located in the northeast quadrant of the intersection.

The two-track trail along the east side of the Main Canal south of MT 201 at RP 69.32 is signed for pedestrian use only. It is assumed this trail may occasionally be used by pedestrians walking within the community.

2.1.7.2. Transit

According to the *Town of Fairview Growth Policy*, Jefferson Lines is the only multi-county transit provider operating in Richland County. Jefferson Lines offers daily east and west connections from Sidney to regional Greyhound terminals in Glendive and in North Dakota.

Richland County Transportation Service (RCTS) operates a transit service within the county and serves the area within a 5-mile radius of Fairview. RTCS operates on a demand/response basis and offers door-to-door service. Advance reservations for rides are encouraged by way of discounted fares but they are not required as long as there is an available bus at the requested time. Currently, RCTS provides regularly scheduled transit service to and from Fairview on Thursdays. Service may be requested on other weekdays, but the service is subject to availability.

2.1.7.3. Rail Service

The BNSF Railway Company (BNSF) operates the line from Glendive north through Fairview. The primary agricultural commodities transported on the line are grains and refined sugar during harvest season. However, oil and gas commodities including oil tankers, fracking sand, machinery and other goods related to energy extraction businesses are routinely shipped on the line.

Northstar Transloading began operations at a new facility in East Fairview, North Dakota in late 2014. The firm's Bakken terminal is a 400-acre rail-and-truck transportation hub serving the oil and gas companies operating in the area. The transloading facility is served by the BNSF.

There are no at-grade or grade-separated railroad crossings in the MT 201 study corridor.

2.1.7.4. Air Service

The Fairview Airport is located on a 14.6-acre parcel adjoining the south side of MT 201 about a mile northwest of the community. The airport, administered by the Sidney-Richland Regional Airport Authority, consists of a 3,000-feet-long by 95-feet-wide unlighted turf strip. The airfield includes a tie-down area for several aircraft and several small hangars. The airfield has historically served private aircraft and seasonal commercial crop spraying operation. The airport is accessed from MT 201 at RP 68.2.

An Airport Affected Area (AAA) and associated AAA regulations have been established for the airport. The AAA includes the land surrounding the runways and the regulated airspace (operating surfaces) above that land. The AAA extends 9,000 feet from each end of the runway and 9,000 feet from the runway centerline over its length.

2.1.8. Utilities

Montana Dakota Utilities (MDU) distributes natural gas and operates electric power generation, transmission, and distribution in the Fairview area. Century Link and Mid-Rivers Cooperative provide telephone services and internet access in Richland County and Fairview.

A detailed utility investigation would be required to identify existing utilities within the MT 201 study corridor. Recent aerial and "street view" photography of MT 201 is available from both Google Earth and Bing. A review of these photographs shows underground telephone and communications lines, buried sewer and water lines, and likely petroleum pipelines at various locations within the corridor. Street lights were identified along MT 201 at four locations between North Western Avenue and MT 200/Ellery Avenue in Fairview. Within Fairview, overhead power is located along the south side of MT 201 from the Main Canal to MT 200/Ellery Avenue. Overhead power lines cross MT 201 at the locations listed in **Table 6**.

Table 6: Overhead Power Line Crossings of MT 201

RP	Comments
68.46	Overhead Wire
69.17	Multiple Overhead Wires
69.32	Multiple Overhead Wires
69.36	Overhead Wire
69.39	Overhead Wire
69.41	Multiple Overhead Wires
69.48	Multiple Overhead Wires
69.48	Multiple Overhead Wires

2.2. Traffic Operations

An evaluation of traffic operations for the study corridor was completed using available data provided by MDT. Traffic volume data for existing and historic conditions were available at multiple locations within the P-201 study corridor and on adjoining sections of MT 200. The following sections provide details about the existing and projected traffic characteristics for the study corridor.

2.2.1. Traffic Volumes

Traffic volumes along the roadways within the study area are collected annually as part of MDT's traffic data collection program. Four data collection sites in the town of Fairview were considered including 2 sites on MT 201 and 2 count sites on MT 200 located both north and south of the MT 201 intersection. The Automatic Traffic Recording (ATR) site at RP 66.16 on MT 201 was also considered. The site (ATR Site A-76) is located about 5 miles west of the study corridor and was judged to provide representative traffic volume information for the rural segment of the MT 201 study corridor. **Figure 2** shows the location of these traffic count stations.

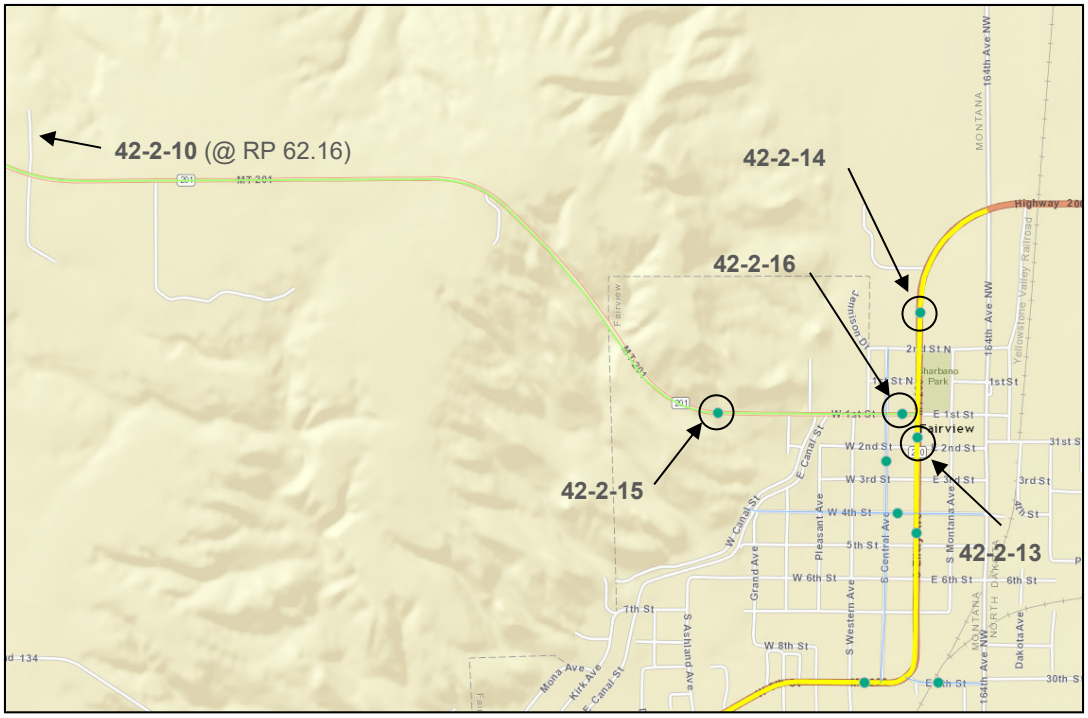

Figure 2: Traffic Count Stations in the Fairview Area

The data collected at these sites is used to determine an average annual daily traffic (AADT) volume. AADT represents the average number of vehicles that pass a given point on a typical day of the year. AADT volumes for the count stations reviewed over the 1995 through 2014 period are presented in **Table 7**. As the table shows, existing (2014) AADT volumes on MT 201 ranged from 670 vehicles per day (vpd) in the rural portion of the study corridor to about 2,070 vpd west of MT 200 in Fairview. Existing AADT volumes on MT 200 were 6,370 vpd and 7,110 vpd, respectively, north and south of the MT 201 intersection in Fairview.

Table 7: AADT Volumes for Selected Traffic Count Stations

Site ID	Location	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
42-2-10 (MT 201)*	RP 66.13	270	270	430	210	540	420	350	580	--	1,340
42-2-15 (MT 201)	RP 69.09	420	600	630	450	460	440	530	540	--	1,420
42-2-16 (MT 201)	RP 69.48	500	810	740	580	500	500	510	630	--	1,500
42-2-13 (MT 200)	RP 63.69	2,880	2,790	3,350	2,920	2,900	2,500	--	2,940	--	3,960
42-2-14 (MT 200)	RP 63.95	1,800	2,150	2,360	2,730	2,110	2,060	2,050	2,560	2,400	3,390

Site	Location	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
42-2-10 (MT 201)*	RP 66.13	--	950	880	840	820	1,630	1,220	1,150	670	670
42-2-15 (MT 201)	RP 69.09	1,350	1,010	880	840	820	1,150	830	1,430	1,410	2,040
42-2-16 (MT 201)	RP 69.48	1,450	1,100	1,010	960	940	940	1,030	3,260	2,720	2,070
42-2-13 (MT 200)	RP 63.69	4,630	4,210	3,490	3,280	3,400	3,410	6,860	9,400	7,190	6,370
42-2-14 (MT 200)	RP 63.95	3,880	3,300	3,300	3,110	3,110	3,120	5,040	7,540	7,210	7,110

Source: MDT Data and Statistics Bureau, Traffic Data Collection Section, 2015
** Automatic Traffic Recorder (ATR) Station A-70*

It is interesting to note the fluctuations in AADT volumes seen on MT 201 in the Fairview area over the past 20 years. From 1995 through 2002, AADT volumes along the route showed relatively little fluctuation. The recording stations show a notable increase in AADT during 2004 and 2005 followed by a gradual decline through 2009. In response to trends in energy development in the area, AADT volumes on MT 201 increased and generally peaked in 2012. Since that time, AADT volumes on MT 201 have slowly decreased. Trends in AADT at the two count stations on MT 200 in Fairview have been similar over the past two decades. **Figure 3** presents the 20 year AADT traffic volume data for the five count stations within the Fairview area of interest.

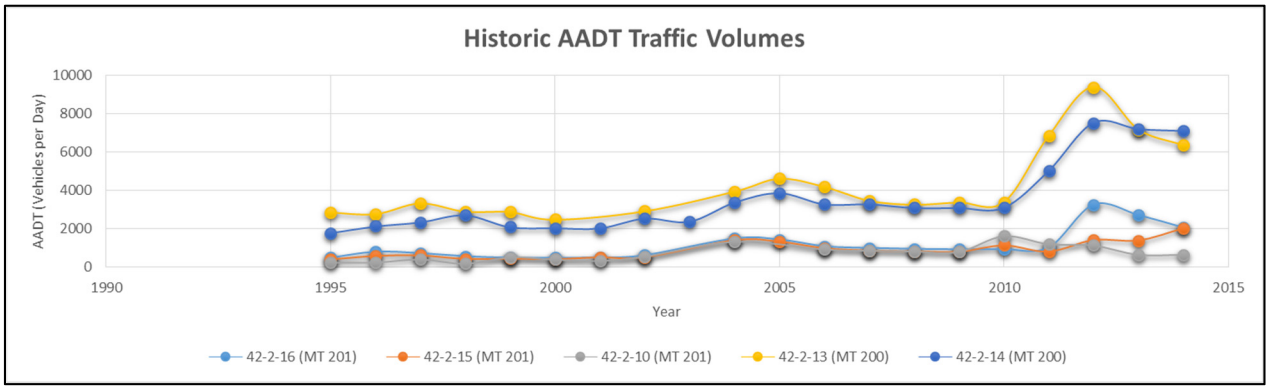

Figure 3: Historic AADTs within the Fairview Area

2.2.1.1. PROJECTED CONDITIONS

Projected transportation conditions were analyzed to estimate how traffic volumes and characteristics may change compared to existing conditions. Several different methods were evaluated to arrive at potential future traffic volumes for MT 201 and are explained in further detail in this section.

Method 1 – Historic AADTs

The first projection method for year 2035 traffic volumes on MT 201 was based on calculating historic traffic annual average growth rates (AAGR) from AADT data from the past 20 years (1995 through 2014) provided by MDT. The calculation to arrive at the AAGR is as follows:

$$AAGR = \{[(\text{Ending Volume}/\text{Starting Volume})^{(1/(\text{Ending Year}-\text{Starting Year}))}]-1\} * 100$$

Four short-term traffic count station locations, and one ATR site, were analyzed as shown in **Table 8**.

Table 8: AAGR for Selected Traffic Count Stations

Site ID	Location	1995 AADT	2014 AADT	AAGR (1995-2014)
42-2-10 (MT 201)*	**RP 66.13**	270	670	4.90%
42-2-15 (MT 201)	**RP 69.09**	420	2,040	8.67%
42-2-16 (MT 201)	**RP 69.48**	500	2,070	7.76%
42-2-13 (MT 200)	**RP 63.69**	2,880	6,370	4.27%
42-2-14 (MT 200)	**RP 63.95**	1,800	7,110	7.50%
Weighted Average				**6.44%**

Source: MDT Data and Statistics Bureau, Traffic Data Collection Section, 2015
** Automatic Traffic Recorder (ATR) Station A-70*

The weighted average AAGR of 6.44% provides a representative picture of traffic growth within the overall Fairview area based on historical trends over a recent 20 year period (1995 – 2014). A 6.44% AAGR, when applied to those count sites on MT 201 only, would yield future AADT volumes as shown in **Table 9**.

Table 9: Year 2035 AADT Volumes Based on Weighted AAGR

Site ID	Location	Weighted AAGR	2014 AADT	Year 2035 AADT
42-2-10 (MT 201)*	**RP 66.13**	6.44%	670	2,485
42-2-15 (MT 201)	**RP 69.09**	6.44%	2,040	7,565
42-2-16 (MT 201)	**RP 69.48**	6.44%	2,070	7,677

Source: MDT Data and Statistics Bureau, Traffic Data Collection Section, 2015
** Automatic Traffic Recorder (ATR) Station A-70*

Method 2 – Trend Line Analysis

Another manner evaluated to compute future traffic volumes was to select each of the three count sites on MT 201, plot the historic 20 year AADT data graphically, and develop a trend line (i.e. best fit line) to arrive at an equation that could be used to project 20 years forward. The best fit trend line removes the influences of the one or two years with high or low peaks, and may better represent long term traffic growth. **Figure 4** shows the trend line analysis for the three count sites on MT 201. **Table 10** contains the year 2035 AADT volume projections using this method.

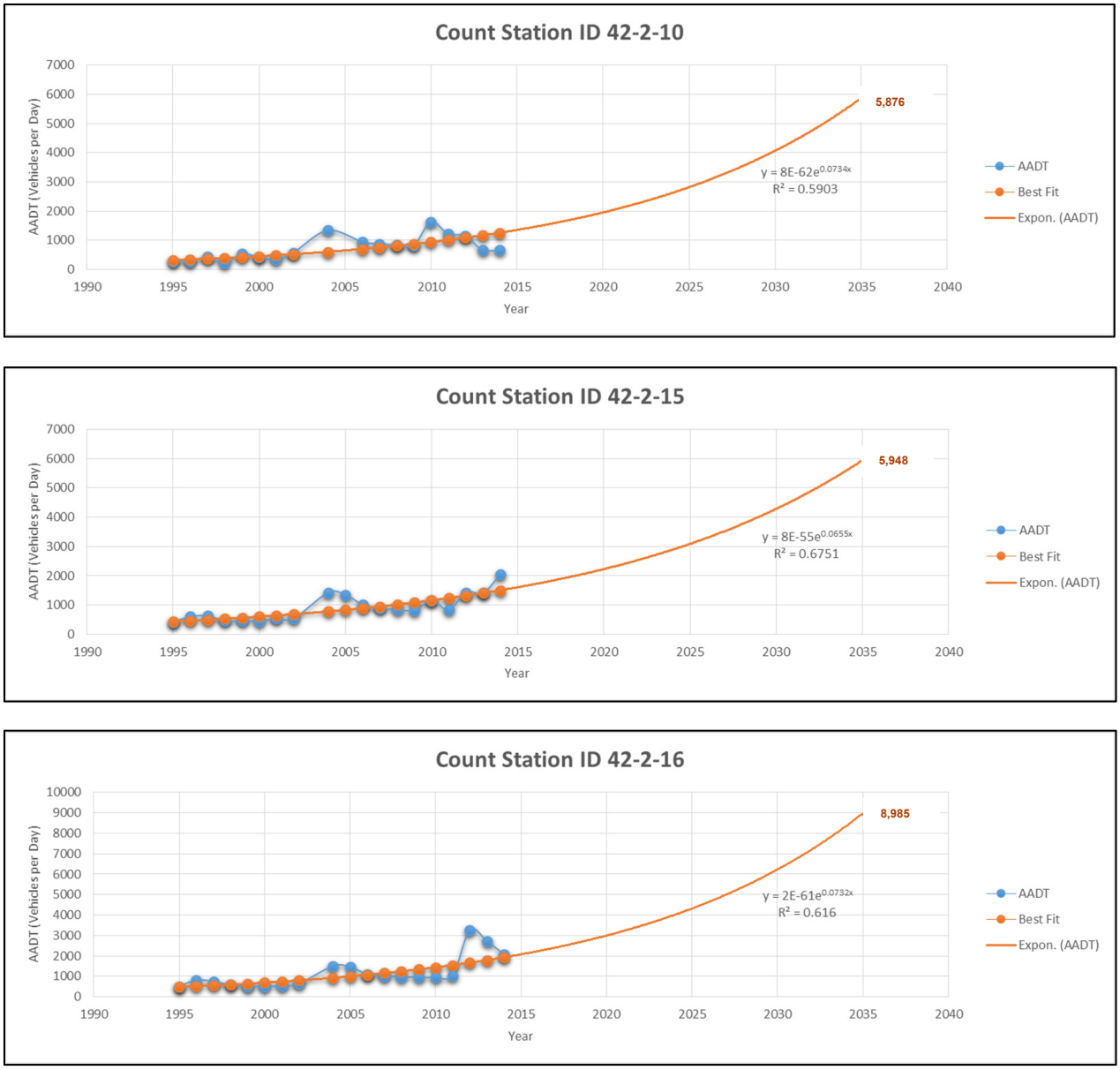

Figure 4: Count Station Trend Line Analysis

Table 10: Year 2035 AADT Volumes Based on Best Fit Line Equation(s)

Site ID	Location	2014 AADT	Year 2035 AADT
42-2-10 (MT 201)*	RP 66.13	670	5,876
42-2-15 (MT 201)	RP 69.09	2,040	5,948
42-2-16 (MT 201)	RP 69.48	2,070	8,985

Source: MDT Data and Statistics Bureau, Traffic Data Collection Section, and RPA, 2015
** Automatic Traffic Recorder (ATR) Station A-70*

Method 3 – Previous Bakken Report Comparison

A final method of assessing projected traffic volumes was through a review of traffic volume growth trends identified in the 2012 report titled *An Assessment of County and Local Road Infrastructure Needs in North Dakota*, prepared by the Upper Great Plains Transportation Institute (UGPTI), North Dakota State University. The report identifies traffic volume growth trends related to oil industry development in the Bakken region using the most recent projection forecasts and traffic estimates. The increase in traffic volumes through Fairview is largely associated with growth in the oil industry in the Bakken region in northeastern Montana and northwestern North Dakota. The reports indicate traffic volumes on roadways serving the Bakken region will continue to grow until 2025. After 2025 the reports indicate traffic volumes on roadways serving the Bakken regions are expected to decrease to 2015 levels by the year 2035 (see **Figure 5**). The closest North Dakota County to Fairview is McKenzie County – the blue line in **Figure 5**.

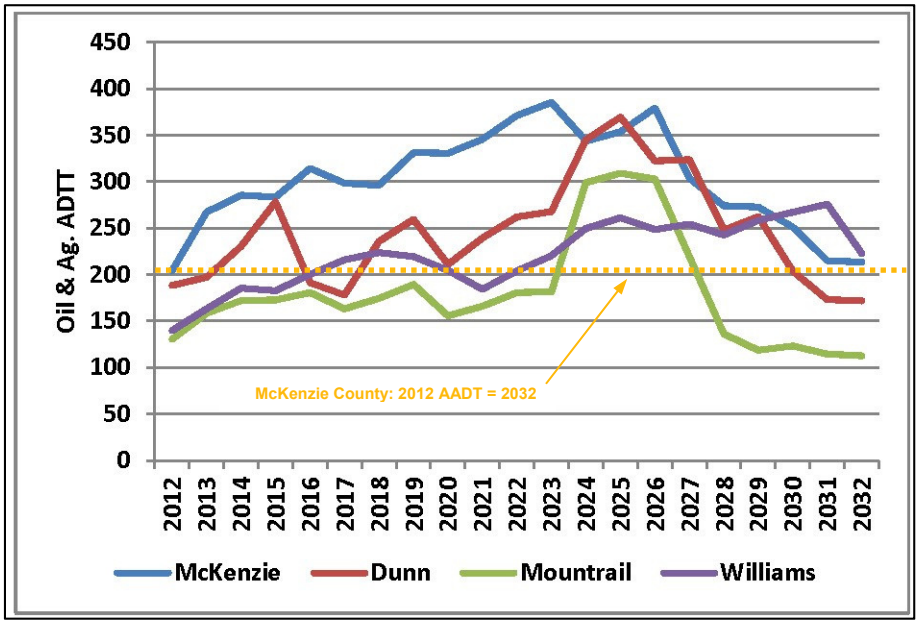

Figure 5: Traffic Patterns in Heavily Impacted North Dakota Counties

According to this methodology, year 2035 AADTs on MT 201 would very closely mimic those realized in the year 2012, as shown in **Table 11**.

Table 11: Year 2035 AADT Volumes Based on ND County Specific Analysis

Site ID	Location	2012 AADT	Year 2035 AADT
42-2-10 (MT 201)*	**RP 66.13**	1,150	1,150
42-2-15 (MT 201)	**RP 69.09**	1,430	1,430
42-2-16 (MT 201)	**RP 69.48**	3,260	3,260

Source: MDT Data and Statistics Bureau, Traffic Data Collection Section, and RPA, 2015
** Automatic Traffic Recorder (ATR) Station A-70*

Projected Traffic Volume Growth Conclusion

Based on the various traffic volume projections presented herein, future year 2035 AADT volumes directly west of the intersection of MT 201 with MT 200 could range from a low projection of 3,260 vpd (Method 3), a medium projection of 7,677 vpd (Method 1) and a high projection of 8,985 vpd (Method 2). Of note is the Preliminary Field Report (PFR) dated August 25, 2014 identified an AADT volume of 1,830 vpd by the year 2039, with a clarifier that that projection was likely underestimated.

The various projection scenarios noted above result in AAGRs of 0.00% (low/no growth scenario), 6.44% (medium growth scenario), and 7.60% (high growth scenario).

2.2.2. MT 201 and MT 200/Ellery Avenue Intersection

2.2.2.1. Previous Intersection Analysis completed by MDT

MDT completed an Operational Review for the intersection of MT 201 and MT 200/Ellery Avenue in August 2014 (full technical memorandum included in **Appendix B**). The purpose of the review was to determine the appropriate traffic control and lane configuration for the intersection as well as to identify any operational issues since the installation of all-way stop control (AWSC).

A total of 7 hours of traffic volume and turning movement data was manually collected by MDT for the intersection in May 2014. Due to an incident involving a trailer malfunction, count data after 5 PM was not collected. Time gaps in the 2014 data were supplemented with data from a similar manual count conducted by MDT in August 2011 to yield a full data set. The 2011 counts were judged to be representative of the traffic patterns and volumes seen in 2014. MDT's count data showed the following:

- The AM Peak hour (7:15 to 8:15 AM) traffic volumes on MT 201 were higher than those seen during the Noon and PM Peak hours.
- The highest traffic volumes on MT 200/Ellery Avenue were recorded during the PM Peak hour (4:00 to 5:00 PM).
- Left turns onto MT 200/Ellery Avenue was the primary traffic movement for eastbound traffic on MT 201 during all peak hours.
- Between 8.5% and 12.5% of the total traffic on MT 200/Ellery Avenue turned onto MT 201 during the identified peak hours. This percentage was highest during the AM Peak hour and lowest during the PM Peak hour.

MDT also observed significant truck volumes on the eastbound approach of MT 201 and on both approaches of MT 200/Ellery Avenue during the 2014 count. Only 5 pedestrians were observed using the intersection during the hours of observation and bicycle volumes were insignificant during the data collection period.

MDT's Operational Review for the intersection resulted in the following conclusions:

- No Manual on Uniform Traffic Control Devices (MUTCD) traffic signal warrants were satisfied based on current conditions.
- MDT's capacity analysis indicates the intersection currently operates, and is expected to operate in the design year 2034, with acceptable delays, volume to capacity (v/c) ratio, and Level of Service (LOS) on all approaches.
- Queues of up to five vehicles were observed on the MT 201 (eastbound approach). The queues were the result of slower than average trucks moving through the intersection. The queues did not appear detrimental to delays or LOS since they cleared relatively quickly.

- The existing configuration at the intersection functions better than a configuration with dedicated left turn lanes on the north and south approaches.
- A significant number of users were observed disobeying the stop control by making only slight reductions in speed at the stop signs.
- The current AWSC traffic control and the existing lane configuration at the intersection are appropriate at this time.

The MDT Operational Review relied on Average Growth Rates (AGRs) from a 2012 report titles MT16/MT200 Glendive to Fairview Corridor Planning Study (prepared by DowlHKM). AGRs used to forecast to the year 2034 consisted of a short-term AGR of 13.7% through 2017, and an AGR of 1% thereafter to the year 2034.

2.2.2.2. Intersection Analysis Completed for This Report

Due to changes in oil industry development in the Bakken region and associated difficulties in forecasting accurate traffic volumes, it is desirable to portray a range of possible traffic volume scenarios. Low/no, medium and high growth scenarios have been previously presented in section 2.2.2.1. The analysis resulted in different growth scenarios as follows:

- Low/No Growth Scenario: AAGR 0.00%
- Medium Growth Scenario: AAGR 6.44%
- High Growth Scenario: AAGR 7.60%

Scenario analysis of the intersection of MT 201 / MT 200 was completed by applying the AAGRs noted above to all turning movements at the intersection. **Table 12** depicts the results of the intersection level of service (LOS) analysis. **Appendix E** contains AM and PM peak-hour turning movement volumes for year 2015 and year 2035.

Table 12: MT 201 / MT 200 Intersection LOS for 2015 and 2035 (All Growth Scenarios)

Condition	AAGR	Movement	AM Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Existing 2015	-	Northbound	9.46	A	8.88	A
		Southbound	8.89	A	9.69	A
		Eastbound	9.33	A	9.16	A
		Westbound	8.32	A	8.31	A
		Intersection	9.23	A	9.37	A
Projected 2035 (Low/No Growth)	0.00%	Northbound	9.46	A	8.88	A
		Southbound	8.89	A	9.69	A
		Eastbound	9.33	A	9.16	A
		Westbound	8.32	A	8.31	A
		Intersection	9.23	A	9.37	A
Projected 2035 (Medium Growth)	6.44%	Northbound	58.10	F	22.36	C
		Southbound	26.04	D	105.33	F
		Eastbound	17.28	C	13.09	B
		Westbound	11.52	B	10.86	B
		Intersection	41.28	E	71.73	F
Projected 2035 (High Growth)	7.60%	Northbound	174.39	F	37.59	E
		Southbound	49.40	E	263.61	F
		Eastbound	21.31	C	14.34	B
		Westbound	12.06	B	11.34	B
		Intersection	109.60	F	172.16	F

The results of the MT 201 / MT 200 intersection level of service analysis suggest that the current AWSC traffic control and the existing lane configuration at the intersection are appropriate at this time and will continue to operate well into the future under the low/no growth scenario. However if traffic volume growth elevates to a medium to high level, the AWSC will not serve the traffic demand under the current AWSC traffic control and the existing lane configuration. Specifically, northbound and southbound travel movements will experience unacceptable levels of service under the medium and high growth scenarios.

2.2.3. Origin-Destination Study

The *Draft Existing and Projected Conditions Report* for the Fairview Corridor Study summarizes an origin-destination analysis performed by IDAX Data Solutions to help assess truck traffic patterns within the Fairview area. This analysis was conducted for a 3-day period in March 2015 and is based on data collected with tube counters, cameras, and license plate readers at locations south of Fairview on MT 200, west of town on MT 201, and north and east of the community on ND 58 and ND 200.

Data within the peak period of interest was processed to produce several graphics (see **Figures 6** and **7**) illustrating truck movement trends. The numbered circles (3, 4, 5, and 6) shown on the figures represent origin/destination points used for the study. Numbered circle 5 corresponds to an origin/destination point at approximately RP 68.9 on MT 201 west of Fairview. According to the draft report, the arrows are color-coded to indicate the path of travel for trips leaving from the origin points and arriving at the destination points. Numbers and percentages next to each arrow indicate truck trips for each origin point, with trips of the same color adding up to 100% of trips from a single origin point. For purposes of this Existing and Projected Conditions Report, the yellow and orange colored paths shown on **Figures 6** and **7** are of interest.

The study indicated the following for the origin/destination point located on MT 201:

March 3, 2015 AM Peak Period (6:00 to 8:30 AM)

- Strong eastward movement (24, or 56% of AM trips from Point 5 to Point 4)
- Secondary northward movement (17, or 39% of AM trips from Point 5 to Point 3)

March 3, 2015 PM Peak Period (3:00 to 6:30 PM)

- Mostly northward movement (22, or 63% of PM trips from Point 5 to Point 3)
- Secondary eastward movement (10, or 28% of PM trips from Point 5 to Point 4)

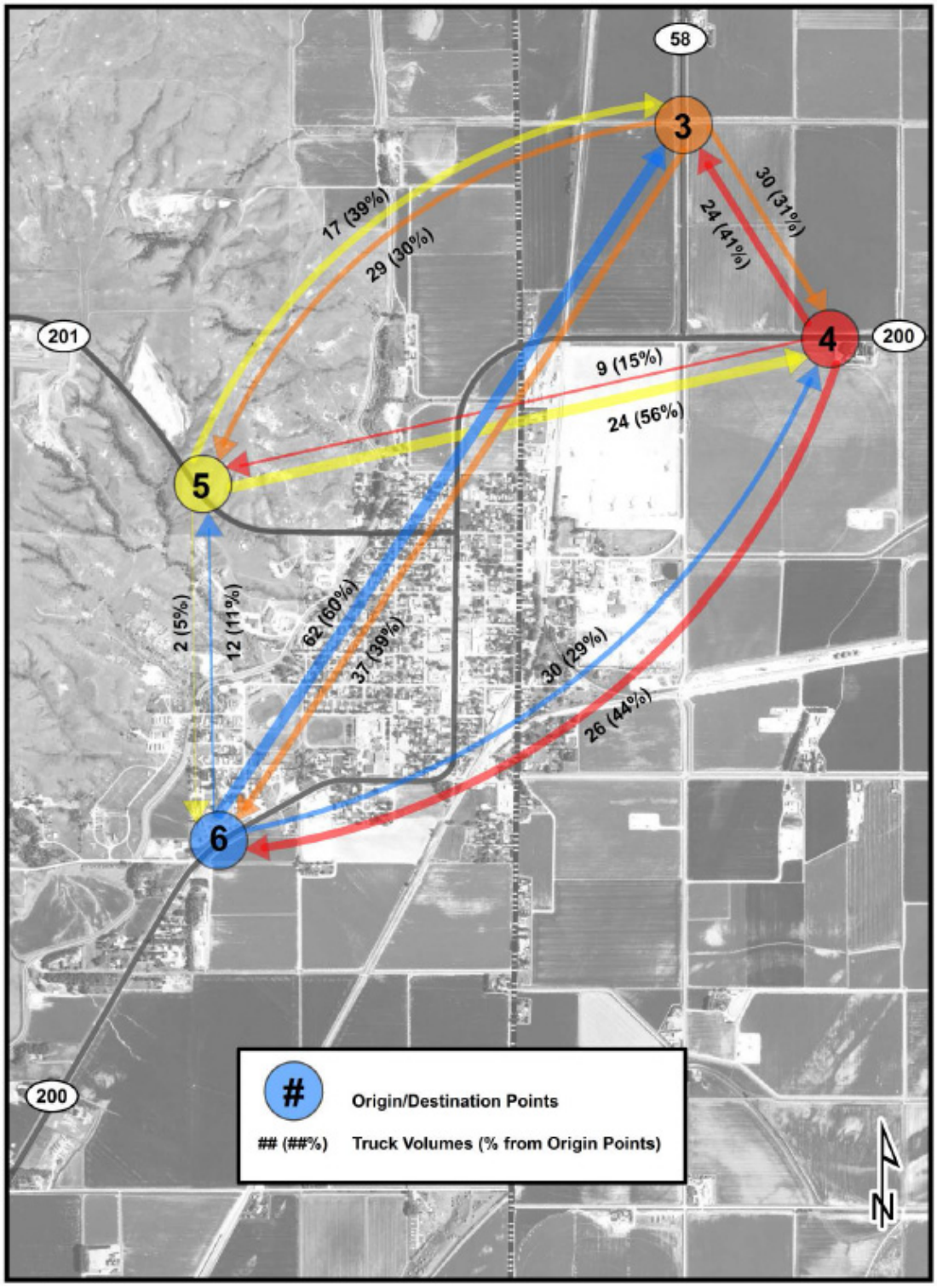

Figure 6: AM Peak Period Origin-Destination Summary[8]

[8] *Draft Existing and Projected Conditions Report, Fairview Corridor Planning Study*, Dowl, Page 24, June 2015.

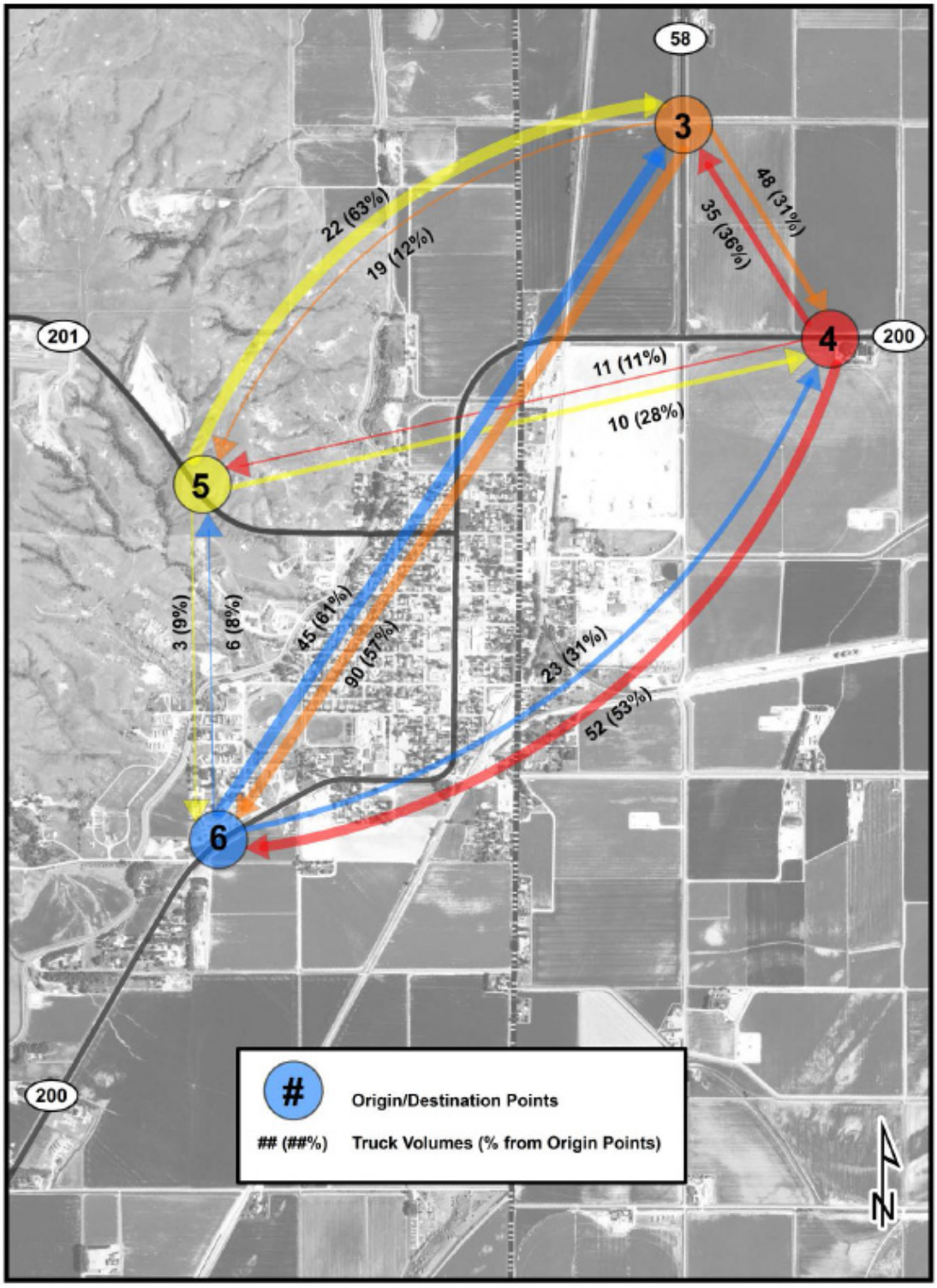

Figure 7: PM Peak Period Origin-Destination Summary[9]

[9] *Draft Existing and Projected Conditions Report, Fairview Corridor Planning Study*, Dowl, Page 25, June 2015.

2.2.4. Vehicle Classifications on MT 201

The data compiled by IDAX Data Solutions for the origin/destination study in March 2015 included vehicle classifications by FHWA vehicle classes. The data for the monitored location on MT 201 showed the following vehicle classifications for all eastbound and westbound traffic during the March 3-5, 2015 period:

- Classes 1 and 2 (Motorcycles and Passenger Cars) – 30.1%
- Class 3 (Other Two-Axle, Four Tire Single Unit Vehicles) – 25.7%
- Class 4 (Buses) – 1.3%
- Classes 5 through 13 (Trucks/Trailers) - 42.9%

The percentages of vehicles in Classes 5 through 13 typically corresponds to the % Trucks (T) value presented in MDT's traffic data for its projects. MDT's August 15, 2014 Preliminary Field Review Report shows a "T" value of 23.5% for MT 201 between RP 63.6± and RP 69.52.

2.2.5. Posted Speed Limits

Speed zones within the MT 201 study corridor were identified by reviewing recent *Google* and *Bing* aerial and on-the-ground imagery. Aerial photography was at sufficient resolution and clarity to identify the approximate locations of speed limit signing along the roadway. RP locations for signs were calculated using distance measurements in *Google Earth* and known locations for MDT RPs within the study corridor. **Table 13** shows the locations of the designated speed zones and the statutory speed limits, by reference post range.

Table 13: Statutory and Special Speed Zones

Eastbound RP			Westbound RP		
From	To	Posted Speed Limit	From	To	Posted Speed Limit
67.4±	68.17	70 MPH/65 MPH (Night)	69.47	69.14	25 MPH
68.17	69.14	60 MPH/50 MPH Trucks	69.14	68.80	40 MPH
69.14	69.31	40 MPH	68.80	68.17	60 MPH/50 MPH Trucks
69.31	69.52	25 MPH	68.17	67.4±	70 MPH/65 MPH (Night)

Source: Google Earth and Bing Aerial Photography Review

2.2.6. Passing/No Passing Zones

Passing opportunities are provided along the corridor in areas where roadway geometrics allow. Passing areas are designated by broken yellow center pavement markings. No passing zones are typically established in areas where there is insufficient passing sight distance or near public approaches. The following information summarizes the guidelines for no-passing zones as contained in the MDT *Road Traffic Engineering Manual*[10]:

- For determining a no-passing zone, the distance along a driver's line-of-sight is measured from a 3.5-foot height of eye to a 3.5-foot height of object.
- For 2-lane rural highways on the entire rural STP system, the no-passing zone design speed will be 60 mph.
- The minimum passing sight distance required for a 60-mph no-passing zone design speed is 1,000 feet.

[10] MDT *Traffic Engineering Manual*, Section 19.3, November 2007.

- The minimum length for a no-passing zone is 500 feet.
- If the length between successive no-passing zones in the same direction of travel is less than 1,000 feet, then the gap between the no-passing zones should be closed.
- A no-passing zone should be marked in advance of intersections at a minimum distance of 500 feet.

Table 14 shows the locations of passing zones along the MT 201 corridor as documented through a review of recent aerial imagery and *Google Street View* and *Bing Streetside* imagery. RP locations for passing zones were calculated using distance measurements in *Google Earth* and known locations for MDT RPs within the study corridor. Passing opportunities for westbound traffic are restricted at the western edge of the study corridor. An unrestricted passing zone approximately 2,400 feet long exists west of RP 68 in the rural segment of the corridor. Passing opportunities for eastbound traffic are restricted in the vicinity of the Fairview Airport as the alignment of MT 201 transitions from a tangent section into a curve with a 6 percent grade. Passing is prohibited for both eastbound and westbound traffic from RP 68.4 (top of the grade west of Fairview) to MT 200/Ellery Avenue.

There are no breaks in centerline striping on MT 201 for any roads or local streets in the study corridor.

Table 14: Passing and No Passing Zones

RP		Eastbound	RP		Westbound
From	To		From	To	
67.4±	67.54	Passing Allowed	69.52	68.40	Passing Prohibited
67.54	67.99	Passing Allowed	68.40	67.99	Passing Allowed
67.99	69.52	Passing Prohibited	67.99	67.54	Passing Allowed
			67.54	67.4±	Passing Prohibited

Source: Google Earth and Bing Aerial Photography Review

2.3. Geometric Conditions

2.3.1. Geometric Design Criteria

The MDT *Road Design Manual* specifies general design principles and controls that determine the overall operational characteristics of the roadway and enhance its aesthetic appearance. The geometric design criteria for the study corridor are based on the current MDT design criteria for "Rural Minor Arterials (Non-National Highway System – Primary) Highway." Arterial highways are characterized by a capacity to move relatively large volumes of traffic quickly and a restricted access point function to serve adjoining properties. In both rural and urban areas, arterials provide the highest traffic volumes and the greatest trip lengths. **Table 15** lists the current design standards applicable to MT 201 within the study corridor.

The design speed for a rural minor arterial roadway ranges between 45 and 60 mph, depending on terrain. MDT's *Road Design Manual* contains the following definitions for each terrain type:

- *Level Terrain* – The available stopping sight distances are generally long or can be made to be so without construction difficulty or major expense.
- *Rolling Terrain* – The natural slopes consistently fall below and rise above the roadway and occasional steep slopes offer some restriction to horizontal and vertical alignment.
- *Mountainous Terrain* – Longitudinal and traverse changes in elevation are abrupt and extensive grading is frequently needed to obtain acceptable alignments.

Based on these definitions, most of the study area appears to be in rolling terrain with some areas of level terrain occurring within the town of Fairview. MDT has established that a rolling terrain determination is appropriate for the study corridor. For this study, areas not meeting MDT's minimum design standards for rolling terrain were considered areas of concern.

Table 15: Geometric Design Criteria for Rural Minor Arterials (Non-NHS — Primary)

Design Element			Design Criteria		
Design Controls	Design Forecast Year (Geometrics)		20 Years		
	Design Speed*	Level	60 mph		
		Rolling	55 mph		
		Mountainous	45 mph		
	Level of Service*		Level/Rolling: B Mountainous: C		
Roadway Elements	Travel Lane Width*		12'		
	Shoulder Width*		Varies		
	Cross Slope	Travel Lane *	2%		
		Shoulder	2%		
	Median Width		Varies		
Earth Cut Sections	Ditch	Inslope	6:1 (Width: 10')		
		Width	10' Min.		
		Slope	20:1 towards back slope		
	Back Slope; Cut Depth at Slope Stake	0' - 5'	5:1		
		5' - 10'	Level/Rolling: 4:1; Mountainous: 3:1		
		10' - 15'	Level/Rolling: 3:1; Mountainous: 2:1		
		15' - 20'	Level/Rolling: 2:1; Mountainous: 1.5:1		
		> 20'	1.5:1		
Earth Fill Slopes	Fill Height at Slope Stake	0' - 10'	6:1		
		10' - 20'	4:1		
		20' - 30'	3:1		
		> 30'	2:1		
Alignment Elements	DESIGN SPEED		45 mph	55 mph	60 mph
	Stopping Sight Distance *		360'	495'	570'
	Passing Sight Distance		1625'	1885'	2135'
	Minimum Radius (e=8.0%) *		590'	960'	1200'
	Superelevation Rate *		e_{max} = 8.0%		
	Vertical Curvature (K-value) *	Crest	61	114	151
		Sag	79	115	136
	Maximum Grade*	Level	3%		
		Rolling	4%		
		Mountainous	7%		
	Minimum Vertical Clearance *		17.0'		

Source: MDT Road Design Manual, Chapter 12, Figure 12-4, "Geometric Design Criteria for Rural Minor Arterials (Non-NHS—Primary), 2008

**Controlling design criteria (see Section 8.8 of the MDT Road Design Manual)*

The appropriate design speed for this Non-NHS Primary, rural minor arterial in rolling terrain is 55 mph. The posted speed, as established by State law, is 70 mph day/65 mph night and 60 mph day/55 mph night for trucks. There is a reduced speed area (40 mph) on the western edge of Fairview and a 25 mph posted speed limit for all traffic on MT 201 east of the Main Canal within the town of Fairview.

2.3.2. Horizontal Alignment

Elements comprising horizontal alignment include curvature, superelevation (i.e., the bank on the road), and sight distance. These horizontal alignment elements influence traffic operation and safety and are directly related to the design speed of the corridor. MDT's standards for horizontal curves are defined in terms of curve radius, and they vary based on design speed. For a 55-mph design speed (rolling terrain) the minimum recommended radius is 960 feet. The minimum recommended radius for a 60-mph design speed (rolling terrain) is 1,200 feet.

The existing horizontal alignment of MT 201 within the study corridor was analyzed based on a review of MDT as-built drawings and an evaluation with current MDT standards (refer to **Appendix C** for all geometric data analysis). Horizontal curve radii were determined from the design information presented on as-built drawings. Four horizontal curves exist within the MT 201 study corridor and all meet current MDT standards for at least a 55 mph design speed. Design information identifying the degree of superelevation was not shown on the as-built plans for any of the horizontal curves. The current roadway was constructed over the former roadway and as-built plans show only typical sections with a 2 percent crown on the roadway. Field surveying would be necessary to establish the degree of superelevation on horizontal curves in the study corridor.

Table 16 provides a summary of design information for each of the horizontal curves.

Table 16: Horizontal Curve Design Information

Curve PI Location (RP)	Radius (ft)	Length (ft)	Superelevation	Design Speed Met	Meets Standards?
67.40	1,910	1100.6	Unknown	60 mph	Yes
68.37	1,146	900.0	Unknown	55 mph	Yes
68.67	7,640	1633.3	Unknown	60 mph	Yes
69.00	1,146	1122.0	Unknown	55 mph	Yes

2.3.3. Vertical Alignment

Vertical alignment is a measure of elevation change of a roadway. The length and steepness of grades directly affect the operational characteristics of the roadway. The MDT *Road Design Manual* lists recommendations for vertical alignment elements such as grade, rate of vertical curvature (K-value), and stopping sight distance. Recommendations are made based on roadway classification and terrain type.

According to the *Road Design Manual*, the maximum allowable grades are 3 percent for level terrain and 4 percent for rolling terrain. For vertical curves, stopping sight distance and K-values are controlling design criteria. K-values are defined as a function of the length of the curve compared to the algebraic change in grade, which comprises either a sag or a crest vertical curve.

Table 17 provides design information for vertical curves within the study corridor. As done for horizontal curves, information about the vertical alignment of MT 201 was obtained from a review of as-built plans for MDT projects S 361(4) and S 327(2). The design information was then compared with current MDT design criteria to help identify variations from standards. The as-built plans generally provided vertical profile grades over most of the study corridor but the lengths of vertical curves were not shown for a segment of the study corridor. In that segment, curve lengths and profile grades were estimated from the scaled as-built drawings for MDT project S 327(2).

As the table shows, profile grades at three locations within the study corridor exceed the 4 percent maximum grade for rolling terrain determined applicable to this roadway. These excessive grades are all located west of Fairview between RP 68.42 and 69.35. The analysis also shows that numerous vertical curves in the study corridor do not meet acceptable rates of curvature for a 55 mph design speed.

Table 17: Vertical Curve Design Information

Locations (RP)		Curve Type	Estimated Length (ft)	Grade Back	Grade Ahead	K-value	Design Speed Met	Meets Standards?
From	To							
67.20	67.31	CREST	600	4.5%	-1.7%	95.5	45 mph	NO (2)
67.46	67.50	SAG	200	-1.7%	-0.3%	135.1	55 mph	YES
67.70	67.74	CREST	200	-0.3%	-0.5%	833.3	60 mph	YES
67.82	67.86	CREST	200	-0.5%	-1.4%	212.8	60 mph	YES
67.96	67.99	SAG	200	-1.4%	0.7%	92.6	45 mph	NO (2)
68.04	68.08	CREST	200	0.7%	-1.1%	109.9	45 mph	NO (2)
68.11	68.15	SAG	200	-1.1%	0.0%	181.8	60 mph	YES
68.23	68.27	SAG	200	0.0%	2.5%	80.0	45 mph	NO (2)
68.31	68.42	CREST	600	2.5%	-6.6%	65.9	45 mph	NO (1, 2)
68.71	68.78	SAG	400	-6.6%	1.3%	50.6	< 45 mph	NO (2)
68.81	69.85	CREST	200	1.3%	-5.3%	30.3	< 45 mph	NO (1, 2)
68.98	69.05	SAG	400	-5.3%	0.0%	75.5	< 45 mph	NO (2)
69.10	69.14	CREST	200	0.0%	-4.8%	41.7	< 45 mph	NO (1, 2)
69.36	69.39	SAG	200	-4.8%	-2.5%	87.0	45 mph	NO (2)
69.44	69.48	SAG	200	-2.5%	-0.6%	105.3	45 mph	NO (2)

Notes:

(1) Profile Grade exceeds 4% maximum for rolling terrain
(2) Does not meet current standards for rolling terrain based on rate of curvature (K-value)

2.3.4. Roadside Clear Zone

The roadside clear zone, starting at the edge of the traveled way, is the total roadside border area available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a recovery area. The desired clear zone width varies depending on traffic volumes, speeds and roadside geometry. Clear zones are evaluated individually based on the roadside cross section. According to MDT, clear zone should be attained by removing or shielding obstacles, if costs are reasonable.

In certain instances within the study area, it may be impractical to protect or remove certain obstacles within the clear zone. As improvement options develop, roadside clear zones should be designated, to a practical extent, to meet current MDT design standards.

2.4. Safety

The MDT Traffic and Safety Bureau completed a safety analysis for a portion of MT 201 including the study corridor during 2014. The safety analysis utilized historic crash data for MT 201 between RP 63.6 and 69.5 for a 10-year period beginning January 1, 2004 and ending on December 31, 2013. A further review of MDT's data showed 26 crashes were reported within the study corridor (RP 67.4 to RP 69.5) during the analysis period. These crashes included one fatal crash and 13 injury crashes. Of the crashes that occurred on this section of MT 201, 5 involved a commercial vehicle. Ninety-six percent of the

reported crashes in the study corridor during the period were non-junction related. The following subsections provide more details from the analysis of the crash data for MT 201.

2.4.1. Crash Locations

Crash data for the period of record were evaluated based on the Reference Point locations associated with each report. The crash location data suggests crash clusters in the curve at the beginning of the study corridor at RP 67.4 and the curve at RP 68.4 (just east of the Fairview Airport). Eleven crashes occurred at the west end of the study corridor between RP 67.4 and RP 67.6. These crashes included 7 rollovers, three fixed object collisions, and one rear end collision. A fatal crash in which a motorcyclist left the roadway occurred at RP 67.42 near the west end of the study corridor.

The six crashes that occurred in the vicinity of RP 68.4 included 3 rollovers, 2 fixed object collisions, and a sideswipe collision between opposing vehicles. There were no recorded crashes on MT 201 east of RP 68.7 during the 10-year analysis period. **Figure 8** shows 17 unique crash locations for the 26 crashes of record.

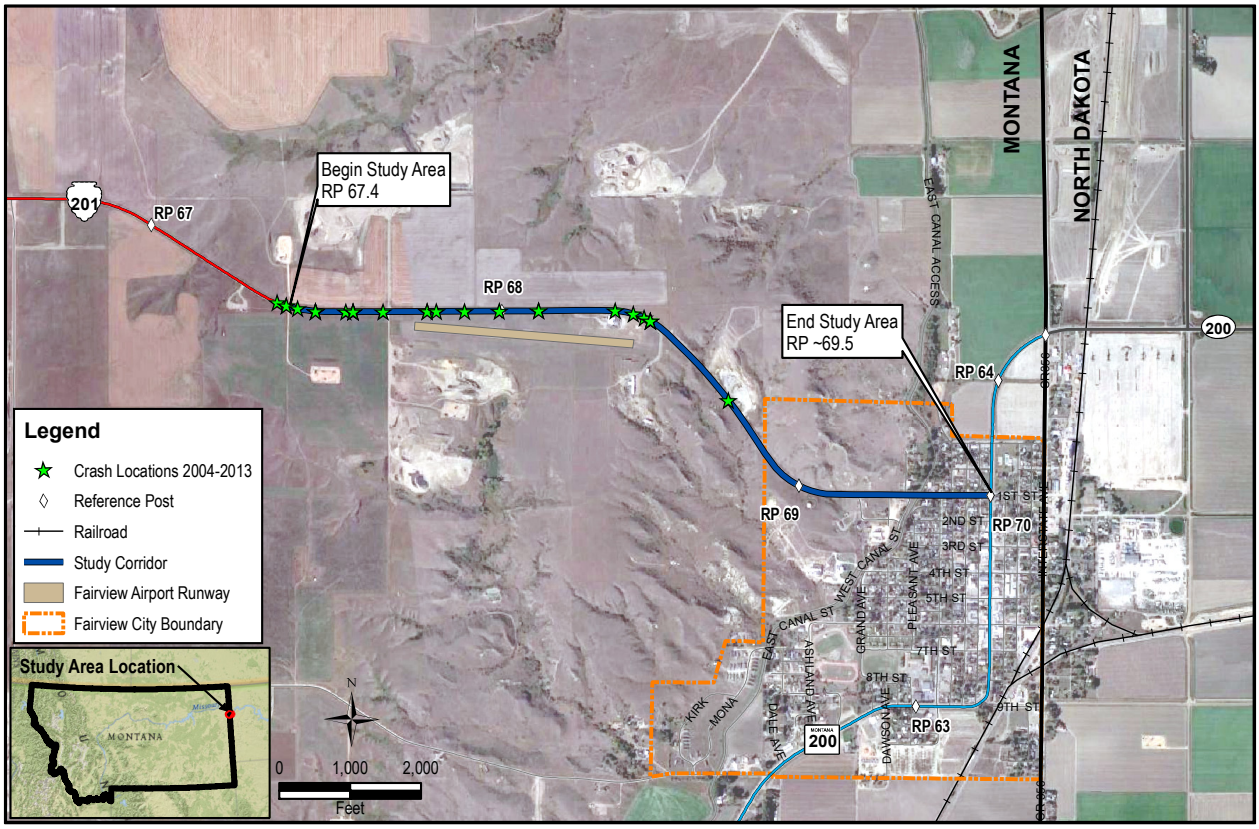

Figure 8: MT 201 Crash Locations (January 1, 2004 – December 31, 2013)

2.4.2. Crash Type

The crash type, or manner of crash, was reported for each crash. Crash types can be grouped into two categories, single vehicle and multi-vehicle crashes. Single vehicle crashes involve only one vehicle and multi-vehicle crashes are crashes that involve two or more vehicles. Within the study corridor, single vehicle crashes accounted for 88 percent of all crashes. Only 3 of the 26 recorded crashes in the corridor were multi-vehicle collisions. The most common single vehicle crash types were roll overs and fixed object collisions, with these crash types accounting for 96 percent (48 percent each) of all reported

crashes. The multi-vehicle crashes in the corridor included 2 sideswipe collisions and a rear end collision. One crash involving a pedestrian was also reported.

2.4.3. Temporal Analysis

Each crash record contains the date and time of the crash. The data was inspected to determine if any temporal patterns could be identified. During the 10-year analysis period, the year with the most crashes in the study corridor was 2013 when 7 crashes were reported. Four crashes each were reported in 2004 and 2012 and no crashes were reported within the study corridor during 2007 and 2010.

A review of the time-of-day in which crashes occurred showed a concentration of crashes between 6:00 and 9:00 AM (7 crashes or 27 percent of all crashes) and 7:00 and 9:00 PM (6 crashes or 23 percent of all crashes) during the analysis period.

Both the day of the week and the month of the year in which crashes occurred were analyzed. Analysis of the day of the week data showed that the most common days for crashes were Saturday (7 crashes), Wednesday (6 crashes), and Sunday (5 crashes) during the analysis period. Data regarding the month of the year in which crashes occurred showed that November had the most crashes, each accounting for 15 percent of the total crashes. No crashes were recorded in the study corridor during the month of April during the 10-year analysis period. Crashes during the winter months, November through February, accounted for a combined 46 percent of all crashes during the analysis period.

2.4.4. Crash Severity

Crash severity is reported based on the worst injury that occurred during the crash. For example, if there are three individuals involved in a crash and two are uninjured and the third has a non-incapacitating evident injury, the crash would be reported as a non-incapacitating injury crash. Crash severity can be defined as non-injury, property damage only (PDO); possible injury; non-incapacitating, evident injury, incapacitating injury; or fatal injury. An incapacitating injury is defined as an injury, other than a fatality, which prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before injury.

During the 10-year analysis period, there was one reported fatal injury crash, 5 incapacitating injury crashes, 5 non-incapacitating injury crashes, 3 crashes with possible injuries, and 12 PDO crashes within the MT 201 study corridor.

2.4.5. Driver's Age and Gender

Reported with each crash is the age and gender of each individual involved in the crash. Additionally, drivers and passengers are identified separately. A total of 33 drivers were involved in crashes within the study area during the crash analysis time period. Males accounted for 88 percent of all drivers in the reported crashes. With respect to the driver's age, the 16 to 20 years of age group accounted for 24 percent of drivers involved in crashes during the 10 years analyzed. Approximatey half of all drivers involved in crashes in the study corridor during the analysis period were less than 30 years of age.

2.4.6. Environmental Conditions

Three environmental conditions are reported on each crash record: weather, road, and lighting conditions. It was found that 65 percent of crashes occurred under clear weather conditions, 69 percent occurred on dry roads, and 58 percent occurred during darkness or low light (dawn or dusk) conditions.

2.4.7. Crash Rates

Table 18 provides a comparison of the crash rate, crash severity index, and crash severity rate within the study corridor. Crash rates are defined as the number of crashes per million vehicle miles of travel (for road segments). The crash severity index is the ratio of the sum of the level of crash degree to the total number of crashes. Crash severity rate is determined by multiplying the crash rate and the crash severity index.

Table 18: Crash Rates for the MT 201 Study Corridor

Number of Crashes by Type			AADT 10-year Average	Crash Rate	Severity Index	Severity Rate
Fatal or Incapacitating	Injury	PDO				
6	8	12	1190	2.82	4.15	11.70

2.4.8. Level of Service of Safety (LOSS)

MDT's safety analysis for the Fairview-West project established the Level of Service of Safety (LOSS) for MT 201 between RP 63.6 and RP 69.5. LOSS reflects how the roadway segment is performing in regard to its expected crash frequency and severity for a specific range of AADT volumes. LOSS provides a comparison of crash frequency and severity with the expected norms for roadways with similar operational levels and conditions. The LOSS is ranked from LOSS I (indicating a low potential for crash reduction) to LOSS IV (suggesting a high potential for crash reduction).

MDT found MT 201 within the Fairview-West project area is performing at LOSS IV for all crashes although one segment (RP 63.6 to RP 66.5) is performing at LOS III (indicating a moderate to high potential for crash reduction). MDT's pattern recognition analysis, considering a minimum of 5 crashes and a cumulative probability of 99 percent, identified the following crash patterns for the entire Fairview-West project:

- Crashes involving injuries;
- Off road right crashes;
- Overturning crashes;
- Embankment collisions;
- Fixed object collisions; and
- Driver preoccupied crashes.

3.0 ENVIRONMENTAL SETTING

This section provides a summary of the Environmental Scan prepared for this project in September 2015 by Robert Peccia and Associates (RPA) for MDT. The primary objective of the Environmental Scan is to provide a planning-level overview of resources and to determine potential constraints and opportunities within the study area. As a planning-level scan, the information was obtained from various publicly available reports, websites, and other documentation. The scan is not a detailed environmental investigation. Please refer to the Environmental Scan for more detailed information.

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

3.1. Physical Environment

The following subsections present an overview of items related to the physical environment.

3.1.1. Soil Resources and Prime Farmland

Information obtained on soils is used to determine the presence of prime and unique farmland in the study area to demonstrate compliance with the Farmland Protection Policy Act (FPPA). Farmland includes prime farmland, some prime if irrigated farmland, unique farmland, and farmland (other than prime or unique farmland) that is of statewide or local 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 that has been determined to be important for the production of food, feed, fiber, forage, and oilseed crops in Montana.

Soil surveys of the study corridor are available from the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). NRCS soil mapping shows MT 201 crosses areas designated as prime farmland if irrigated and as farmland of statewide importance. Soils meeting these designations exists along both sides of the highway between approximately RP 67.4 and to RP 68.5, as well as along the roadway within the town of Fairview. Developed lands within Fairview a not subject to the FPPA.

3.1.2. Geologic Resources

Information on the geology and seismicity in the Fairview area was obtained 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 steeper slopes to the west of Fairview are made up of fine- to medium-grained sandstone and thinner interbeds of siltstone, mudstone and clay. Further west, MT 201 crosses areas of glacial till characterized by a mixture of clay, silt, sand, and gravel with cobbles and boulders. Numerous gravel pits have been developed in areas north and south of MT 201 in the vicinity of the Fairview airport.

Geotechnical investigations would be required for any future realignment and design for MT 201 to determine potential stability, erosion, and settlement concerns posed by surface geology and soil conditions. Part of this detailed analysis may involve taking advance borings to evaluate soil characteristics at specified locations. This is standard procedure for most MDT road projects. The design of any improvements should consider specific requirements that come from the detailed geotechnical analysis.

3.1.3. Surface Waters

Topographic maps and GIS data were reviewed to identify the location of surface water bodies within the study corridor. The hilly and rolling terrain in the western portion of the scan area is dissected by numerous intermittent streams and drainages. The study corridor is generally located within the Yellowstone River-Fairview Subwatershed which drains about 225 square miles of the larger Lower Yellowstone Watershed (HUC #10100004). There are no surface waters in the MT 201 study corridor which are considered impaired on the current 303(d) List maintained by the Montana Department of Environmental Quality (MDEQ).

The only notable surface water feature in the study corridor is the Main Canal which flows south to north and is crossed by MT 201 at RP 69.35 at the west edge of Fairview. The 72-mile-long Main Canal is associated with the Bureau of Reclamation's Lower Yellowstone Project originally built in the late 1900s.

The Main Canal and most of its associated lateral system normally transports irrigation from May 1 through October 1.

Effects on intermittent drainages and the Main Canal will have to be identified and coordinated with applicable agencies during any future project design. Permitting may be required for improvement options that affect these water features. Impacts should be avoided and minimized to the maximum extent practicable.

3.1.4. Groundwater Resources

The Lower Yellowstone Valley is underlain by gravelly alluvial formations that represent valuable groundwater resources. As of May 18, 2015, records maintained by the Groundwater Information Center (GWIC) at the Montana Bureau of Mines and Geology show there are 4,500 wells on record in Richland County with about 60 percent of the wells drilled to depths of less than 100 feet. The most common uses for wells drilled in the county are for stock watering and domestic purposes.

The Town of Fairview relies on two wells as domestic water sources and has installed a distribution system to serve all developed areas within the town limits except for a few blocks south of town. Water for the municipal system is stored in two above ground tanks—one of which is located about 200 feet south of MT 201 near RP 69.

3.1.5. Wetlands

The U.S. Army Corps of Engineers defines wetlands as those areas that are inundated or saturated by surface or groundwater 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.

National Wetland Inventory (NWI) mapping shows riparian forested shrub wetlands exist along portions of the Main Canal within the MT 201 study corridor. If a project is advanced, a new wetland impact evaluation must be conducted during the project development process. This evaluation would include a formal delineation of potentially affected wetlands sites, development of site data forms, wetland classification and functional assessment, and the identification of potential impacts to wetlands sites. Wetland jurisdictional determinations will also need to be done during the project development process.

3.1.6. Floodplains

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.

The Federal Emergency Management Agency (FEMA) has developed maps showing flood zones according to varying levels of risk as part of the National Flood Insurance Program. The agency's Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps are used to help assess the risk from flooding by floodplains and flood hazard areas. According to these maps, a delineated 100-year floodplain exists in the southern part of the town of Fairview but there are no delineated floodplains within the MT 201 study corridor within the community. Rural portions of the study corridor are designated as "Zone D" meaning flood hazards have not been determined.

3.1.7. Hazardous Materials

Information about the existence of 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 in the study corridor was obtained from the Montana Natural Resource Information System (NRIS) database and from MDEQ's online interactive website and databases. This review showed no notable hazardous materials concerns within the MT 201 study corridor.

Horizontal directional well paths for several oil wells extend beneath MT 201 at multiple locations within the study corridor; however, these well paths are positioned deep beneath the ground surface and do not affect the operation or maintenance of the highway. Several open cut permits for the mining and processing of gravel materials also exist on lands adjoining the MT 201 study corridor. If improvements are proposed in the vicinity of area gravel pit sites and have the potential to affect project design or construction, coordination with affected pit owners and MDEQ would be necessary.

3.1.8. Air Quality

The USEPA designates communities that do not meet National Ambient Air Quality Standards (NAAQS) as "non-attainment areas." States are then required to develop plans to control source emissions and ensure future attainment of NAAQS. The town of Fairview and all of Richland County are considered attainment areas for all NAAQS pollutants. There are no nearby non-attainment areas. As a result, special design considerations are likely not required in future project design to accommodate NAAQS non-attainment issues.

Depending on the scope of the project under consideration along this corridor, an evaluation of mobile source air toxics (MSATs) may be required to determine the potential for impacts. MSATs are compounds emitted from highway vehicles and off-road equipment that are known or suspected to cause cancer or other serious health and environmental effects.

3.2. Noise

Highway projects can cause noise levels to increase for affected receivers, during project construction and/or from operation of the highway facility. Should a project be advanced with federal or state funds, it will be necessary to establish whether the project is a "Type I Project" as defined in 23 CFR 772.5(h). Type I projects involve:

- construction of a highway on new location;
- the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes; or
- the potential for creating a traffic noise impact (e.g., idling vehicles at rest areas, weigh stations).

A detailed noise analysis would be required for a Type I project. The noise analysis includes measuring ambient noise levels at selected receivers and modeling design year noise levels using projected traffic volumes. Residences adjoining MT 201 in Fairview and Sharbano Park are sensitive noise receptors within the study corridor area which may need evaluation during project development. Noise abatement measures would be considered for the project if noise levels *approach* or *substantially exceed* the FHWA's Noise Abatement Criteria. If traffic noise impacts are shown to exist then feasible and reasonable noise abatement methods to reduce traffic noise impacts are considered. Noise abatement measures, should they be deemed necessary, could increase the costs of a future roadway improvement project.

Construction activities associated with a future project may result in localized and temporary noise impacts. These impacts can be minimized by using standard MDT specifications for the control of noise sources during construction.

3.3. Visual Resources

The visual resources of an area include the features of its landforms, vegetation, water surfaces and cultural modifications (physical changes caused by human activities) that give the landscape its visual character and aesthetic qualities. Landscape features, natural appearing or otherwise, form the overall impression of an area. Visual resources are typically assessed based on 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.

The MT 201 study corridor encompasses a wide variety of settings including irrigated and dryland agricultural fields, roadway corridors, residential and commercial areas within Fairview, scattered industrial developments (oil well installations and gravel mining operations), agricultural lands, and prairie habitat.

Should a project be advanced, the proposed project will need to be reviewed to assess its potential for visual quality impacts. Actions that may have visual impacts include projects on new location or that involve expansion, realignment or other changes that could alter the character of an existing landscape or move the roadway closer to residential areas, parks and recreation areas, historic or other culturally important resources.

3.4. Biological Environment

The following information applies to natural resources within the study area and reflects a baseline natural resource condition. Depending on the level of detail available through the high-level baseline scan, some of the information is presented at the county level, some at the study-area level, and some at the corridor level.

3.4.1. General Wildlife Resources

The Montana Natural Heritage Program indicates Richland County is home to 140 species of birds, 59 fish species, 45 mammal species, 10 reptile species, and 5 amphibian species. The most common forms of wildlife found in the Fairview area are species tolerant of some level of human disturbance as well as species that make use of urbanized habitat within the community. These include mule and white-tailed deer, antelope, small mammals (like coyote, red fox, squirrels, raccoons, skunks, porcupine, beaver, bobcats, muskrats, and mice), several amphibians and reptiles (frogs, turtles, snakes), several waterfowl species (mallards and wood ducks), pheasants, and a wide variety of other birds.

The Migratory Bird Treaty Act (MBTA) and Executive Order 13186 “Responsibilities of Federal Agencies to Protect Migratory Birds” provide protection for migratory bird species including protection of their nests and eggs. Under the MBTA, 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 an occupied (with birds or eggs) nest 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 swallows may be prohibited under the MBTA.

According to the Information, Planning, and Conservation System (IPAC) Trust Resources List for Richland County obtained from the US Fish and Wildlife Service (USFWS) website, 25 migratory birds of conservation concern (including bald and golden eagles and several other raptors) occur within the Fairview area. No bald eagles nests are located in the MT 201 study corridor and the nearest known bald eagle nest is some 10 miles southeast of Fairview along the Yellowstone River. However, bald and

golden eagles could periodically be seen in the Fairview area during foraging activities or general movements through the area.

There are no streams in the MT 201 study corridor that provide habitat for fish.

3.4.2. Threatened and Endangered Wildlife Species

The Endangered Species Act of 1973, as amended (ESA) protects listed threatened, endangered, proposed, and candidate plant and animal species and their critical habitats. A species listed as "endangered" is one in danger of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Proposed species are those species that are proposed in the Federal Register to be listed under the ESA. Candidate species are species for which the USFWS has sufficient information on biological status and threats to propose to list them as threatened or endangered. *Critical habitat* is defined as a specific geographic area that is essential for the conservation of a threatened or endangered species and that may require special management considerations or protection.

According to the USFWS, there are currently 6 listed species (as of October 2015) potentially occurring in Richland County:

- Pallid Sturgeon (Endangered)
- Piping Plover (Threatened, Critical Habitat Designated)
- Interior Least Term (Endangered)
- Sprague's Pipit (Candidate)
- Northern Long-eared Bat (Candidate)
- Whooping Crane (Endangered)

Based on habitat requirements, whooping cranes, Northern Long-eared bats, and Sprague's pipits are listed species that could potentially occur in the MT 201 study corridor.

The Montana Natural Heritage Program (MNHP) was contacted in April 2015 to provide file search results for occurrences of listed species (and animal species of concern) within the Fairview area including lands within the MT 201 study corridor. MNHP's species occurrence map showed whooping cranes could occur throughout the scan area. MNHP did not identify occurrences of Sprague's pipit or the Northern Long-eared bat within the study corridor.

As the federal status of protected species changes over time, reevaluation of the listing status and a review for the potential occurrence of these species in the project area should take place before issuing a determination of effect relative to potential project impacts. If a project moves forward from this study, completion of an evaluation of potential effects on any of the species listed above has to occur during the project development process.

3.4.3. Montana Animal Species of Concern

Montana Species of Concern (SOCs) are 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 an 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 to address conservation needs proactively.

A search of the MNHP species of special concern database, revealed only one species—whooping cranes—that has the potential to occur in the MT 201 study corridor based on past occurrence data. Whooping cranes have a state assigned status of S1M and are federally listed under the ESA. This designation means whooping cranes are a migratory species (M) of highest risk and greatest concern (S1).

A thorough field investigation for the presence and extent of the species should be conducted if improvement options are forwarded from this study. If present, special conditions that apply to the project design and/or during construction such as timing restrictions should be considered to avoid or minimize impacts to these species.

3.4.4. Crucial Areas Planning System

The MFWP provides a web-based tool to help identify and evaluate the fish, wildlife and recreational resources of Montana. The Crucial Areas Planning System (CAPS) is a mapping service intended to provide useful and non-regulatory information about highly valued fish and wildlife resources and recreation areas during the early planning stages of projects. MFWP's website provides information consistent with that available from the Western States' Crucial Habitat Assessment Tool (CHAT) website maintained by the Western Association of Fish and Wildlife Agencies (WAFWA). This helps ensure preliminary landscape scale planning information is available on a regional level for the western U.S.

CAPS provides general recommendations and recommendations specific to transportation projects for both terrestrial and aquatic species and habitat. Lands within the MT 201 study corridor generally rank low for their landscape connectivity values, terrestrial game quality, and occurrence of species of economic and recreational importance. These recommendations of the CAPS system can have a generic application to possible project locations moving forward from the study. Coordination with the MFWP wildlife biologist should occur during project development.

3.4.5. Vegetation

According to the MNHP, several ecological systems associated with the Northwestern Great Plains ecoregion including Great Plains Sand Prairie, Great Plains Wooded Draw and Ravine, and Great Plains Mixed Prairie grasslands occur within the study corridor. Vegetation commonly seen within Great Plains Sand Prairie and Mixed grass Prairie systems include needle and thread, bluestem, sedges, several species of wheatgrass, blue grama, and prairie junegrass. Wooded Draw and Ravine systems are typically associated with highly intermittent or ephemeral streams like those found in the hills west of Fairview. Vegetation in Wooded Draw and Ravine systems is dominated by deciduous species like green ash or chokecherry.

Vegetation in the developed area of Fairview consists of ornamental trees and shrubs, lawns, and flowerbeds associated with residential landscapes.

The online database of threatened, endangered, proposed, and candidate species maintained by the USFWS did not identify any federally listed plants in Richland County. A MNHP file search did not identify any plant species of concern in the Fairview area.

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.

3.4.6. Noxious Weeds

Noxious weeds can degrade native vegetative communities, damage riparian areas, compete with native plants, create fire hazards, degrade agricultural and recreational lands, pose threats to the viability of livestock, humans, and wildlife, and are expensive to manage. Areas with a history of disturbance, like highway rights-of-way, are at particular risk of weed encroachment.

The Montana Invaders Database lists occurrences of 7 noxious weeds and 55 exotic species within Richland County since 1875. Some of these species may be present within the MT 201 study corridor; however, field work was not conducted to identify noxious or exotic species along the highway. The Richland County Weed Management Plan identifies leafy spurge, spotted knapweed, Canada thistle, and saltcedar as priorities for weed management.

If a project is forwarded, field surveys for noxious weeds within the project area will need to be completed during the project development process. Coordination with the Richland County Weed District Supervisor should begin during project development and continue through design activities to establish specific guidance for noxious weed control at the project site.

3.5. Social and Cultural Environment

The following subsections present an overview of the social and cultural environment within the MT 201 study corridor and the general Fairview area.

3.5.1. 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. Federal Highway Administration 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 U. S. Civil Rights Act of 1964, as amended (USC 2000(d)) and Executive Order 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.

The 2010 Census estimated the populations of Richland County and the town of Fairview to be 9,746 and 840 residents, respectively. Over the 2000-2010 period, the population in Richland County increased by 0.8 percent but the town of Fairview's population grew by 18.5 percent. US Census Bureau estimates the current (as of July 1, 2014) population of Richland County to be 11,576 and of the town of Fairview to be 964. These estimates suggest the County's population has increased by 18.7 percent since 2010 and Fairview's population has grown by about 16 percent since the last census.

County level population projections are available from Montana Department of Commerce Census & Economic Information Center (CEIC). The CEIC projections were developed by Regional Economic Models, Inc. (eREMI) and provide complete annual demographic forecasts through 2060 for the State of Montana and each county. The MDT Planning Division further refined the eREMI projections for a 16

county region in northeastern Montana to better estimate potential population growth under two scenarios for future oil and gas development in the region. The eREMI baseline projections show that Richland County's population may approach 13,400 residents (an increase of about 19 percent) by the year 2035. MDT's projections show the county's population by 2035 could approach 15,600 and 16,100, respectively, under the medium high and high oil production scenarios.

The ethnicity of Richland County is primarily White/Caucasian (95 percent). Hispanic or Latino individuals comprise just over 3 percent of the population. It is apparent from the 2010 Census data that the percentage of minority populations in Richland County and the town of Fairview are well below corresponding percentages for the State of Montana and the United States.

Richland County and Fairview have a slightly higher percentage of residents under the age of 18 and slightly lower percentage of residents over the age of 65 than seen in the state as a whole. The median age of 39.4 for Richland County residents is similar to the state median of 39.9 years. However, the median age of Fairview residents (33.5) is well below that of the county and state population.

Median household income for residents of the town of Fairview is $43,958, which is below the median household income levels for residents of Richland County ($58,112) and the State of Montana ($46,230). The percentage of persons living below poverty levels for the town of Fairview and Richland County are estimated to be 28.7 percent and 14.2 percent, respectively. The state average poverty level percentage is estimated to be 15.2 percent.

Richland County has experienced significant economic growth in recent years. This growth is primarily tied to continuing development of the Bakken region in western North Dakota and eastern Montana. The *Richland County Growth Policy* indicates the total average employment in the county increased by 38 percent between 2009 and 2013, from 4,856 to 6,706. The mining industry, which includes businesses that extract naturally-occurring mineral solids, liquid minerals and gases, and includes oil-related services generally accounted for the highest employment during the period. The fastest growing industries by employment between 2009 and 2013 were Transportation and Warehousing, Professional and Technical Services, and Real Estate and Rental and Leasing.

Richland County's unemployment rate has been consistently lower than the state since 2004. As of November 2015, the average annual unemployment rate in the county was 2.8 percent, which is below the 4 percent statewide average unemployment rate.

3.5.2. Land Ownership

Virtually all of the land within the MT 201 study corridor is privately owned except for a few small isolated parcels along MT 201 owned by local governments, including a large water tank owned by the town of Fairview. The Fairview Airport is located south of MT 201 near RP 68. There are no blocks of federal or state administered lands within the study corridor.

3.5.3. Cultural Resources

Section 106 of the National Historic Preservation Act establishes requirements for taking into account the effects of proposed federal undertakings on any district, site, building, structure or object included in or eligible for inclusion in the National Register of Historic Places (NRHP).

A file search of the study area through the Montana State Historic Preservation Office revealed three previously recorded historic properties within the MT 201 study corridor. These properties include the Main Canal which is associated with the Yellowstone Irrigation Project (24RL0204), the bridge on MT 201 crossing the Main Canal (24RL0114), and a historic residence (24RL0376) near the corner of MT 201 and

MT 200/Ellery Avenue. Sites 24RL0204 and 24RL0376 have previously been determined eligible for the NRHP. The existing highway bridge has an "Undetermined" NRHP eligibility status.

Direct and indirect effects to NRHP eligible properties would need to be considered during project development. A cultural resource survey to identify unrecorded historic and archaeological properties within the Area of Potential Effect will need to be completed during the project development process.

3.5.4. Section 4(f) Resources and Section 6(f) Properties

Section 4(f) of the Department of Transportation Act of 1966 provides that "the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance or land from an historic site of national, State, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use."

The *Town of Fairview Growth Policy Update* shows only one park—Sharbano Park—within the community. Sharbano Park, a publically-owned park and recreation site, represents a Section 4(f) resource. Sharbano Park and the Fairview Pool are located northeast of the intersection of MT 201 and MT 200/Ellery Avenue.

There are no wildlife or waterfowl refuges within the Environmental Scan Area.

As noted in the previous section, three previously recorded historic properties exist within the MT 201 study corridor. Section 4(f) applies to all historic sites of national, state, or local significance and typically protects *only* historic or archeological properties on or eligible for inclusion on the NRHP. The Main Canal is part of the historic Lower Yellowstone Irrigation Project (24RL0204) and a historic residence (24RL0376) are NRHP-eligible and subject to consideration under Section 4(f). Further evaluation is needed to determine if the existing MT 201 bridge over the Main Canal is NRHP-eligible. This bridge represents a potential Section 4(f) resource until further review clearly establishes the property is not eligible for the NRHP.

Section 6(f) of the Land and Water Conservation Fund Act (LWCF) provides funds for buying or developing public use recreational lands through grants to local and state governments. Section 6(f)(3) of the Act prevents conversion of lands purchased or developed with LWCF funds to non-recreation uses, unless the Secretary of the Department of the Interior (DOI), through the National Park Service (NPS), approves the conversion. Conversion may only be approved if the conversion is consistent with comprehensive statewide outdoor recreation plan in force when the approval occurs, and the converted property is replaced with other recreation property of reasonably equivalent usefulness and location and at least equal fair market value.

Research has shown that LWCF grants were received for four projects within the town of Fairview including two projects at the Fairview Pool in Sharbano Park. Coordination with the MFWP would be necessary to determine if potential improvements to MT 201 would encroach on any LWCF-encumbered lands at Sharbano Park. Reviewing LWCF boundary maps associated with each grant would be necessary to determine the extent of the 6(f) encumbrance at the park.

4.0 AREAS OF CONCERN AND CONSIDERATION SUMMARY

This section provides a list and description of areas of concern and consideration within the study area. These areas were identified through review of as-built drawings, public databases, and other resources. More discussion has been provided in the previous sections, and it is reiterated here as appropriate.

4.1. TRANSPORTATION SYSTEM

Access and Right-of-way

- Right-of-way widths on rural sections of MT 201 typically range from 80 to 120 feet. Within the town of Fairview, the right-of-way width varies from 66 to 85 feet; however, a short section of right-of-way east of the Main Canal is only 47 feet wide.
- There are no public road approaches between RP 67.4 and the corporate limits of the town of Fairview (RP 68.87). Six public roads intersect MT 201 within Fairview.

Non-motorized

- With the exception of sidewalks in several quadrants at the intersection of MT 201 and MT 200/Ellery Avenue, there are no dedicated pedestrian or bicycle facilities or sidewalks within the study corridor.

Rail/Freight

- There are no railroad lines within the study area.
- Northstar Transloading operates a 400-acre rail-and-truck transportation hub in East Fairview, North Dakota which serves the oil and gas companies operating in the area.

Aviation Facilities

- The Fairview Airport is located south of MT 201 near RP 68.
- An Airport Affected Area (AAA) has been established for the airport that regulates airspace extending 9,000 feet from each end of the runway and 9,000 feet from the runway centerline over its length.

Utilities

- Underground telephone and communications lines, buried sewer and water lines, and likely petroleum pipelines exist at various locations within the corridor. Overhead power lines cross MT 201 at 8 locations.

Roadway Characteristics

- MT 201 in the study corridor consists of a 24-foot paved roadway accommodating two 12-foot travel lanes and no shoulders.
- MT 201 received an overlay through an MDT Maintenance contract in 2013, and the performance measures suggest the pavement is in relatively good condition.
- One bridge - the Main Canal bridge - occurs at RP 69.35 within the MT 201 study corridor. The existing wooden structure is 24 feet wide and has a wood deck overlain with bituminous surfacing. The bridge is not deficient based on its Sufficiency Rating and is considered to be in good overall condition.
- There are 10 mainline drainage culverts crossing MT 201 within the study corridor.
- A storm drainage system does not exist along MT 201 within the town of Fairview. Roadside ditches accommodate stormwater runoff from the roadway.

Traffic Operations

- No capacity or Level of Service concerns exist or are anticipated in the future within the study corridor.
- The intersection of MT 201 and MT 200/Ellery Avenue currently operates, and is expected to operate in the design year 2034, with acceptable delays, volume to capacity (v/c) ratio, and Level of Service (LOS) on all approaches, unless the intersection realizes high traffic growth in the future.
- A vehicle classification study conducted in March 2015 showed Trucks in Classes 5 through 13 (corresponding to the Percent Trucks of "T" value) accounted for 42.9% of all vehicles at a count location on MT 201 just west of Fairview. MDT's August 2014 PFR shows a "T" value of 23.5% for MT 201 within the Fairview-West project area (RP 63.6± and RP 69.52).

Geometrics

- Four horizontal curves exist within the MT 201 study corridor and all meet current MDT standards for at least a 55 mph design speed. However, the superelevation in the curves is unknown without field survey information.
- Vertical grades exceed current standards at three locations between RP 68.36 and 69.32. Grades on this section of MT 201 range from 4.8 to 6.6 percent in this section of the study corridor.
- Numerous vertical curves in the study corridor do not meet current MDT standards for rate of curvature based on a 55 mph design speed.

Safety

- Crash location data suggests crash clusters in the curve at the beginning of the study corridor at RP 67.4 and the curve at RP 68.4 (just east of the Fairview Airport).
- Single vehicle crashes - primarily rollovers and fixed object collisions - accounted for 88 percent of all crashes within the study corridor over the 2004-2013 analysis period.
- MDT found MT 201 within the Fairview-West project area is performing at LOSS IV for all crashes indicating a high potential for crash reduction.

4.2. Environmental Considerations

Physical Environment

- MT 201 crosses soils designated as prime farmland if irrigated and as farmland of statewide importance between RP 67.4 and to RP 68.5.
- One of the above ground water storage tanks used for the town of Fairview's water supply is located about 200 feet south of MT 201 near RP 69.
- Riparian forested shrub wetlands exist along portions of the Main Canal within the MT 201 study corridor.
- Notable hazardous materials concerns do not exist within the MT 201 study corridor. However, horizontal directional well paths for several oil wells extend deep beneath the highway at multiple locations and several open cut permits for the mining and processing of gravel materials exist on lands adjoining the study corridor.
- Residences in Fairview adjoining MT 201 represent sensitive noise receptors.

Biological Environment

- Twenty-five migratory birds of conservation concern (including bald and golden eagles and several other raptors) may occur within the Fairview area.

- Six threatened and endangered species are currently listed within Richland County; however, only 3 species—whooping cranes, Sprague's pipit, and Northern Long-eared bats could potentially occur in the MT 201 study corridor based on available habitat types. The MNHP indicates whooping cranes are the only listed species that has been observed in the study corridor.
- Whooping cranes are the only State of Montana Species of Concern likely to occur in the study corridor.
- Lands within the MT 201 study corridor generally rank low for their landscape connectivity values, terrestrial game quality, and occurrence of species of economic and recreational importance.
- Noxious and exotic plant species may be located within the study corridor.

Social and Cultural Environment

- The estimated median income level for residents of Fairview is about 95 percent of the average statewide median income but only about 75 percent of Richland County's median income level.
- The percentage of Fairview residents living below the poverty level (28.7 percent) is more than twice as high as seen for all residents of Richland County (14.2 percent) and well above the statewide average (15.2 percent).
- The Main Canal and a historic residence near the intersection of MT 201 and MT 200/Ellery Avenue are NRHP-eligible properties within the study corridor. Additional evaluation is needed to determine if the existing bridge on MT 201 over the Main Canal is NRHP-eligible.
- There are potentially other historic-age properties (residences) adjoining MT 201 in the town of Fairview.
- The known NRHP-eligible properties (Main Canal and a historic residence) and Sharbano Park represent Section 4(f) resources in the study corridor. Sharbano Park is also encumbered by past LWCF projects and is subject to Section 6(f).

5.0 NEEDS AND OBJECTIVES

Needs and objectives for MT 201 were developed during the Fairview West – Phase I Feasibility Study and are based on a review of existing data, local plans, and input from elected officials and the public. The needs and objectives explain why an improvement option(s) may be necessary. The process includes analyzing the social, environmental, and engineering conditions described in the Existing and Projected Conditions Report and recognizing the character of the corridor.

The following needs and objectives were used to develop the improvement option(s). Improvement options identified in this Phase I Feasibility Study may lead to a future transportation project that improves safety, operations, and/ or addresses infrastructure concerns. The purpose and need statement for any future project should be consistent with the needs and objectives contained in this Phase I Feasibility Study.

Should this Phase I Feasibility Study lead to a project or projects, compliance with NEPA (if federal funding is used) and MEPA (if a state action occurs) will be required. Further, this Feasibility Study will be used as the basis for determining the impacts and subsequent mitigation for the improvement options in future NEPA/MEPA documentation. Any project developed will have to be in compliance with CFR Title 23 Part 771 and ARM 18, sub-chapter 2, which set forth the requirements for documenting environmental impacts on highway projects.

5.1. Identified Needs And Objectives

NEED 1: IMPROVE THE SAFETY OF MT 201 IN THE STUDY AREA FOR ALL USERS.

Need 1 recognizes that MT 201 must be safe and efficient to meet the travelling needs of the public, both for through and local traffic. To address this need, improvement options are necessary for the corridor to achieve a higher level of safety. This need can be accomplished by improving the roadway to meet current design standards (to the extent practicable), improving drainage conditions, and providing consistent road and bridge widths.

Objectives (To the Extent Practicable)

- Improve roadway elements to current design standards.

NEED 2: IMPROVE THE OPERATIONS OF MT 201 WITHIN THE STUDY AREA.

Coincident to improving safety, the unique vehicular composition and variable traffic demands along MT 201 suggest that improving traffic operations of the roadway will be beneficial. Accommodating future traffic demands in terms of separating high truck traffic from the travel stream and alleviating the negative effects of additional traffic and trucks from the Town of Fairview will serve to improve traffic flow and overall operations.

Objectives (To the Extent Practicable)

- Accommodate existing and future capacity demands within the corridor.
- Alleviate the negative effects of additional traffic and trucks from the Town of Fairview.

5.2. Other Considerations

MT 201 provides access to agricultural, residential, and industrial (oil/gas) lands. All improvements should be reviewed for their potential impact on the environmental, scenic, cultural, industrial, and agricultural aspects of the corridor.

Future improvements should be developed with recognition given to the rural nature of the corridor and the agricultural, industrial, and residential uses along the route. Improvement options should be sensitive to the day-to-day operations of adjacent local landowners, while recognizing the needs of agricultural and industrial operations.

Any improvement options should be sensitive to the availability of funding for construction, as well as to recurring maintenance costs. Limiting disruptions to adjacent properties during construction would be desirable, especially during peak agricultural harvest months.

- Minimize the environmental resource impacts of improvement options.
- Limit disruptions during construction to the extent practicable.
- Provide appropriate speeds within the study area per statutory and special speed zones established by the Montana Transportation Commission.
- Review maintenance practices.
- Recognize the environmental, industrial, residential, and agricultural nature of the corridor.
- Consider local planning efforts and local support for removing trucks from within Fairview.
- Consider availability and feasibility of funding.

6.0 CONCLUSION

This Existing and Projected Condition Report focuses on a 2.1-mile long segment of the presently traveled way (PTW) and its adjoining roadside environment. This study area is intended to capture geometric, safety and traffic conditions of the existing roadway and its major intersection(s).

Coincident to the preparation of this Existing and Projected Conditions Report, related analysis work associated with the Phase I Feasibility Study has occurred and resulted in companion reports and memorandums. The following documents have been completed to assist in the analysis and to help inform the identification of potential new alignments:

- Quantum Route Optimization "Input" Memorandum – dated June 2, 2015
- Environmental Scan Report – dated September 29, 2015
- Alternative Alignment Analysis – dated September 29, 2015

A public meeting was held in Fairview to present the initial findings of potential alternative alignments for MT 201 between RP 67.4 and the intersection of MT 200/Ellery Avenue in Fairview (RP 69.5). The public meeting was held on August 25, 2015 at the Fairview School Cafeteria. Approximately 55 people attended the meeting, which consisted of an open house and a formal presentation/question and answer session.

All of the work associated with this Phase I Feasibility Study is being completed outside of the formal NEPA/MEPA process, and is intended to inform the decision of the best alignment possible to increase safety and shift trucks from the existing road facility as it enters Fairview. The purpose and need for improvements is as follows:

Purpose and Need:

The roadway is being considered for improvements due to the large influx in traffic in the region, the high proportion of heavy trucks using the roadway, and the desire to improve safety by bringing the roadway up to current design criteria. A secondary objective is to alleviate the negative effects of additional traffic and trucks within the Town of Fairview.