Appendix B

Existing and Projected Conditions Report

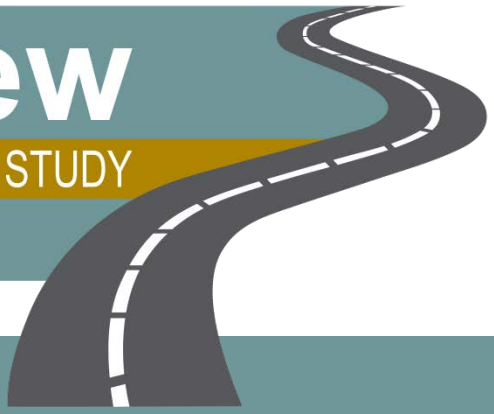
Fairview

CORRIDOR PLANNING STUDY

June 2015

Fairview

CORRIDOR PLANNING STUDY



Existing and Projected Conditions Report

Prepared for:

MONTANA MDT DEPARTMENT OF TRANSPORTATION

Prepared by:

DOWL

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Abbreviations and Acronyms

AADT	Annual Average Daily Traffic
ACI	Alligator Crack Index
AGR	Annual Growth Rate
AM	morning
ATS	Average Travel Speed
BNSF	Burlington Northern Santa Fe
CR	County Road
CSA	Corridor Safety Audit
FFS	Free-flow Speed
FHWA	Federal Highway Administration
ft	feet
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
IRI	International Roughness Index
LOS	Level of Service
LPR	License Plate Readers
MCI	Miscellaneous Crack Index
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
NDDOT	North Dakota Department of Transportation
NEPA	National Environmental Policy Act
NHS	National Highway System
PM	evening
PMS	Pavement Management Systems
PTSF	Percent Time Spent Following
RCTS	Richland County Transportation Service
RP	Reference Post
RV	Recreational Vehicle
STIP	Statewide Transportation Improvement Program
UGPTI	Upper Great Plains Transportation Institute
V/C	Volume to Capacity

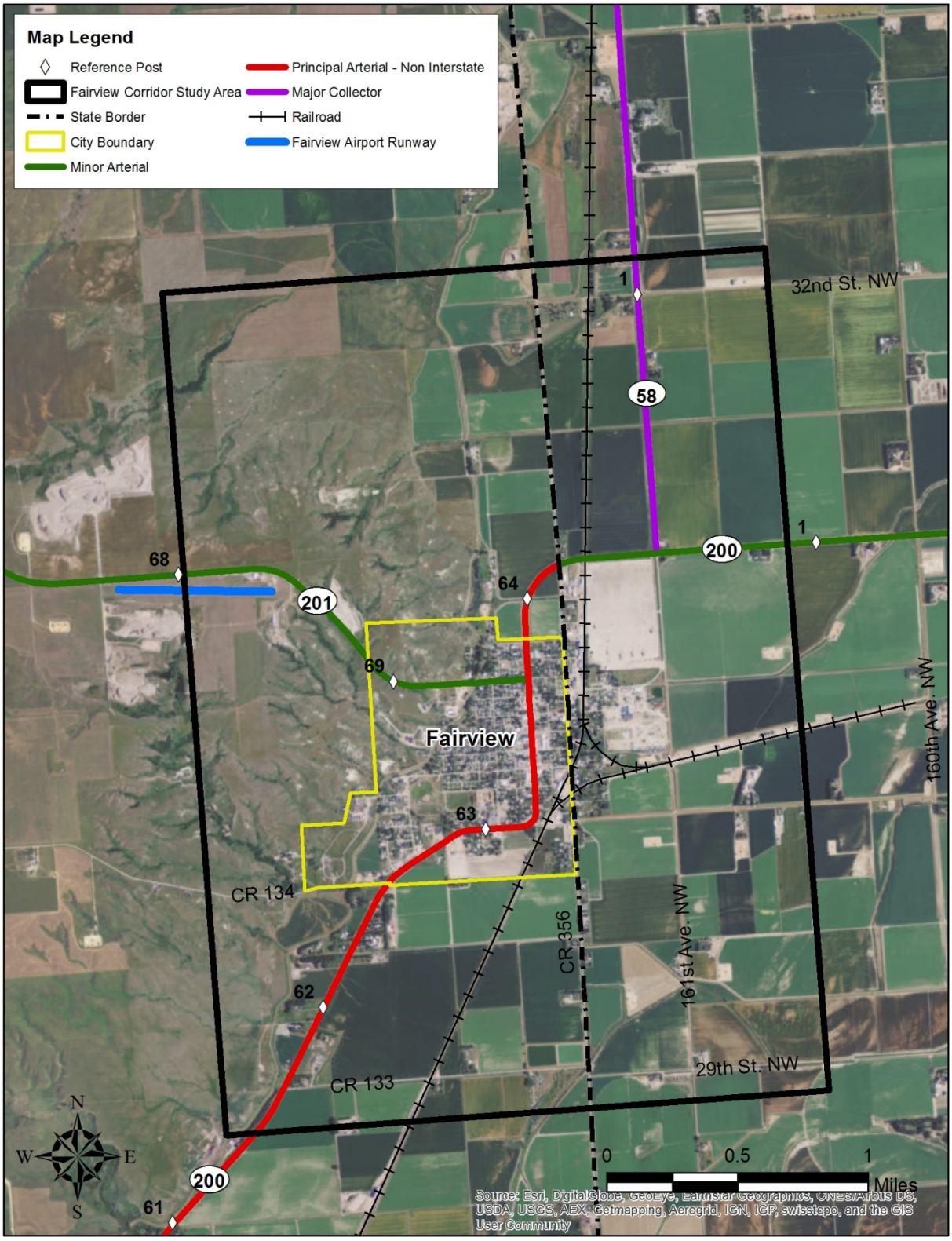
1.0 Introduction

The Montana Department of Transportation (MDT), in cooperation with the North Dakota Department of Transportation (NDDOT), City of Fairview, Richland County, Montana, McKenzie County, North Dakota, and the Federal Highway Administration (FHWA), initiated a corridor planning study to investigate alternative alignment options to alleviate truck traffic in the Fairview area. At the time the study was initiated, the increase in truck traffic in Fairview had been generated by development in the Bakken oil field in both Montana and North Dakota. The study area is illustrated in Figure 1 and includes MT 200, ND 200, ND 58, and the area immediately surrounding Fairview. MT 201 is being evaluated separately as part of another study.

A planning study is a planning-level assessment of a study area occurring before project-level environmental compliance activities under the National and Montana Environmental Policy Acts (NEPA/MEPA). There is no equivalent state-level environmental policy act in North Dakota. The planning study process is designed to identify potential transportation improvements and to facilitate a smooth and efficient transition from transportation planning to environmental review and potential project development. The process involves conducting a planning-level review of safety, operational, and environmental conditions to identify needs and constraints. It also allows early coordination with members of the public, resource agencies, and other interested stakeholders. This process is separate from the NEPA/MEPA environmental compliance documentation, design, right-of-way acquisition, and construction phases of an individual project. Depending on needs and funding availability, an improvement option may be forwarded from this planning-level study and developed into a project at a later date.

This existing and projected conditions report provides a planning-level summary of transportation system features and physical, biological, social, and cultural characteristics to help identify issues, constraints, and opportunities within the study area.

Figure 1. Study Area



2.0 Recent and Future Projects

Recent and future MDT and NDDOT projects are listed in Table 1 and Table 2.

Table 1. Recent and Future MDT Projects

Type	Name	UPN	Project Number	Description	Date
Recent Projects	Fairview Intersections	7832	STPP 20-2(28)63, SFCP 20-2(26)63, STPP 20-2(27)63	Installation of traffic signal at MT 200 and 6th St. and improvement of intersection at MT 200 and MT 201.	Let May 2012
	Glendive Rumble Strip Program	7834	STWD(144), HSIP STWD(145)	Shoulder and centerline rumble strips. Project on MT 200 (RP 52.6-62.3) ended at southern edge of the corridor study area.	Let May 2013
Future Projects	MT 200-Fairview	8168	STPP 20-2(31)62, NH 20-2(32)62	Major rehabilitation without added capacity – new storm drains, milling/pulverizing existing surface, new plant mix surface (RP 62.3-64.18).	Anticipated let date February 2019.
	Sidney to Fairview	7950	NH 20-2(30)53, STPP 20-2(29)53	Minor rehabilitation with overlay, seal and cover (RP 52.57-62.3) ends at southern edge of corridor study area.	To be let when ready; anticipated construction date 2017.
	Fairview-West	8650	STPP 201-2(14)64, STPP 201-2(15)64	Reconstruction of MT 201 without added capacity (RP 63.6 to RP 69.5).	Anticipated let date January 2019.

Source: MDT STIP 2015-2019 and 2016-2020.

Table 2. Future NDDOT Projects

Type	Name	PCN	Project Number	Description	Date
Future Projects (Illustrative)	State Line to JCT US 85	17861, 20294, 20295	SS-7-200(014)000, SS-7-200(015)003, SS-7-200(016)004	Three contiguous projects involving roadway rehabilitation and ND 200/ND 58 intersection improvements.	FY 2015 (construction planned in 2016)
	JCT 200 N to JCT ND 1804	20416	Unknown	Concrete overlay, hot bituminous pavement, widening	FY 2016-2018

Source: NDDOT STIP 2015-2018 and 2016-2019.

3.0 Transportation System Conditions

The transportation system within the study area is discussed in terms of its features, geometric characteristics, crash history, access points, traffic volumes, and operational characteristics. The analysis in this report focuses on MT 200, ND 200, and ND 58. MT 201 is being addressed separately through the Fairview-West project.

3.1 Features

Transportation features were identified through field observation and a review of published statistics, documentation, GIS data, and MDT/NDDOT as-built drawings. A field review of the corridor was conducted on February 25, 2015, to assist in identifying existing conditions and constraints. Attachment 1 contains a photo log documenting conditions observed in the field.

Functional Classification and Roadway System

Functional classification is used to characterize public roads and highways in accordance with FHWA guidelines according to the type of service provided by the facility and the corresponding level of travel mobility and access to and from adjacent property. MT 200 is classified as a principal arterial non-interstate, ND 200 is classified as a minor arterial, and ND 58 is classified as a major collector on the respective Montana and North Dakota functional classification maps.

Principal arterials serve the major activity centers of an area and consist mainly of the highest-traffic-volume corridors. Principal arterials place an emphasis on mobility and access to abutting land may be limited. Principal arterials carry a high proportion of the total vehicle miles traveled within an area. In rural settings, principal arterials service trips lengths and travel density characteristics similar to that of interstate travel.

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.[1]

Major collectors in the rural setting typically serve intra-county travel, rather than statewide travel, and typically serve shorter trips compared to arterial routes. Trips along major collectors greater in length than intra-country travel will typically funnel motorists to the arterial system.

Right-of-way

Right-of-way boundaries and widths have been estimated for the purpose of this study based on a review of available MDT and NDDOT as-built drawings, right-of-way plans, and cadastral information. Right-of-way widths vary throughout the corridor. MDT right-of-way widths typically range from 105 to 160 feet along MT 200 outside Fairview. The MT 200 right-of-way width within Fairview is generally 80 feet. Right-of-way widths

[1] FHWA, Highway Functional Classification Concepts, Criteria and Procedures, 2013.

along ND 200 and ND 58 are generally 150 feet and 170 feet, respectively. Attachment 2 lists estimated right-of-way distances throughout the corridor.

Structures

The MDT Bridge Bureau identified four structures within the study area. Of these, one is located on MT 200 at RP 69.34. Currently, two of the four structures are candidates for repair, rehabilitation, or replacement. Table 3 presents bridge data within the study area.

Table 3. Bridge Data

RP	Bridge ID	Location	Feature Intersect	Year Built (Recon)	Structure Condition	Deck Condition	Width (ft)	Length (ft)
0.14	L42212000+01001	1M SW of Fairview	USBR Main Canal 070	1978	Poor	Good	23.7	35.0
0.01	M42042000+00101	West edge of Fairview	USBR Main Canal 073	2008	Good	Good	28.4	36.1
0.02	M42042000+00201	SW edge of Fairview	USBR Main Canal 093	1908 (1980)	Fair	Good	17.5	40.0
69.34	S00201069+03001	Fairview	USRS Canal	1934	Good	Good	24.0	51.0

Source: MDT Bridge Bureau, 2015.

Good: Candidate for preservation treatments. Fair: Candidate for repair or rehabilitation. Poor: Candidate for rehabilitation or replacement.

There are no structures on ND 58 and ND 200 within the study area. A bridge crossing the Yellowstone River and several box culverts are located on ND 200 east of the study area.

Bicycle and Pedestrian Facilities

Intermittent sidewalks occur along MT 200 through Fairview. Four- to eight-foot shoulders occur along MT 200, ND 200, and ND 58, providing opportunity for non-motorized usage along the edge of the traveled way.

Utilities

Utilities in the study area include underground telephone, underground cable television, underground natural gas, underground water, and overhead and underground electric power. Irrigation canals and petroleum pipelines also occur in the study area vicinity. A detailed utility investigation should be conducted during project development for any improvement options forwarded from this study.

Air Service

There is a small airport located approximately one mile west of Fairview owned by the Sidney-Richland Airport Authority. The Sidney-Richland Municipal Airport is a larger regional airport, and is located approximately 26 miles southwest of Fairview in Sidney, MT. The nearest international airport is the Sloulin Field International Airport located in Williston, ND, approximately 35 miles from Fairview. There are also five small airports located within forty miles of Fairview.

Rail Service

A BNSF Railway facility parallels MT 200 and ND 58 through the study area. There are numerous crossings in the study area including County Road (CR) 133 in the southern portion of the study area; 9th, 6th, and 2nd Streets within Fairview; and ND 200 east of the

MT/ND state line. Based on a tonnage detail map from Snowden to Glendive, as of January 27, 2014, there are three through trains per day on this track. A transloading facility is expected to be constructed northwest of the ND 200/ND 58 intersection.

Transit

Richland County Transportation Service (RCTS) is the county's only public transit service. RCTS serves a five mile radius surrounding the four major cities/towns (Sidney, Fairview, Savage, and Lambert) of Richland County. Currently RCTS provides transit to and from Fairview on Thursdays and departing trips from Fairview on Monday, Tuesdays, Wednesday, and Fridays. Service may be requested on other weekdays, but is subject to availability. In addition to regularly-scheduled service, RCTS also offers day trips and special excursion trips. There are no other transit providers in the study area.

Drainage Condition

Drainage throughout the study area is generally sufficient along ND 200, ND 58, and the rural portions of MT 200. Highway runoff is directed to adjoining shoulders. Graded side slopes carry run-off to natural drainage conveyances through constructed ditches within the right-of-way or via natural drainage patterns formed by the topographic conditions of the adjacent lands.

Isolated areas within Fairview have inadequate drainage. Topography within the study area generally slopes from west to east. The MT 200 drainage system within Fairview consists of curb and gutter, inlets, storm drain, and valley gutters. Several intersections within Fairview contain grated trough structures running perpendicular to MT 200. The purpose of the trough structures is to convey runoff to the east side of MT 200. Based on local feedback, the trough structures are largely ineffective and contribute to poor drainage at the intersections. Standing water in conjunction with increased truck traffic through Fairview has created issues with mud splatter.

Pavement Condition

The 2013 MDT Pavement Condition Treatment Report indicates that pavement on MT 200 within the study area is generally in good condition, with a fair to poor ride index rating. Table 4 lists MDT pavement ratings.

During the field review, rutting of the roadway was observed at several locations within the study area. The most noticeable locations were at the ND 200 railroad crossing and at the MT 201/MT 200 intersection. Potholes and other pavement failures were noted adjacent to the surface drainage crossings at the intersections of MT 201, 3rd, 4th, 5th, and 7th Streets with MT 200. Transverse and longitudinal cracks occur consistently along the entire corridor, although they don't appear to be compromising the pavement. These cracks have been sealed to prevent water infiltration into the subgrade.

Table 4. MT 200 Pavement Condition

Highway (Corridor ID)	Begin RP	End RP	Lanes	Pave Width (ft)	Ride Index	Rut Index	ACI	MCI
MT 200 (C000020)	61.4	62.3	2	42	74.1 (Fair)	67.9 (Good)	99.7 (Good)	98.9 (Good)
	62.3	63.7	4	62	59.9 (Poor)	69.7 (Good)	95.6 (Good)	98.8 (Good)
	63.7	64.2	2	40	63.9 (Fair)	71.8 (Good)	98.6 (Good)	100 (Good)

Source: 2013 MDT Pavement Condition Treatment Report. Highlighted cells indicate fair or poor condition.
Ride Index is calculated using the International Roughness Index (IRI) in inches per mile and converting it to a 0-100 scale. Good: 80-100; Fair: 60-79.9; Poor: 0-59.9.
Rut Index is calculated by converting rut depth to a 0-100 scale. Rut measurements are collected approximately evert foot and averaged into one-tenth-mile reported depths. Good: 60-100; Fair: 59.9-40; Poor: 0-39.9.
Alligator Crack Index (ACI) is calculated by combining all load-associated cracking, and converting it to a 0-100 scale. Good: 80-100; Fair: 60-79.9; Poor: 0-59.9.
Miscellaneous Crack Index (MCI) is calculated by combining all non-load-associated cracking, and converting it to a 0-100 scale. Good: 80-100; Fair: 60-79.9; Poor: 0-59.9.

A 2015 NDDOT Documented Categorical Exclusion (CATEX) for three projects from the MT/ND state line to Jct US 85 notes ND 200 (provided in Attachment 3) is currently experiencing pavement deterioration including cracking and rutting, and accelerated deterioration is expected with increasing truck traffic. Table 5 summarizes the existing pavement condition for ND 200 and ND 58.

Table 5. ND 200 Pavement Condition

Highway	Begin RP	End RP	IRI Index	IRI Rating	Distress Score	Distress Rating	Rut (inch)	Rut Rating
ND 200	0.00	4.00	142	Fair	56	Poor	0.46	Fair
ND 58	0.00	6.00	90	Good	68	Poor	0.31	Good

Source: 2013 NDDOT Williston District Highway Information. Highlighted cells indicate fair or poor condition.
International Roughness Index (IRI) Rating: Excellent ≤ 60, Good = 61-99, Fair = 100-145, Poor ≥ 145.
Distress Rating: Excellent ≥ 98, Good = 88-97, Fair = 77-87, Poor ≤ 76.
Rut Rating: Excellent ≤ 0.25", Good = 0.25"-0.375", Fair = 0.376"-0.50", Poor ≥ 0.50".

Future projects in MT and ND (as noted in Chapter 2) will address pavement deficiencies, resulting in good pavement condition within the defined project limits.

3.2 Geometric Characteristics

Design Criteria
Within the study area, MT 200 is classified as a principal arterial-non interstate, ND 200 is classified as a minor arterial, and ND 58 is classified as a major collector. MDT geometric design criteria were used to assess MT 200 within the study area(MDT Road Design Manual, Chapter 12, pages 12(7) and 12(12), Figures 12-3 and 12-4, Geometric Design Criteria for Rural Principal Arterials and Rural Minor Arterials (National Highway System – Non Interstate) U.S. Customary, 2008).

ND design guidelines are provided in multiple figures and tables included in the NDDOT Design Manual (Chapter I, Section 6 – Design Philosophy, Investment Strategy, and Guidelines). NDDOT design guidelines are characterized by investment strategy. The investment strategies are preventative maintenance, minor rehabilitation, structural improvement, major rehabilitation, and new/reconstruction projects. The NDDOT design philosophy considers the investment strategy design guidelines in conjunction with design values provided in AASHTO A Policy on Geometric Design of Highways and Streets.

The 2015 Documented CATEX for projects planned on ND 200 notes that substandard vertical alignments and superelevations exist on ND 200. These deficiencies are located to the east outside the study area. Geometric conditions for MT 201, ND 200, and ND 58 were not assessed as part of the Fairview Corridor Planning Study. MT 201 is currently being reviewed as part of the Fairview-West project, and ND 200 is scheduled for reconstruction during the summer of 2015.

The following sections provide information on geometric conditions assessed for MT 200 within the study area.

General Conditions
The existing roadway alignment generally exhibits level terrain characteristics. A design speed of 35 miles per hour (mph) and low-speed urban criteria in combination with a level terrain type was utilized within Fairview (approximately RP 62.5 to RP 63.8). A design speed of 70 mph and open roadway criteria in combination with a level terrain topography type was used for the remainder of MT 200 outside Fairview. The posted speed limit on MT 200 within the study area varies from 55 mph outside Fairview and 35 mph within Fairview.

Roadway Width
MT 200 varies between a two-lane and four-lane undivided highway with 12-foot travel lanes and varying shoulder widths.

Horizontal Alignment
Horizontal alignment includes consideration of horizontal curvature, superelevation, curve type, and stopping and passing sight distance.

MDT as-built drawings were assessed for MT 200. Based on a review of available data, four of the five horizontal curves analyzed on MT 200 within the study area do not meet current MDT design criteria for curve radius and one curve also does not meet minimum sight distance criteria. Attachment 4 presents horizontal alignment information for the MT 200 corridor including a pass/fail rating for each curve based on the best available data.

Vertical Alignment
Vertical alignment includes consideration of grade, vertical curve length, vertical curve type (either a sag curve or a crest curve), and K value. K value is the horizontal distance needed to produce a one percent change in gradient and is directly correlated to the roadway design speed and stopping sight distance.

MDT as-built drawings were assessed for MT 200. Available data indicates that the 14 vertical curves analyzed within the study boundaries meet current MDT design criteria. Several curves do not meet the minimum curve length guideline of 1000’ for aesthetics,

but otherwise meet minimum length guidance. Attachment 4 presents vertical alignment information and pass/fail determinations for MT 200 within the study area.

Clear Zones

The MDT Road Design Manual specifies an offset distance from the edge of the traveled way (ETW) to be free of any obstructions. The ETW is delineated by the white pavement marking located on the right-hand side of the travel lane. This offset distance, known as the "clear zone," includes the roadway shoulder and is defined based on design speed, annual average daily traffic (AADT), cut/fill slopes, and offsets from the ETW.

The MDT Road Design Manual was used to analyze fill slopes, back slopes, and dimensions for MT 200 within the study area. The slopes and dimensions within the clear zone provide a recovery area for vehicles exiting the traveled way. If the specified dimensions cannot be achieved, a roadway barrier may be warranted. The ideal roadway would contain a clear zone free of obstructions. Generally, the MT 200 clear zone areas contain compliant slopes although various obstructions exist within Fairview including, but not limited to, trees, fence, signs, and utilities.

3.3 Crash History

Crash data for MT 200 and ND 200 within the study area were reviewed for this report. Crash details and analysis periods differ for MT and ND data.

MDT provided crash data for MT 200 from RP 61.4 to RP 64.2 for the ten-year period from January 1, 2004, to December 31, 2013. During the ten-year analysis period, a total of 66 crashes resulted in 22 injuries and no fatalities. Approximately 20% (13 out of 66) of all crashes involved a semi-trailer truck vehicle. As a result of these crashes, a total of 3 injuries and no fatalities occurred during the analysis period.

As indicated in Figure 2, the annual number of vehicles involved in crashes peaked in 2011. Table 6 presents the number and percentage of crashes and injuries attributed to types of collisions during the ten-year analysis period.

Figure 2. MT 200 Vehicles Involved in Crashes (2004-2013)

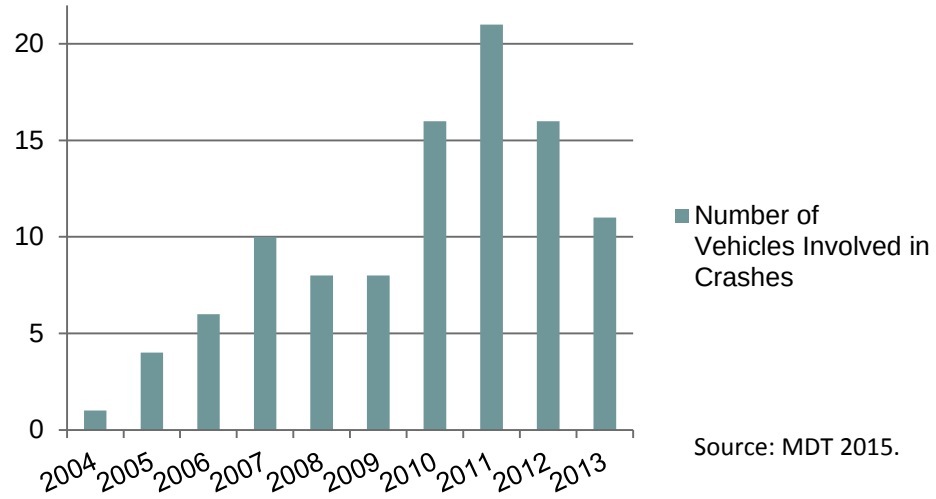


Table 6. Total Crashes MT 200 (RP 61.4 – RP 64.2)

Crash Type	Number of Crashes	Percent of Total Crashes	Number of Injuries	Percent of Total Injuries
Fixed Object (Sign, Tree, Utility Pole, etc.)	16	24.2%	1	4.5%
Rear End	10	15.2%	8	36.4%
Roll Over	9	13.6%	7	31.8%
Right Angle	8	12.1%	2	9.1%
Sideswipe, Same Direction	5	7.6%	0	0.0%
Parked Vehicle	4	6.1%	0	0.0%
Sideswipe, Opposite Direction	3	4.5%	0	0.0%
Right Turn, Same Direction	2	3.0%	0	0.0%
Wild Animal	2	3.0%	0	0.0%
Backing Vehicle	1	1.5%	0	0.0%
Domestic Animal	1	1.5%	0	0.0%
Head On	1	1.5%	4	18.2%
Left Turn, Opposite Direction	1	1.5%	0	0.0%
Left Turn, Same Direction	1	1.5%	0	0.0%
Lost Control	1	1.5%	0	0.0%
Not Fixed Object or Debris	1	1.5%	0	0.0%
Total	**66**	**100%**	**22**	**100%**

Source: MDT, 2015. Note: A fatality occurred at the intersection of MT 201/MT 200 in 2011. The crash was coded as occurring on MT 201, and is not included in the data presented in Table 6.

Fixed-object (e.g., sign, tree, utility pole) and rear-end crashes occurred at the highest number. Fixed-object crashes occurred more commonly than rear-end crashes, but rear-end crashes were more severe resulting in more injuries. Fixed-object crashes made up 24.2% (16 out of 66) of all crashes and 4.5% (1 out of 22) of all injuries. Rear-end crashes made up 15.2% (10 out of 66) of all crashes and 36.4% (8 out of 22) of all injuries.

Table 7 presents the number and percentage of semi-trailer truck-related crashes and injuries attributed to types of collisions during the ten-year analysis period.

Table 7. Semi-Trailer Truck Crashes MT 200 (RP 61.4 – RP 64.2)

Crash Type	Number of Crashes	Percent of Total Crashes	Number of Injuries	Percent of Total Injuries
Right Angle	3	23.1%	1	33.3%
Rear End	2	15.4%	1	33.3%
Right Turn, Same Direction	2	15.4%	0	0.0%
Sideswipe, Same Direction	2	15.4%	0	0.0%
Fixed Object (Sign, Tree, Utility Pole, etc.)	1	7.7%	0	0.0%
Lost Control	1	7.7%	0	0.0%
Roll Over	1	7.7%	1	33.3%
Sideswipe, Opposite Direction	1	7.7%	0	0.0%
Total	**13**	**100%**	**3**	**100%**

Source: MDT, 2015.

The highest number of semi-trailer truck crash type was right angle. Right-angle crashes made up 23.1% (3 out of 13) of semi-trailer truck crashes and 33.3% (1 out of 3) of semi-trailer truck injuries. Rear-end, right-turn, same-direction, and sideswipe same-direction crashes each made up 15.4% (2 out of 13) of semi-trailer truck crashes. Injuries resulted from right-angle, rear-end, and roll-over semi-trailer truck crashes.

Table 8 presents the number and percentage of crashes and injuries organized by reported weather, road, and light condition.

Table 8. Weather, Road, and Light Conditions MT 200 (RP 61.4 – RP 64.2)

Attributes		Number of Crashes	Percent of Total Crashes	Number of Injuries	Percent of Total Injuries
Weather Conditions	Clear	37	56.1%	14	63.6%
	Cloudy	18	27.3%	4	18.2%
	Blowing Snow	5	7.6%	0	0.0%
	Rain	3	4.5%	2	9.1%
	Sleet/Hail/Freezing Rain/Drizzle	2	3.0%	2	9.1%
	Snow	1	1.5%	0	0.0%
	Total	**66**	**100%**	**22**	**100%**
Road Conditions	Dry	43	65.2%	11	50.0%
	Ice	10	15.2%	2	9.1%
	Snow or Slush	8	12.1%	5	22.7%
	Wet	5	7.6%	4	18.2%
	Total	**66**	**100%**	**22**	**100%**
Light Conditions	Daylight	52	78.8%	18	81.8%
	Dark (Not Lighted)	8	12.1%	3	13.6%
	Dark (Lighted)	4	6.1%	1	4.5%
	Dawn	1	1.5%	0	0.0%
	Dusk	1	1.5%	0	0.0%
	Total	**66**	**100%**	**22**	**100%**

Source: MDT, 2015.

The majority of crashes and injuries occurred during clear weather, dry roadway, and daylight conditions.

Contributing factors indicate the majority of crashes were a result of driver error, including inattentive and careless driving, failure to yield, improper maneuvering, falling asleep, following too closely, and speeding.

Table 9 identifies the number of intersection-related crashes grouped by semi-trailer truck crashes (truck crashes), which are all crashes involving a semi-trailer truck, and crashes that did not involve a semi-trailer truck (non-truck crashes).

Table 9. MT 200 Intersection Crash Summary (2004 – 2013)

Intersecting Roadways with MT 200	Truck Crashes	Non-Truck Crashes	Total Crashes
Interstate Avenue	0	1	1
1st Street North	0	1	1
MT 201	5	2	7
2nd Street	0	1	1
4th Street	0	1	1
5th Street	1	0	1
7th Street	0	2	2
Richardson Avenue	0	1	1
South Central Avenue	1	2	3
Pleasant Avenue	0	2	2
Dawson Avenue	1	0	1
Totals	**7**	**14**	**21**

Source: MDT, 2015.

The highest number of intersection-related crashes occurred at the intersection of MT 200/MT 201. However, the higher number of crashes at this intersection is not unexpected due to the relatively higher volume of vehicles entering this intersection compared to other intersections.

NDDOT did not provide crash data for this study. The 2013 ND Crash Summary report noted that McKenzie County had the greatest number of fatal crashes in the state in 2013. Several of these occurred on ND 200 and ND 58 in the study area vicinity.

A Traffic Operations Study prepared for NDDOT in April 2014 evaluated ND 200 from RP 0.0 to 18.7 to examine potential traffic operational improvements. As part of this study, crash data was summarized over a three-year study period (October 1, 2010, to September 30, 2013). Table 10 summarizes applicable crash data for the ND 200 study area corridor. During the three-year analysis period, eight of the 20 crashes resulted in injury. The remaining 12 crashes reported property damage only and none of the 20 crashes involved fatalities. Of the 20 total crashes, 10 crashes occurred at the ND 200/ND 58 intersection. The Traffic Operations Study analyzed several alternatives to improve traffic operations and safety at this intersection. The study concluded a roundabout was the preferred alternative for the ND 200/ND 58 intersection.

Table 10. Total Crashes ND 200 (RP 0.0 – RP 0.88)

Crash Type	Number of Crashes	Percent of Total Crashes	Number of Crashes at ND 200/ND 58 Intersection
Left Turn	4	20.0%	3
Angle	5	25.0%	3
Rear End	5	25.0%	4
Sideswipe, Same Direction	1	5.0%	
Head On, Sideswipe, Opposite Direction	2	10.0%	
Single	3	15.0%	
Total	**20**	**100%**	**10**

Source: NDDOT, 2014.

3.4 Access

An access point is an ingress/egress route from a roadway to an adjacent land parcel. Access points spaced farther apart allows orderly merging of traffic and presents fewer challenges to drivers. Conversely, access points spaced closer together can become a factor in reducing the free-flow speed[2] (FFS) of a roadway. The frequency of access points increases along MT 200 near Fairview. However, the reduction in free-flow speed due to the increased frequency of access points becomes less noticeable to motorists as posted speed limits decrease through Fairview.

Access management is a set of methods used to control vehicular access to roadways from adjoining land parcels, and may include designation of access spacing, development of left- and right-turn lanes, installation of median treatments, and right-of-way management. Access management can provide benefits such as improved traffic operation and improved safety performance.

There is limited access control on MT 200 from RP 52.37 to RP 63.17. There are three access points to residences on ND 200 between the state border and the railroad crossing (RP 0.0 to 0.1). There is an additional residential property at RP 0.7 with two access points spaced approximately 340 feet apart. ND 58 has three residential access points located at RP 0.7, RP 0.8, and RP 1.1. The remainder of the ND 200 and ND 58 study corridor contains intermittent primitive access points to agricultural parcels.

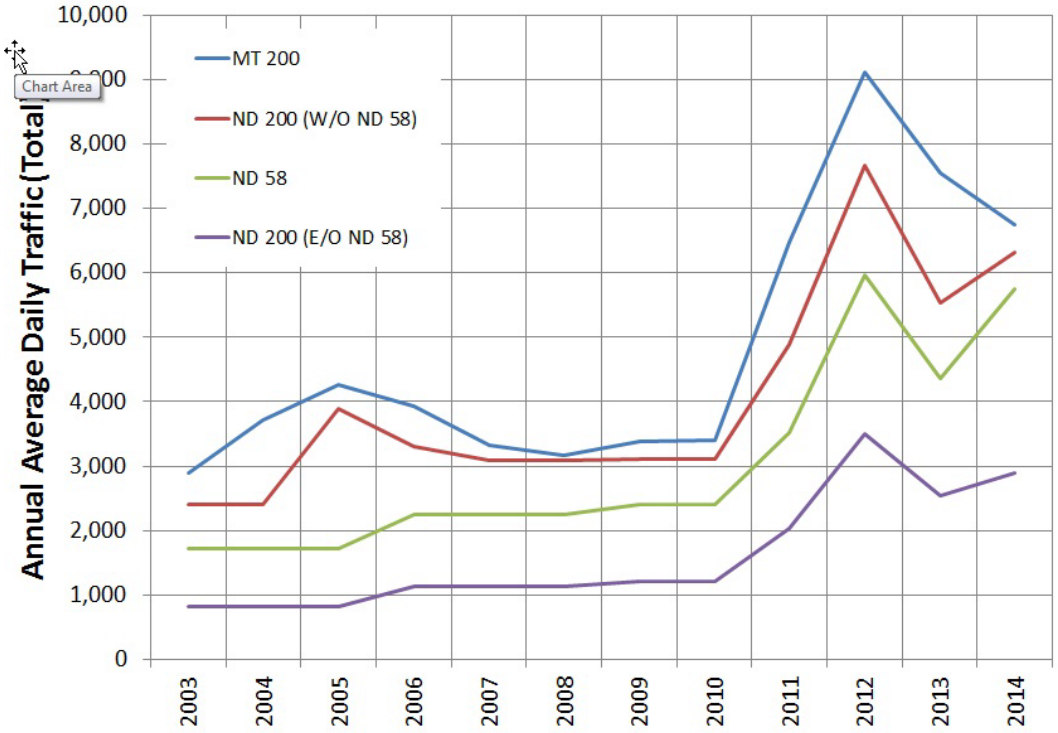
3.5 Traffic Volumes

Historic AADT Volumes

Average daily traffic (AADT) represents the total of all motorized vehicles traveling in both directions on a highway on an average day. AADT volumes from short-term counters 42-2-2, 42-2-11, 42-2-12, 42-2-13, and 42-2-14 located on MT 200 at RP 62.5, RP 63.2, RP 63.6, RP 63.7, and RP 64.2, respectively, were averaged to represent historic traffic volumes on MT 200 in the Fairview area. Historic AADT volumes from short-term counters located on ND 200 and ND 58 were downloaded from the NDDOT webpage. Historic traffic volumes on MT 200, ND 200 and ND 58 in the Fairview area are illustrated in Figure 3. Figure 4 illustrates historic truck traffic volumes. Trucks represent commercial vehicles designated as FHWA types 5-13.

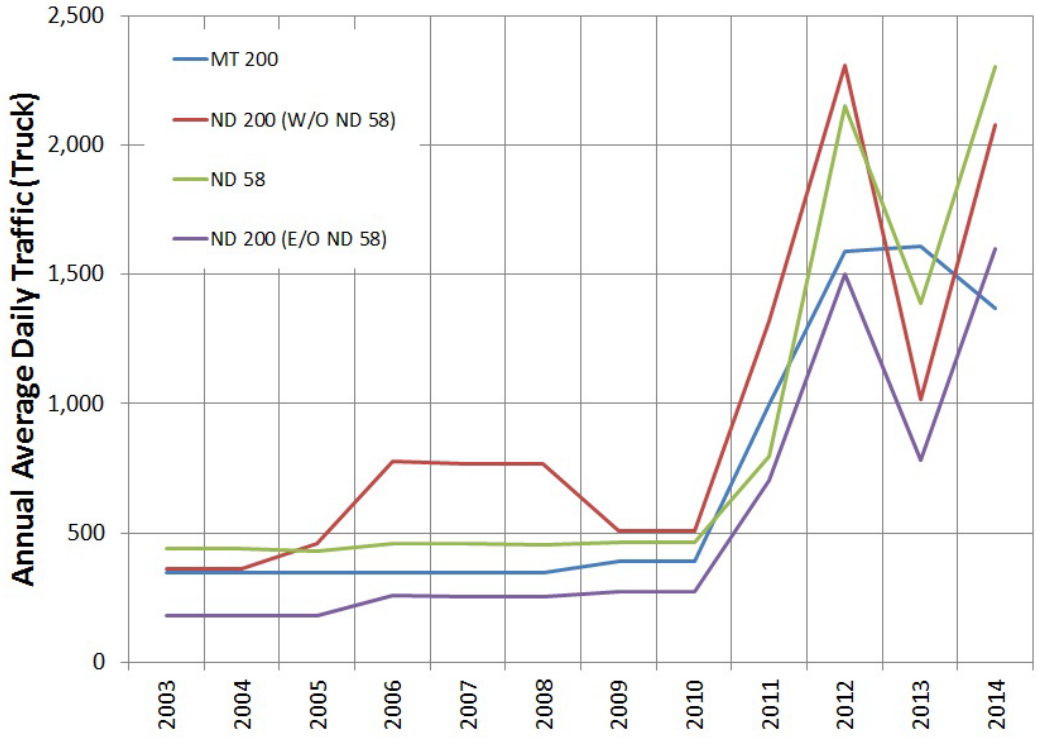
[2] Free-flow speed is defined as the theoretical speed when the density and flow rate on a study segment are both zero. Density is defined as the number of vehicles occupying a given length of a lane or roadway at a particular instant. Free-flow is defined as a flow of traffic unaffected by upstream or downstream conditions.

Figure 3. Historic Traffic Volumes



Source: MDT 2015, ND 2015 (http://www.dot.nd.gov/road-map/traffic/). W/O: west of; E/O: east of.

Figure 4. Historic Truck Traffic Volumes



Source: MDT 2015, ND 2015 (http://www.dot.nd.gov/road-map/traffic/). W/O: west of; E/O: east of.

AADT volumes increased relatively rapidly along MT 200, ND 200, and ND 58 during the 2010 to 2012 time period.

Annual Growth Rates and Projected AADT Volumes

Historic annual growth rates (AGRs) on MT 200, ND 200, and ND 58 were determined through a review of traffic count stations near Fairview. Table 11 presents the five short-term traffic counts station locations and their corresponding reported AADT volumes for 2003 through 2014. Table 12 and Table 13 present the traffic count locations and reported AADT volumes for 2003 through 2014 for ND 200 and ND 58.

Table 11. MT 200 Historic AADT Volumes near Fairview

MT 200 Location		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
County Road 128	Total	2,610	3,200	4,060	3,200	3,000	2,820	3,130	3,140	6,040	8,210	8,330	5,580
	Truck	347	347	347	347	347	347	392	392	997	1,438	1,551	1,206
County Road 132	Total	2,810	3,490	3,490	3,530	3,250	3,060	3,390	3,400	6,770	8,660	7,340	7,010
	Truck	347	347	347	347	347	347	392	392	997	1,438	1,551	1,206
Fairview City Limits	Total	3,670	4,510	5,260	5,430	3,780	3,560	3,920	3,940	7,670	11,740	7,690	7,630
	Truck	347	347	347	347	347	347	392	392	997	1,438	1,551	1,206
9th Street	Total	2,940	3,960	4,630	4,210	3,490	3,280	3,400	3,410	6,860	9,400	7,190	6,370
	Truck	347	347	347	347	347	347	392	392	997	1,438	1,551	1,206
3rd Street	Total	2,400	3,390	3,880	3,300	3,060	3,110	3,110	3,120	5,040	7,540	7,210	7,110
	Truck	347	347	347	347	347	347	392	392	997	2,186	1,829	2,029
Average (Total)		**2,886**	**3,710**	**4,264**	**3,934**	**3,316**	**3,166**	**3,390**	**3,402**	**6,476**	**9,110**	**7,552**	**6,740**
Average (Truck)		**347**	**347**	**347**	**347**	**347**	**347**	**392**	**392**	**997**	**1,588**	**1,607**	**1,371**

Source: MDT, 2015.

Table 12. ND 200 Historic AADT Volumes near Fairview

ND 200 Location		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
West of ND 58	Total	2,400	2,400	3,900	3,300	3,080	3,080	3,110	3,110	4,890	7,660	5,540	6,325
	Truck	360	360	460	775	765	765	510	510	1,320	2,310	1,015	2,080
East of ND 58	Total	825	825	825	1,125	1,125	1,125	1,215	1,215	2,040	3,490	2,550	2,895
	Truck	180	180	180	260	255	255	275	275	705	1,500	780	1,600

Source: ND 2015 (http://www.dot.nd.gov/road-map/traffic/).

Table 13. ND 58 Historic AADT Volumes near Fairview

ND 58 Location		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
North of ND 200	Total	1,725	1,725	1,725	2,250	2,250	2,250	2,410	2,410	3,515	5,970	4,355	5,750
	Truck	440	440	430	460	460	455	465	465	795	2,150	1,390	2,305

Source: ND 2015 (http://www.dot.nd.gov/road-map/traffic/).

Historic AGRs on MT 200, ND 200, and ND 58 were calculated using the following compound annual growth rate calculation.

Compound Annual Growth Rate Calculation Formula
$[(\text{Ending Volume}/\text{Starting Volume})^{(1/(\text{Ending Year}-\text{Starting Year}))}] - 1 = \text{Compound AGR}$

MT 200 Calculation: $[(6{,}740/2{,}886)^{(1/(2014-2003))}] - 1 \approx$ **8.0%**

ND 200 (W/O ND 58) Calculation: $[(6{,}325/2{,}400)^{(1/(2014-2003))}] - 1 \approx$ **9.2%**

ND 200 (E/O ND 58) Calculation: $[(2{,}895/825)^{(1/(2014-2003))}] - 1 \approx$ **12.1%**

ND 58 Calculation: $[(5{,}750/1{,}725)^{(1/(2014-2003))}] - 1 \approx$ **11.6%**

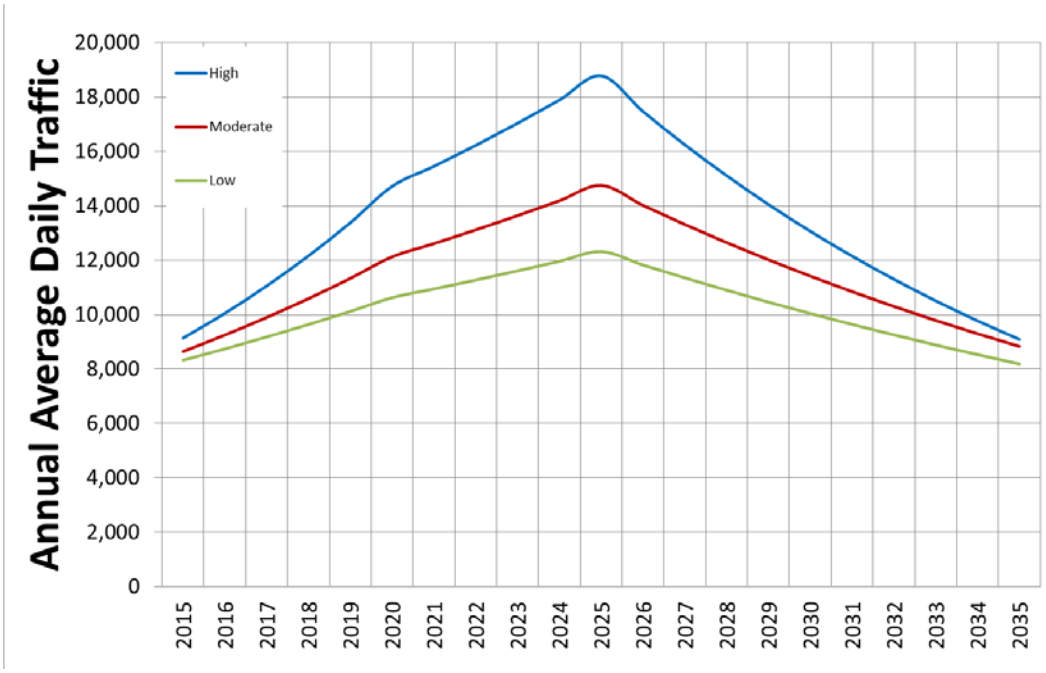
Projected traffic volumes were determined based on a review of traffic volume growth trends identified in the 2012 report entitled, *An Assessment of County and Local Road Infrastructure Needs in North Dakota,* prepared by the Upper Great Plains Transportation Institute (UGPTI), North Dakota State University, and the 2013 report entitled Impacts of Bakken Region Oil Development on Montana's Transportation and Economy, prepared by MDT. The reports identify 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. Other recent publications use different methodologies for forecasting traffic volumes, but the methodology used in these two reports appears appropriate for this planning study based on the information currently available. The 2012 and 2013 reports

are considered conservative based on the pace of more recent development influenced by fluctuating oil prices.

Based on these published projections and review of historic growth trends, it appears that a reasonable high growth scenario for MT 200, ND 200, and ND 58 would be a 10% AGR between 2015 and 2020, a 5.0% AGR between 2020 and 2025, and a -7.0% AGR between 2025 and 2035. The decrease in AGRs between the 2015 to 2020 and the 2020 to 2025 time periods was chosen to represent a slowing of traffic volume growth before declining in 2025 to 2013 levels by the year 2035.

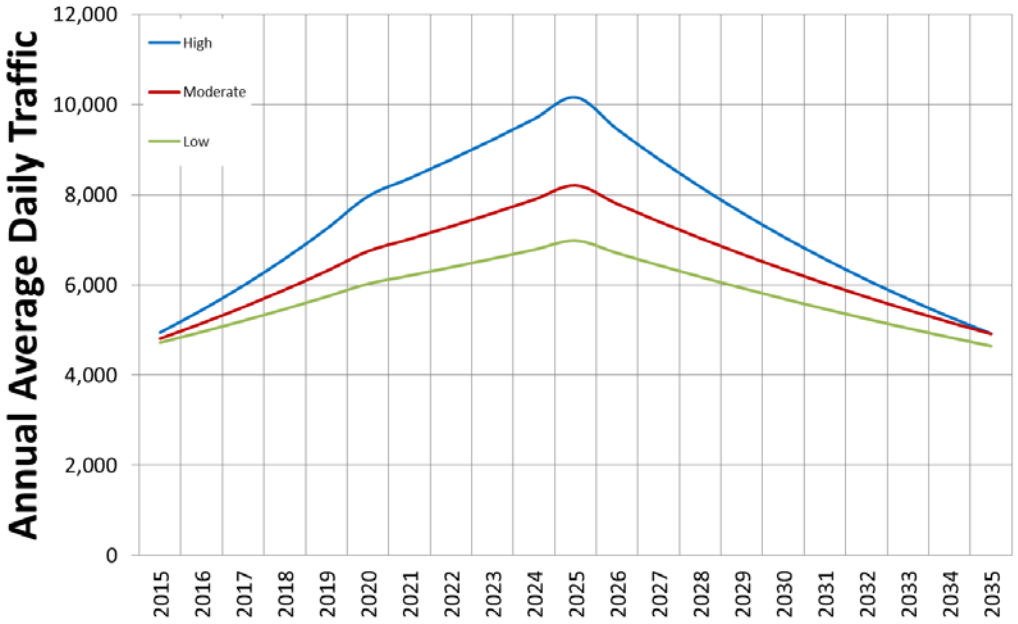
The same methodology was used to estimate future traffic volumes for moderate- and low-growth scenarios. AGRs of 7% (2015 to 2020), 4% (2020 to 2025), and -5% (2025 to 2035) were used for the moderate-growth scenario, while AGRs of 5% (2015 to 2020), 3% (2025 to 2025), and -4% (2025 to 2035) were used for the low-growth scenario. Projected AADT volumes on MT 200, ND 200, and ND 58 near Fairview are illustrated in Figure 5 and Figure 6.

Figure 5. Projected Traffic Volumes – MT 200, ND 200 (W/O ND58), and ND 58



Source: DOWL 2015.

Figure 6. Projected Traffic Volumes ND 200 (E/O ND 58)



Source: DOWL 2015.

Traffic conditions and anticipated transportation demands should be confirmed as any projects are forwarded from the study given the uncertainties of oil and gas development and associated growth within the study area.

Intersection Volumes

Two intersections were assessed within the study area, including the ND 200/ND 58 intersection and the MT 200/MT 201 intersection. Figures and tables presenting existing 2015 geometric configurations and intersection control, and AM and PM peak-hour turning movement volumes for years 2015, 2020, 2025, and 2035 are provided in Attachment 5.

3.6 Segment Level of Service

Traffic conditions on transportation facilities are commonly defined using the Level of Service (LOS) concept. The Highway Capacity Manual (HCM) 2010 defines LOS based on a variety of factors to provide a qualitative assessment of the driver's experience. Within the study corridor, MT 200 and ND 200 fall under the HCM classification of a Class I two-lane highway, with the exception of the MT 200 segment through Fairview, which is considered an urban street section.

Class I two-lane highways are major intercity routes, primary connectors of major traffic generators, daily commuter routes, or major links in state or national highway networks where motorists expect to travel at relatively high speeds. These facilities serve mostly long-distance trips or provide connections between facilities that serve long-distance trips. The HCM defines LOS for Class I two-lane highway on the basis of the percent time-spent-following (PTSF) concept. PTSF represents the freedom to maneuver and the comfort and convenience of travel. It reflects the average percentage of time that vehicles must travel in platoons behind slower vehicles due to an inability to pass. The two major factors affecting PTSF include passing capacity and passing demand. The

concept of passing capacity for a two-lane highway reflects that the ability to pass is limited by the opposing flow rate and by the distribution of gaps in the opposing flow. The concept of passing demand reflects that the demand for passing maneuvers increases as more drivers are caught in a platoon behind a slow-moving vehicle (i.e., as PTSF increases in a given direction). Both passing capacity and passing demand are related to flow rates. When flow in each direction increases, passing demand increases and passing capacity decreases.

Urban street sections typically serve multiple travel modes (e.g., automobile, pedestrian, bicycle, and transit). Travelers associated with each mode use different criteria to evaluate the service provided to them when they travel along an urban street. Operational characteristics that serve one mode well can sometimes have an adverse impact on the service provided to another mode. The automobile mode was analyzed for the segment of MT 200 through Fairview. Two performance measures are used to characterize automobile LOS for an urban street section: travel speed and volume-to-capacity (V/C) ratio.

Six LOS categories ranging from A to F are used to describe traffic operations for two-lane and urban segments, with LOS A representing the best conditions and LOS F representing the worst. LOS F exists whenever demand flow exceeds the capacity of the segment, operating conditions are unstable, and heavy congestion exists. Table 14 and Table 15 present LOS criteria for Class I two-lane highway segments and urban street segments, respectively.

Table 14. LOS Criteria for Class I Two-lane Highways

Level of Service	ATS[(1)] (mi/h)	PTSF[(2)] (%)
A	>55	≤35.0
B	>50-55	>35.0 to 50.0
C	>45-50	>50.0 to 65.0
D	>40-45	>65.0 to 80.0
E	≤40	>80
F	Demand Exceeds Capacity	Demand Exceeds Capacity

Source: HCM 2010, Exhibit 15-3, Automobile LOS for Two-lane Highways.
(1) ATS: average travel speed. (2) PTSF: percent time spent following.

Table 15. LOS Criteria for Urban Street Sections

Travel Speed as a Percentage of Base Free-Flow Speed (%)	Level of Service by Volume-to-Capacity Ratio	
	V/C ≤ 1	V/C >1
>85	A	F
>67-85	B	F
>50-67	C	F
>40-50	D	F
>30-40	E	F
≤30	F	F

Source: HCM 2010, Exhibit 17-2.

Highway Capacity Software (HCS) Version 2010 was used to analyze LOS for Class I two-lane highway segments in the corridor. Synchro 8 was used to analyze LOS for urban street sections.

The percentage of heavy vehicles in the traffic stream was considered as part of the analysis. Heavy vehicles are defined as vehicles that have more than four tires touching the pavement. Trucks, buses, and recreational vehicles (RVs) are examples of heavy vehicles. Trucks cover a wide range of vehicles, from lightly-loaded vans and panel trucks to the most heavily-loaded haulers.

Table 16 and Table 17 present the results of the operational analysis for worst peak-hour/directional existing (2015) and projected (2020, 2025, 2035) conditions using projected high-growth-scenario traffic volumes. LOS values represent estimated operational conditions within each specified corridor segment. Attachment 6 contains HCS and Synchro operational analysis worksheets for the segment analysis.

Table 16. Class I Two-lane Operational Analysis Results (2015)

MT/ND 200 Segment		Condition	Worst Condition				
			Direction	Peak Hour	Average Travel Speed	PTSF(%)	LOS
A	MT 200 2-lane Segment South of Fairview	Existing 2015	WB	PM	47.6	62.6	C
		Projected 2020	WB	PM	45.5	73.2	**D**
		Projected 2025	WB	PM	43.8	78.1	**D**
		Projected 2035	WB	PM	47.6	62.8	C
C	MT 200 2-lane Segment Between 2nd Street and ND 58	Existing 2015	WB	PM	45.2	66.8	**D**
		Projected 2020	WB	PM	42.6	77.8	**D**
		Projected 2025	WB	PM	40.2	83.5	**E**
		Projected 2035	WB	PM	45.3	66.9	**D**
D	ND 200 2-lane Segment East of ND 58	Existing 2015	WB	PM	51.7	33.2	B
		Projected 2020	WB	PM	50.0	46.7	B
		Projected 2025	WB	PM	48.9	53.7	C
		Projected 2035	WB	PM	56.3	33.1	A

Source: DOWL, 2015. (1) Percent time spent following.

Table 17. Urban Street Operational Analysis

Segment		Condition	Worst Condition				
			Direction	Peak Hour	Free-Flow Speed (mi/hr)	Arterial Speed (mi/hr)	LOS
B	MT 200 4 Lane Segment in Fairview	Existing 2015	WB	PM	35	29	B
		Projected 2020	WB	PM	35	28	B
		Projected 2025	WB	PM	35	27	B
		Projected 2035	WB	PM	35	29	B

Source: DOWL, 2015.

The MDT target for principal arterial-non interstate facilities (MT 200) is LOS B. NDDOT has defined a minimum acceptable LOS C at the ND 200/ND 58 intersection.

The two-lane segment of MT 200 south of Fairview and between 2nd Street and ND 58 currently operate at LOS C and D. Operations are projected to degrade to LOS D and E by 2025 with anticipated increases in traffic volumes.

3.7 Intersection Level of Service

Traffic conditions at intersections are also commonly defined using the LOS concept. The HCM 2010 defines intersection LOS based on a variety of factors to provide a qualitative assessment of the driver's experience. The intersection of ND 58/ND 200 is currently a two-way stop-controlled intersection, with stop signs on the northbound and southbound approaches, however a roundabout is planned for construction in 2016. The intersection of MT 200/MT 201 is an all-way (four-way) stop-controlled intersection. LOS for unsignalized intersections and roundabouts is based primarily on the approach with the longest delay. Delay quantifies the increase in travel time due to the intersection control. It is also a surrogate measure of driver discomfort and fuel consumption. Six LOS categories ranging from A to F are used to describe traffic operations, with A representing the best conditions and F representing the worst. Table 18 presents LOS criteria for unsignalized intersections.

Table 18. LOS Criteria for Unsignalized Intersections

Level of Service	Unsignalized Intersection Average Delay (sec/veh)
A	≤ 10
B	> 10 to 15
C	> 15 to 25
D	> 25 to 35
E	> 35 to 50
F	> 50

Source: HCM 2010, Exhibit 19-1 LOS Criteria for Unsignalized Intersections. sec/veh = seconds per vehicle

Intersection LOS analyses were conducted using the procedures outlined in the HCM, as appropriate, and through the use of Synchro 8 traffic engineering analysis software based on HCM delay, capacity, and LOS calculations. Attachment 7 contains Synchro operational analysis worksheets for the intersection analysis. Table 19 presents existing and projected delay for the worst approach and the corresponding LOS at the study intersections. LOS results for the ND 58 and ND 200 intersection are presented for a stop-controlled configuration for 2015 conditions, and a roundabout configuration for future conditions. Projected high-growth-scenario traffic volumes were used for the operational analysis. Projected LOS values presented in Table 19 may differ from project-specific operational analyses conducted future planned projects in MT and ND due to differences in base volumes and assumed growth rates and patterns.

Table 19. Intersection LOS and Delay for 2015, 2020, 2025, and 2035 (AM/PM)

Intersection		Condition	AM Peak Hour Worst Approach			PM Peak Hour Worst Approach		
			App	Delay (sec/veh)	LOS	App	Delay (sec/veh)	LOS
1	ND 58 and ND 200[(1)]	Existing 2015	NB/EB	12.7	B	SB	13.2	B
		Projected 2020	EB	13.0	B	SB	15.5	C
		Projected 2025	EB	21.2	C	SB	30.5	D
		Projected 2035	EB	8.1	A	SB	8.5	A
2	MT 200 and MT 201	Existing 2015	NB	9.9	A	SB/EB	9.4	A
		Projected 2020	NB	12.1	B	SB	11.9	B
		Projected 2025	NB	14.7	B	SB	15.2	C
		Projected 2035	NB	9.9	A	SB/EB	9.4	A

Source: DOWL 2015. LOS based on the worst approach delay.
(1) 2015 conditions are reported for stop-controlled configuration; 2020, 2025, and 2035 conditions are reported for 1-lane roundabout configuration.

The MDT target for principal arterial-non interstate facilities (MT 200) is LOS B. NDDOT has defined a minimum acceptable LOS C at the ND 200/ND 58 intersection.

3.8 Origin-Destination Analysis

An origin-destination analysis was conducted to assess truck traffic patterns within the study area. This effort involved collecting data at points south, west, north, and east of Fairview using tube counters, cameras, and license plate readers (LPRs) for a three-day period in March 2015. Data within the peak period of interest was processed to produce an origin-destination matrix illustrating truck movement trends.

Figure 7and Figure 8 illustrate these movements, with additional data provided in Attachment 8. The numbered circles (3, 4, 5, and 6) symbolize origin/destination points used for the study. 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.

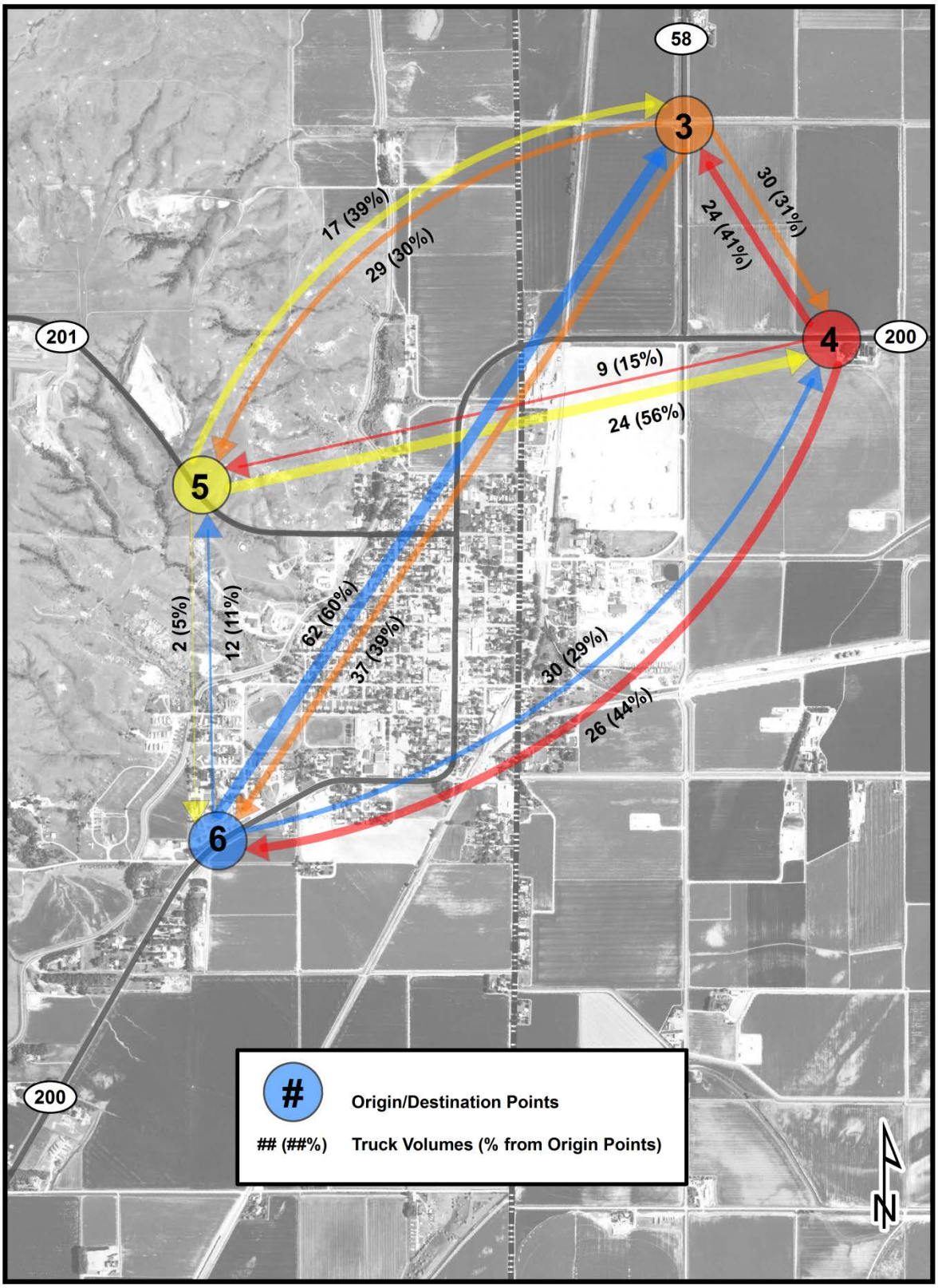
Table 20 summarizes movement trends, with bold text indicating the strongest movements.

Table 20. Truck Movement Trends (2015 – Peak Periods)

Time	Origin Point	Origin Relative to Fairview	Trends
6:00 to 8:30 AM	3	North (ND 58)	• Relatively equal movements (29 to 37, or 30% to 40% of AM trips from Point 3 to Points 4, 5, and 6).
	4	East (ND 200)	• Relatively equal northward and southward movements (24, or 41% of AM trips from Point 4 to Point 3, and 26, or 44% of AM trips from Point 4 to 6) • Limited westward movement (9, or 15% of AM trips from Point 4 to Point 5)
	5	West (MT 201)	• **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)
	6	South (MT 200)	• **Strong northward movement** (62, or 60% of AM trips from Point 6 to Point 3) • Secondary eastward movement (30, or 29% of AM trips from Point 6 to Point 4)
3:00 to 6:30 PM	3	North (ND 58)	• **Strong southward movement** (90, or 57% of PM trips from Point 3 to Point 6) • Secondary eastward movement (48, or 31% of PM trips from Point 3 to Point 4)
	4	East (ND 200)	• **Strong southward movement** (52, or 53% of PM trips from Point 4 to Point 6) • Secondary northward movement (35, or 36% of PM trips from Point 4 to Point 3)
	5	West (MT 201)	• 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)
	6	South (MT 200)	• Mostly northward movement (45, or 61% of PM trips from Point 6 to Point 3) • Secondary eastward movement (23, or 31% of PM trips from Point 6 to Point 4)

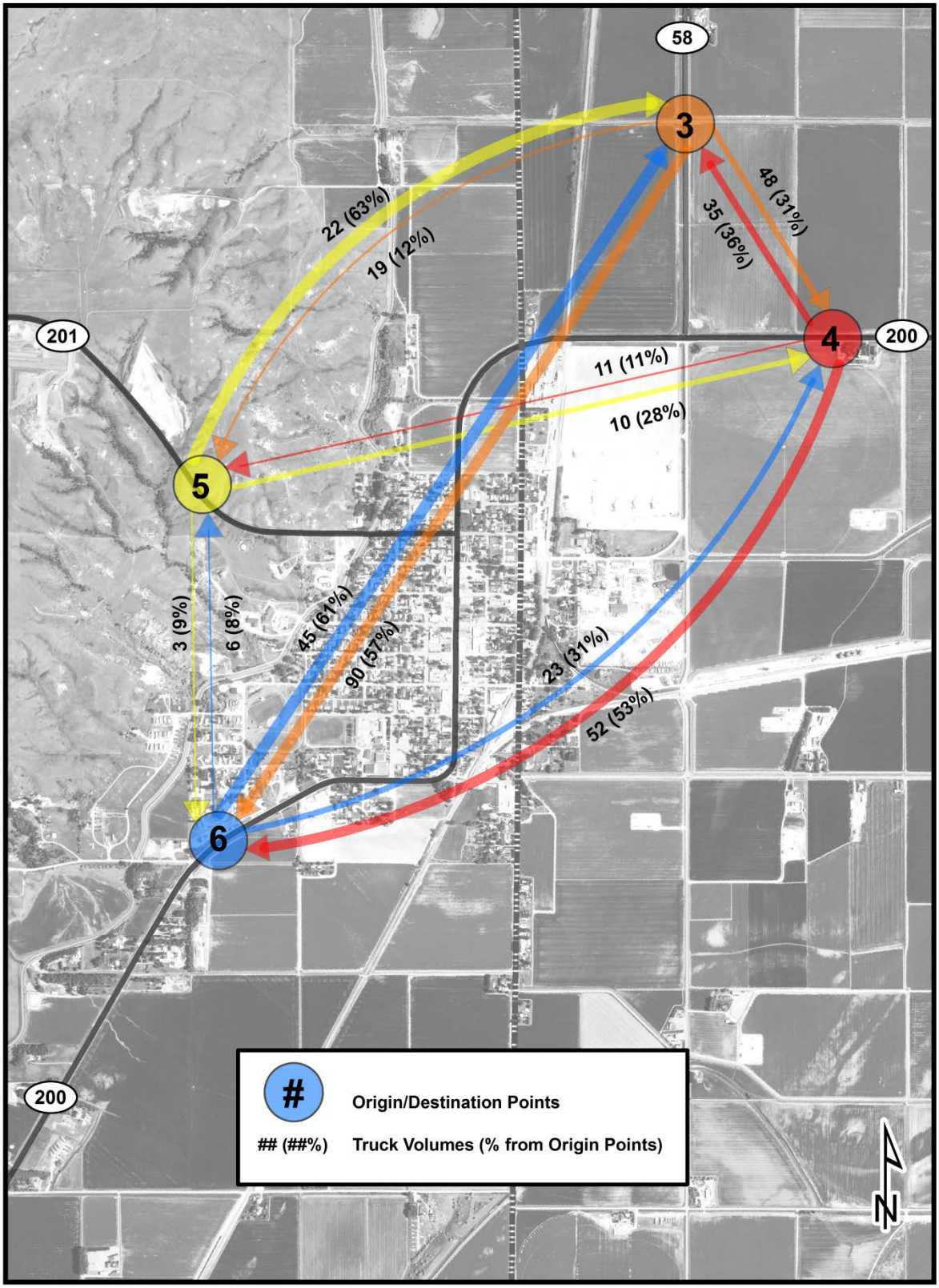
Source: IDAX Data Solutions, 2015. Bold text indicates strongest movements.

Figure 7. Origin-Destination Results (AM)



Source: IDAX Data Solutions, 2015. Data processed for peak period (3/3/2015 6:00am to 8:30 am).

Figure 8. Origin-Destination Results (PM)



Source: IDAX Data Solutions, 2015. Data processed for peak period (3/3/2015 3:00pm to 6:30pm).

3.9 Travel Time Analysis

An assessment of the travel time for vehicles on MT 200/ND 200 was conducted using SimTraffic 9 software traffic engineering analysis software. Traffic conditions on MT 200/ND 200 from CR 133 to ND 58 were modeled to identify travel time during the AM and PM peak hours for existing (2015) and projected (2020, 2025, and 2035) conditions. Results of this analysis are presented in Table 21. Synchro worksheets are provided in Attachment 9.

Table 21. MT 200/ND 200 Travel Time

MT 200/ND 200 Segment		Travel Time (seconds)	
		PM Peak Hour	
		NB/EB	SB/WB
CR 133 to ND 58	Existing 2015	308.9	357.5
	Projected 2020	336.6	365.3
	Projected 2025	337.8	385.2
	Projected 2035	324.7	355.3

Source: DOWL 2015. Note: travel time analysis is not affected by the planned construction of a roundabout at ND200/ND 58; analysis only considers the time required to reach intersection.

4.0 Environmental Conditions

An environmental scan report was prepared in support of the Fairview Corridor Planning Study to identify environmental resource constraints and opportunities within the study area. Information was gathered in February 2015 from previously-published documents, websites, GIS data, and a field review conducted on February 25, 2015. The following sections summarize key information from the environmental scan report.

4.1 Physical Environment

Soil Resources and Prime Farmland

Natural Resources Conservation Service (NRCS) soil surveys (ND053 and MT083) from both Richland County, Montana, and McKenzie County, North Dakota, indicate the majority of the study area is either farmland of statewide importance or prime farmland if irrigated. There is a clear distinction in the way each state has classified their soils, with prime farmland if irrigated primarily occurring in Montana and farmland of statewide importance primarily occurring in North Dakota.

Improvement options should consider impacts to farmland and farmland infrastructure, and potential effects if farmland is removed from production. Any forwarded improvement options that require right-of-way within identified farmlands and are supported with federal funds will require a CPA-106 Farmland Conversion Impact Rating Form for Corridor Type Projects completed by MDT or NDDOT and coordinated with NRCS. The NRCS uses information from the impact rating form to keep inventory of prime and important farmlands within each state.

Geologic Resources

Tertiary Tongue River Member of the Fort Union Formation (Tftr), Quaternary alluvial terrace deposits (Qat), and Quaternary alluvium (Qor) make up a majority of the study area. Yellow, orange, or tan, fine- to medium-grained sandstone with thinner interbeds of siltstone and mudstone (Tftr) primarily make up the steeper slopes in the western portion of the study area, and is typical of the badland topography found in eastern Montana and western North Dakota. Alluvium and other unconsolidated deposits are found primarily below the steeper sandstone slopes within the central and eastern portions of the study area. These deposits include a mixture of gravel, sand, silt, and clay (Qat and Qor), and are associated with the plains and terraces of modern rivers and streams. Pockets of glacial till (Qgt) make up the higher elevations on the western slopes.

Typical surficial soils in the study area are AASHTO Soil Classification A-7-6, A-6, and A-4 (Unified Soil Classification CH, CL, and ML). In general, study area soils are considered to have moderate frost susceptibility which can affect pavement and other foundation engineering design. Moisture-sensitive soil can be expected and may affect future construction activities. Future cut slope and embankment design associated with forwarded improvements will need to incorporate stability, erosion, and settlement evaluation due to the prevalence of fine-grained soil in the study area.

No faults have been mapped within or near the study area in eastern Montana or western North Dakota. In addition, the study area, along with most of eastern Montana and western North Dakota, is located within a Seismic Hazard Zone that is not prone to liquefaction and intense ground motion.

In 2005, MDT completed a statewide study of rockfall hazards and mitigation measures. The Rockfall Hazard Rating System report did not identify any sites within the study area that were identified as potential hazards. A similar hazard study has not been conducted by NDDOT.

Surface Waters

There is very little surface water within the study area. One unnamed stream crosses the northwestern corner of the study area, and some small ephemeral drainages cut through the western sandstone slopes. The Main Canal, which flows south to north through the study area, is a large surface water shown on U.S. Geological Survey (USGS) topographic maps as a stream. However, the Main Canal is a man-made irrigation feature that flows seasonally and is discussed in more detail in a later section of this report. No streams or drainages were identified in the eastern portion of the study area (within North Dakota). Freshwater ponds within the study area include a small man-made pond located in East Fairview (North Dakota) and the Town of Fairview sewer lagoons located on CR 133.

Improvement options should consider potential impacts to surface waters and the costs that may be associated with permitting and potential mitigation. Coordination with federal, state, and local agencies may be necessary, as work within these surface waters may be regulated by the United States Army Corps of Engineers (USACE), including both the Montana and North Dakota Regulatory Offices; Montana Fish, Wildlife & Parks (FWP); the Montana Department of Environmental Quality (DEQ), and the North Dakota Department of Health (NDDH). In addition, forwarded improvement options may trigger the need to obtain coverage under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction

Activity, the North Dakota Pollutant Discharge Elimination System General Permit for Storm Water Discharges from Construction Activities, and comply with the requirements outlined in MDT's and NDDOT's Storm Water Management Plans.

Total Maximum Daily Loads

The study area (including North Dakota and Montana) is located within the Lower Yellowstone Watershed (hydrologic unit code (HUC) 10100004). Neither the DEQ nor the NDDH, in their Integrated Section 304(b) and Section 303(d) Water Quality Reports, list any waterbodies within the study area as having an impairment. The closest downstream impaired water is the Yellowstone River, which DEQ lists as impaired for stream alteration, chromium, copper, fish-passage barrier, lead, nitrogen, phosphorus, sediment, total dissolved solids, and pH. The NDDH does not list the Yellowstone River as impaired.

Should improvement options be advanced from this study, it will be necessary to consider downstream TMDL standards within the Yellowstone River and potential impacts to water quality within receiving waterbodies in the study area.

Wild and Scenic Rivers

There are no wild or scenic rivers within the study area.

Wetlands

No large emergent, shrub-scrub, or forested wetlands were observed during the February 25, 2015, field review; however, dead wetland vegetation, including sedge (*Carex* sp.), horsetail (*Equisetum* sp.), and cattail (*Typha angustifolia*), was observed along the edges of several irrigation ditches/canals within the study area. Based on previous delineations conducted for the MDT Sidney to Fairview project, narrow emergent wetland fringe is common along the banks of irrigation ditches/canals within the study area vicinity and emergent wetland fringe would likely be found to some degree along most irrigation ditches/canals within the study area.

Improvement options should consider potential impacts to wetlands and the costs that may be associated with permitting and potential mitigation. Future wetland delineations would be required if improvement options are forwarded from the study that could potentially impact irrigation ditches where fringe wetland may occur. Future improvements would need to incorporate project design features to avoid and minimize adverse impacts to wetlands to the maximum extent practicable. Work within USACE jurisdictional wetlands would require a Clean Water Act 404 permit. Unavoidable impacts to wetlands must be compensated through mitigation in accordance with USACE regulatory requirements and requirements of Executive Order 11990. However, the 2005 USACE Montana Mitigation Ratio Policy states that relocation of regulated ditches and canals that support wetlands will be considered self-mitigating (compensatory mitigation not required) if the new channel is dimensionally similar in cross-section and profile, and in the same type of substrate. Mitigation would need to be sought early in the planning process, as MDT currently does not have wetland mitigation sites within the Lower Yellowstone Watershed. The locations of NDDOT wetland mitigation banks are not available.

Groundwater

There are 4,467 wells on record in Richland County, Montana, and 1,207 wells on record in McKenzie County, North Dakota. Approximately 164 of these wells are located within or immediately adjacent to the study area, particularly within and surrounding the town of

Fairview. As of February 2015, the newest well on record for Richland County was February 20, 2015, and the oldest well on record was from January 1, 1890. The majority of wells within Richland County (approximately 2,671) are at a depth of 0 to 99 feet. The deepest well within the study area (Richland County) is at 1,360 feet. The wells in Richland and McKenzie Counties have widely varying uses, with stock water being the most common, followed by domestic use. Several public water supply and groundwater wells occur within Fairview.

Impacts to existing wells will need to be considered during future project development of improvement options. While there are fewer groundwater wells to the east and southeast of Fairview, impacting one of these wells may be costly if replacement is required.

Irrigation

The study area is within the Lower Yellowstone Irrigation District. Irrigation water is supplied to farmers and ranchers in the area through the Lower Yellowstone Project, a system of canals, laterals, ditches, and drains that crisscross portions of eastern Montana and western North Dakota. Water is diverted from the Yellowstone River by the Yellowstone Diversion Dam, 18 miles below Glendive, Montana. The diverted water flows into the Main Canal, which is a 71.6-mile long canal that flows northeasterly along the western edge of the Yellowstone River Valley to its confluence with the Missouri River. Approximately 225 miles of laterals distribute water to project lands. Seepage is collected and disposed of by 118 miles of irrigation drains. Irrigation waters are distributed primarily through a gravity flow system. The Lower Yellowstone Project provides irrigation water to approximately 52,133 acres of land lying along the west bank of the Yellowstone River.

Within the study area, the Main Canal flows south to north along the western edge of the Yellowstone River Valley and the town of Fairview. Six lateral ditches flow west to east though the study area, providing diverted irrigation water to farmland in the area. A number of farm turnouts divert water from the laterals to individual farms via a smaller ditch network that provides water for flood irrigation or use of large pivots. Two irrigation drains cross through the eastern portion of the study area collecting irrigation waste water and seepage, which is discharged back into the Yellowstone River. The Main Canal, the six lateral ditches, and the two irrigation drains all discharge water back into either the Missouri or Yellowstone Rivers. Irrigation ditches/canals with return flow to a water of the United States are considered jurisdictional by the USACE.

Irrigation facilities are likely to be impacted by improvement options forwarded from the study, given the extent of irrigation infrastructure within the study area. Impacts to irrigation facilities should be avoided to the greatest extent practicable, particularly where large pivots are located as these are costly to mitigate. Any future modifications to existing irrigation canals, ditches, or drains would be redesigned and constructed in consultation with the irrigation district, BOR, and owners to minimize impacts to agricultural operations. In addition, work within these irrigation ditches/canals may be regulated by the USACE Montana and North Dakota Regulatory Offices, the DEQ, and the NDDH.

Floodplains and Floodways

Federal Emergency Management Agency (FEMA)-issued flood insurance rate maps (FIRM) for Richland County, Montana, and preliminary flood hazard data maps for McKenzie County, North Dakota, indicate that three floodplain zones exist within the study area:

Zone A: Special Flood Hazard Area (SFHA) - 100-Year Flood, No Base Flood Elevations Determined;

Zone D: Flood Hazards Undetermined, but possible; and

Zone X: Areas Outside the 500-Year Flood.

Flood Zone A designated within Richland County, Montana, stops at the North Dakota border. A FIRM map does not currently exist for this portion of McKenzie County, North Dakota. Preliminary flood hazard data indicates "no special flood hazard areas;" however, this delineated Flood Zone A could extend into North Dakota.

Improvement options crossing the delineated flood hazard area would result in the placement of fill within the regulatory floodplain. Impacts to floodplains would need to be identified and evaluated, and coordination with Richland County, Montana, and McKenzie County, North Dakota, would be required to obtain necessary floodplain permits for project construction. Coordination with both counties would likely be required for improvement options with undetermined flood hazard areas, or areas outside of the 500-year flood; however, floodplain permits would not be anticipated.

Air Quality

The study area is not located in a non-attainment area for any criteria pollutants. Additionally, there are no nearby non-attainment areas. As a result, special design considerations are not anticipated in future project design to accommodate air quality issues.

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

Hazardous Substances

Based on available information obtained in February 2015, ten active underground storage tank (UST) sites, eight leaking underground storage tank (LUST) sites, four petroleum release fund claims, eight abandoned or inactive mine sites, four open cut permits, the town of Fairview sewer lagoon, several oil and gas wells and horizontal drilling paths, one gas transmission pipeline, and three reported oil spills were identified within the study area.

Additional investigation regarding the precise locations of the USTs may be warranted if improvement options are forwarded from this study. Improvement options located where LUSTs, oil and brine spills, or contaminated soils are encountered would likely require removal and cleanup in accordance with MDT (107-22) and NDDOT (203-P01) special provisions regarding contaminated soil and applicable federal, state, and local laws and regulations. This cleanup may result in additional project construction time and cost.

Improvements near oil wells and improvements crossing the underground natural gas transmission pipeline would require additional investigation and coordination with oil and gas representatives.

4.2 Biological Resources

Vegetation

The study area is within the larger River Breaks ecoregion of the Northwestern Great Plains. The River Breaks ecoregion is composed of very highly dissected terraces and uplands that descend to the Missouri and Yellowstone river systems. This ecoregion is dissected to a greater extent than the surrounding ecoregions by uncultivated areas, wooded draws and a number of ephemeral drainages that occur between rolling hills, all of which provide valuable winter and summer wildlife habitat.

Within the study area itself, Montana and North Dakota land cover maps show the area is dominated by a combination of deciduous-dominated draws and ravines, cultivated crops, Great Plains sand prairie, Great Plains mixed prairie grasslands, and pasture/hay habitat. Other land cover in the study area includes quarries, strip mines and gravel pits; developed open space; high-intensity residential; low-density residential; and commercial/industrial.

A large portion of the study area has been disturbed either by cultivation; road and highway construction; and residential, oil, commercial, and industrial development. Cultivated crop land includes crops such as sugar beets, corn, and alfalfa. Other plant species observed within the study area and vicinity during the February 2015 field visit and during previous field visits conducted in the Sidney/Fairview area (2013) include eastern cottonwood (*Populus deltoides*), Russian olive (*Elaeagnus angustifolia*), smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), common dandelion (*Taraxacum officinale*), and showy milkweed (*Asclepias speciose*). Various landscape and ornamental plants are found around residences and within the town of Fairview.

Native vegetation, which is primarily located along the western study area limits, and large stands of trees and shrubs should be considered during improvement option identification to minimize removal of native vegetation and mature trees and shrubs. If improvement options are forwarded from the study, practices outlined in MDT standard specifications (including staking construction limits, avoiding damage to vegetation not designated for removal, and replacing damaged or destroyed vegetation) and NDDOT standard specifications (which include designating construction limits and vegetation to be preserved) should be followed to minimize adverse impacts to vegetation.

Noxious Weeds

The Invaders Database System lists seven weed species considered noxious in Montana and 55 exotic species for Richland County, Montana. North Dakota Department of Agriculture Weed Surveys for McKenzie County list 13 weed species considered noxious in North Dakota, all of which are also exotic species. From previous vegetation surveys conducted in the Sidney/Fairview area (2013), several noxious weeds have been observed in the area and are listed in Table 22.

Table 22. Noxious Weeds Found within the Study Area Vicinity

Common Name	Scientific Name	Montana Priority[1,2]
Canada thistle	*Cirsium arvense*	2B
Cheatgrass	*Bromus tectorum*	3
Dalmatian toadflax	*Linaria dalmatica*	2B
Field bindweed	*Convolvulus arvensis*	2B
Houndstongue	*Cynoglossum officinale*	2B
Leafy spurge	*Euphorbia esula*	2B
Russian olive	*Elaeagnus angustifolia*	3
Spotted knapweed	*Centaurea stoebe or maculosa*	2B

[1]Priority 2B: Weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containments where less abundant. Priority 3: These plants are not noxious weeds but have the potential to have significant negative impacts.
[2] North Dakota does not designate noxious weed priorities.

If improvements are forwarded from the study, field surveys for noxious weeds should commence prior to any ground disturbance and coordination with the Richland County Weed Control Board and the McKenzie County Weed Control Board should occur. To reduce the spread and establishment of noxious weeds and to re-establish permanent vegetation, disturbed areas should be seeded with desirable native plant species.

General Wildlife Species

Mammals

A majority of the study area has been heavily disturbed by various agricultural practices and residential development; however, small wooded draws still bisect the western portion of the study area. These small, wooded drainage corridors still possess specimens of the native vegetation that was likely present in this area prior to its conversion to agriculture. These corridors are important wildlife corridors for mammals moving from the upper badlands down to the Yellowstone River valley.

The study area and vicinity are home to a number of mammal species including, but not limited to, white-tailed deer, mule deer, raccoon, striped skunk, porcupine, bobcat, beaver, muskrat, deer mouse, and northern grasshopper mouse. It is assumed that most species identified in the Montana portion of the study area would likely be found in the North Dakota portion of the study area as well.

White-tailed and mule deer are prevalent within the study area and the surrounding vicinity. The study area and general vicinity are considered either primary, general, secondary, and/or winter range for mule deer, white-tailed deer, pronghorn antelope, and black-tailed prairie dog.

A review of the MDT Maintenance animal incident database between December 21, 2004, and November 15, 2012, indicates that at least five animal carcasses were collected along the existing MT 200 corridor (RP 61.5 to RP 64.1). All five animal carcasses were white-tailed deer. Carcass data may not accurately reflect animal-vehicle conflicts throughout the corridor, and not all carcasses result from vehicle collisions. Additionally, recently-approved legislation has permitted the collection of

game animals killed on MT roadsides for personal consumption. These factors may affect collections and incidents reported in the MDT maintenance animal incident database. NDDOT does not currently have a carcass data program.

If improvement options are forwarded from the study, impacts to habitat and other wildlife mitigation strategies should be considered during the project development process. Additional coordination with the FWP and NDGF area wildlife biologists should be undertaken for local expertise in the study area.

Amphibians and Reptiles

Amphibian species known to occur within the study area and vicinity include, but are not limited to, the northern leopard frog and the plains gartersnake. No observation data is currently available for North Dakota.

Birds

The conversion of the study area to agricultural, commercial, and residential use has greatly reduced the native vegetation in the area. Nesting habitat for bird species is limited to pockets of native grassland and wooded draws that primarily occur within the western portion of the study area, landscaped trees and shrubs in residential/commercial areas, and the occasional vegetated wind break that surrounds some of the homes in the study area. A grove of cottonwood trees is found at the corner of CR 133 and MT 200.

There are more than 61 species of birds documented with the potential to occur and nest in the study area. These species include representative songbirds, birds of prey, waterfowl, owls, and shorebirds. A portion the study area and vicinity is within the distribution range for sharp-tailed grouse. No observation data is currently available for North Dakota; however, it is assumed that most species listed in the Montana portion of the study area would likely be found in the North Dakota portion of the study area as well.

No bald eagle nests are located within the study area. The closest nest recorded is located over ten miles southeast of Fairview on the Yellowstone River; however, there is potential for bald eagles to forage and travel through the study area. Bald eagle nest data for North Dakota is not available. ND sources indicate the study area and surrounding vicinity are primary golden eagle breeding range.

Any improvements forwarded from this study should consider potential impacts to bird nesting and foraging habitat and the presence of unknown or future bald and golden eagle nests. The disturbance or removal of trees or structures associated with nesting birds may need to be scheduled to take place outside of the typical nesting season of April 15 to August 15.

Fisheries

Surface waters within the study area primarily include seasonal irrigation ditches and canals, small ephemeral drainages, and roadside drainage, which are not considered suitable habitat for aquatic species. The closest water bodies that support fisheries are the Yellowstone River (approximately two miles east of the study area) and the Missouri River (approximately six miles north of the study area). Given that the source of water for the Main Canal is the Yellowstone River, which then outlets at the Missouri River, some fish may be present in the Main Canal despite efforts by the BOR, the Lower

Yellowstone Irrigation District, and FWP to prevent fish entrainment. Some individual fish may make their way from the Main Canal down the smaller irrigation ditches during the summer irrigation season. However, general irrigation practices likely affect these small populations to some extent when conveyance is ceased each fall.

Threatened and Endangered Species

No T&E species occurrences have been documented within the study area, and no critical habitat for T&E species occurs within the study area; however, three T&E species have been documented as occurring outside of the study area in the general vicinity. These species include the least tern, whooping crane, and pallid sturgeon. No observation data is currently available for North Dakota. Given the high degree of disturbance and lack of suitable habitat, T&E species listed for both counties would likely not be found within the study area.

No suitable habitat for greater sage-grouse is found within the study area; however, the study area sits along the border of the USFWS Sage-Grouse Great Plains Management Zone.

While T&E species are not likely to occur within the study area, improvements forwarded from the study should consider potential effects to T&E species during the project development process. As federal status of protected species changes over time, reevaluation of the listed status and afforded protection to each species should be completed prior to issuing a determination of effect relative to potential impacts. Recommendations outlined in Montana's sage-grouse conservation plan should also be taken into consideration during development of improvement options.

Species of Concern and Species of Conservation

Ten Montana species of concern (SOC) are documented within the vicinity of the study area, primarily along the Yellowstone River. Several of the SOC documented in Montana are also considered North Dakota species of conservation (SPC). According to the MDT area biologist, given the highly disturbed nature of the study area, the distance from the Yellowstone River, and the limited aquatic resources within the area, SOC and SPC would likely not be present within the study area due to lack of suitable habitat and human-based activities. In addition, while the greater sage-grouse is not documented within the study area or study area vicinity, the study area is adjacent to the USFWS Sage-Grouse Great Plains Management Zone.

A thorough field investigation for the presence of SOC and SPC should be conducted if improvement options are forwarded from this study. If present, special conditions to the project design or during construction should be considered to avoid or minimize impacts to these species. Recommendations outlined in Montana's sage-grouse plan should also be taken into consideration during identification of improvement options.

4.3 Social and Cultural Resources

Population Demographics and Economic Conditions

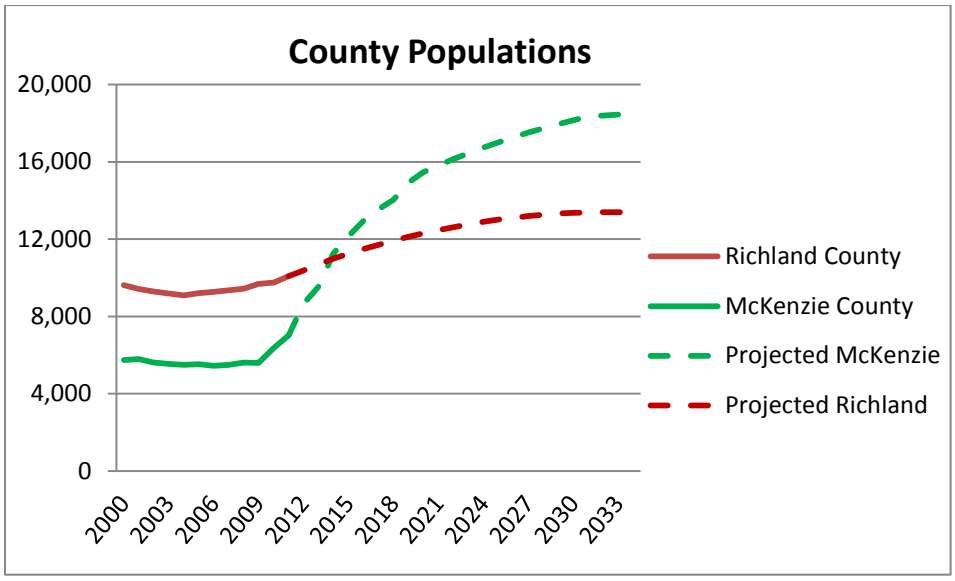
Demographics

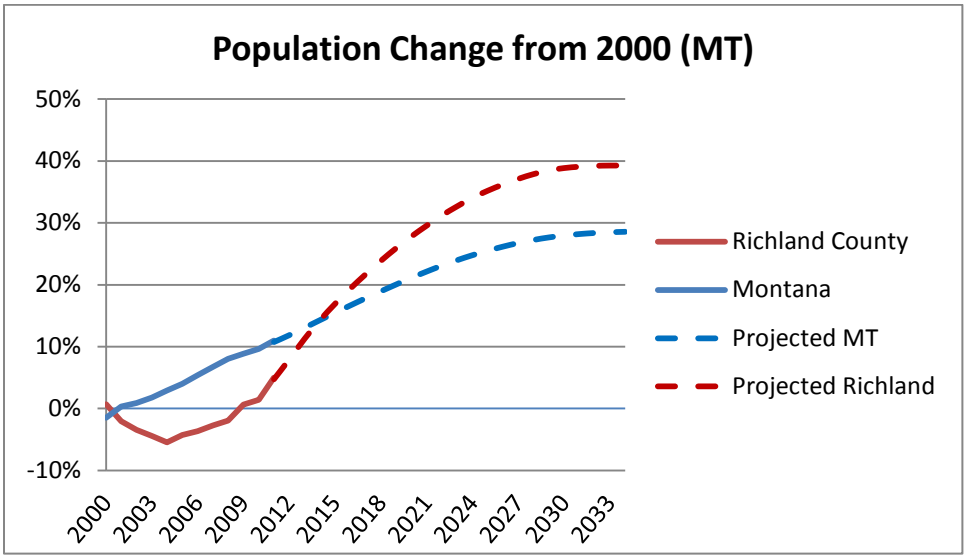
The percentages of minority and low-income populations within the study area are consistent with or below the corresponding percentages for Richland and McKenzie Counties, and for Montana and North Dakota.

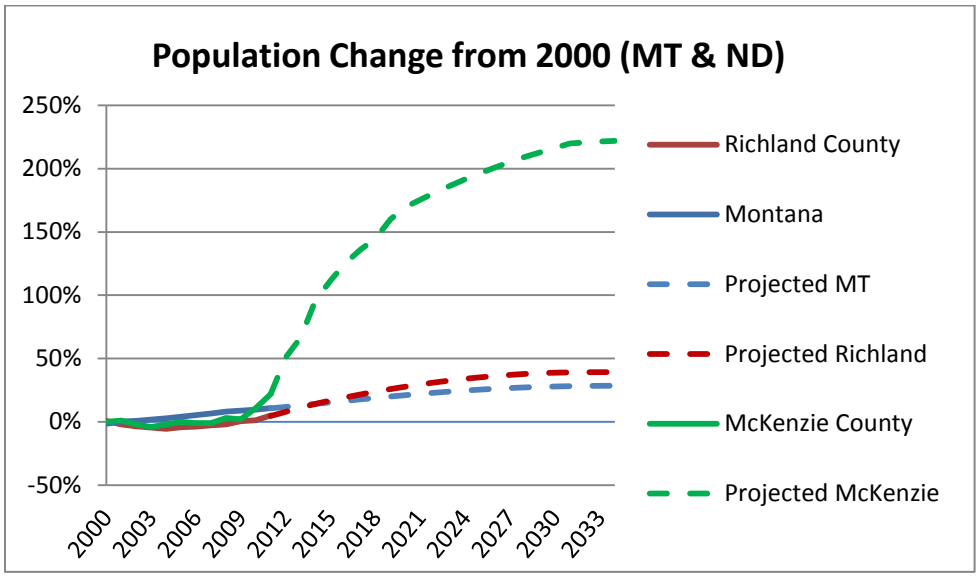
Populations in eastern Montana and western North Dakota, for the most part, have been declining in recent decades, with the exception of communities near significant oil formations. Even many of these communities were struggling with regard to economic and population trends until the last decade. With more recent technological advances in oil extraction (i.e., horizontal hydraulic fracturing, or "fracking"), many communities in eastern Montana and in North Dakota have seen dramatic changes resulting from oil extraction. As the rest of the country has slowly pulled out of recession, areas near the Bakken have seen unprecedented growth in recent years. Fairview and the surrounding areas are no exception.

As of February 2015, the populations of both Richland and McKenzie Counties have seen substantial growth since the last census in 2010. Fairview's population has grown approximately 12% since 2010. Figure 9 below shows population growth and projections.

Figure 9. Historic and Forecast Population







Source: MT and Richland County estimates are provided by MT Dept. of Commerce EREMI projections. McKenzie County data is derived from "Williston Basin 2012" Study by North Dakota State University's School of Agribusiness and Applied Economics as well as historical Census estimates.

The population of McKenzie County, North Dakota, has increased by more than 100% since 2000, and is projected to double again by the year 2030. Richland County, Montana, has also seen substantial growth, although of a lesser magnitude. Since 2010, the population of Richland County has grown by more than 15% after numerous years of decline. This growth rate is projected to peak at 40% above the 2000 population in year 2033, as compared to 28% for Montana as whole in 2033.

Housing and Income

As of February 2015, the housing market was unable to keep up with demand as a result of oild workers moving to the Fairview region. Total housing demand (both temporary and permanent) is expected to peak in 2020, according to research by North Dakota State University. The percentage of vacant homes/apartments in Richland County is 9.6%, compared to 15.8% for the rest of Montana. Table 23 summarizes housing and income data in the study area vicinity.

Table 23. Housing and Income Statistics

	Richland County	Montana	McKenzie County	North Dakota
Housing units, 2013	4,961	485,771	3,547	339,313
Homeownership rate, 2008-2012	67.7%	68.5%	69.6%	66.4%
Per capita income, 2008-2012	$30,411	$25,002	$33,574	$28,700
Median household income, 2008-2012	$56,050	$45,456	$61,893	$51,641

Source: American Community Survey 2008-2012 and Census Quick-Facts 2013.

Median household income in Richland County ($56,050) is 23% higher than the Montana average ($45,456). McKenzie County's median household income ($61,893) is almost 20% higher than North Dakota as a whole.

Economic Conditions

Agriculture has historically been the most predominant industry in both Richland and McKenzie Counties. Energy exploration has boomed at times and busted at others, including an increase in the 1970s and 1980s. More recently, advancements in horizontal hydraulic fracturing technology have resulted in increases in accessible oil reserves in the Bakken region and an oil boom larger than those in the past. This has resulted in an increase in jobs, both directly and indirectly related to oil extraction. Figure 10 shows the industries and respective employment distribution for Richland County. Table 24 represents industries and employment distribution for McKenzie County.

Figure 10. Richland County Economic Base 2008-2010

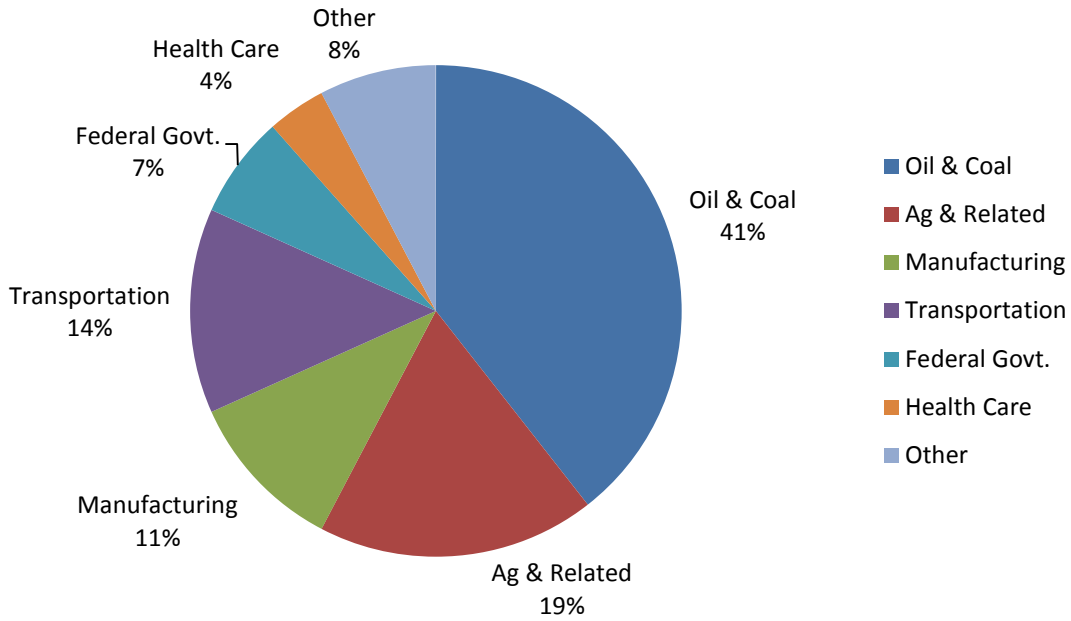


Table 24. McKenzie County Employment by Industry (2009-2013)

Industry	Total Estimate
Agriculture, forestry, fishing, and hunting	866
Construction	266
Manufacturing	127
Wholesale trade	78
Retail trade	305
Transportation and warehousing, and utilities	317
Information	42
Finance and insurance, and real estate and rental and leasing	167
Professional, scientific, and management , and administrative and waste management services	137
Educational Services, health care and social assistance	580
Arts, entertainment, recreation, and accommodation and food services	324
Other services, except public administration	226
Public Administration	233
Civilian employed population (16 years and over)	**3,668**

Source: American Community Survey 2009-2013.

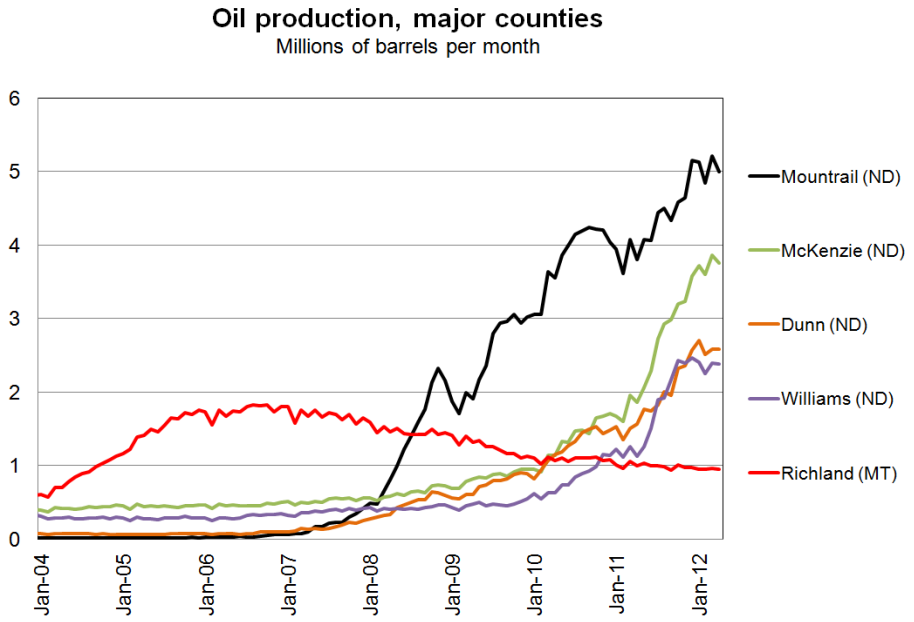
The Richland County, Montana, economic base includes oil and coal extraction and agriculture. Coal extraction in Richland County is not located in the immediate Fairview vicinity. The Savage Mine is located approximately twenty miles south of Sidney, and is a substantial producer of lignite coal (about 350,000 tons annually). In terms of oil production, the Elm Coulee oilfield has been a crucial element to the economy since the early 2000s. Elm Coulee is located primarily in Richland County, just southwest of the study area. It extends northwest to southeast through the county. The construction industry is benefitting from mining and oil production as a result of housing and other oil-related infrastructure development. Transportation industries are also benefitting from increased demand for transporting materials such as fracking sand or oil produced from the wells. As with the rest of Montana and the other Great Plains states, farming and ranching have strong roots in the region. The highest grossing agricultural products for Richland County include wheat, alfalfa, sugar beets, and beef cattle.

As of February 2015, both Richland and McKenzie Counties had very low unemployment rates - 2.6% in Richland County and 1.7% in McKenzie County according to the Bureau of Labor Statistics. These are compared to Montana's unemployment rate of 4.6%, North Dakota's unemployment rate of 2.9%, and the United States' rate of 6.2%.

Oil Development

As of May 2014, according to North Dakota's Department of Mineral Resources, oil production in the North Dakota Bakken has exceeded thirty million barrels per month, equivalent to nearly one million barrels per day. If Montana is included, production is over a million barrels per day. The Minneapolis Federal Reserve reports that 2014 will be a record year for oil production in the Bakken, but oil production growth is beginning to lessen. Oil leasing activity has slowed considerably and the number of active oil rigs has leveled off, although the effects of this may not be seen for a few years. Growth over the past decade has been of great magnitude in most of the region, and housing, population, and other development are still catching up to oil production. Figure 11 shows growth in oil production by county through 2012.

Figure 11. Oil Production, Major Counties



Source: North Dakota Department of Mineral Resources and Montana Board of Oil & Gas Conservation

In the early to mid-2000s, Richland County, Montana, and Elm Coulee Oilfield were the highest producers of oil in the region, but production has been declining since 2007 when new fracking technology and vast reserves led to rapid growth in other counties. Currently, McKenzie County is second only to Mountrail in oil production with Richland at substantially lower levels. Williams County, just north of McKenzie County, and home to Williston, falls almost directly between McKenzie and Richland counties in terms of oil production. Williston is widely considered the hub of oil activity in the Bakken and provides the necessary amenities and services, including potential lodging, which many of the smaller towns do not. In Montana, Sidney is largely considered the hub of oil production despite lacking the oil production increases that North Dakota has seen recently. Although oil production may not be as high in the Montana Bakken, many of the impacts are still felt. Many oil-related trucks and workers from North Dakota pass through Fairview and then Sidney in route to Billings or other cities.

Land Use

Property maps for Richland County, Montana, and McKenzie County, North Dakota, show land within the study area as privately owned or owned by the county or the town of Fairview. No federal- or state-owned lands were identified. Land use within the study area is primarily agriculture, with commercial and residential uses centered within and around the town of Fairview. Several oil pads are located within the study area, including a large storage tank facility northwest of the ND 200 and ND 58 intersection. A railroad spur line and large material loading facility are also located in the study area to the east of Fairview. In addition, the town of Fairview sewer lagoons are located just north of CR 133 at the intersection with CR 356.

In general, the North Dakota portion of the study area is zoned residential, agricultural, commercial, and administrative zoning by township. Zoning maps for Richland County, Montana, are not available. Future land use growth areas for residential, commercial, and industrial use are located beyond the Fairview city boundary. Residential growth

areas have been identified for infill areas around new and existing developments. Commercial growth areas are identified along major transportation corridors, including arterial and collector streets, as well as state highways. Industrial growth areas are focused away from existing and planned future residential development.

Adjacent land ownership and use, including existing zoning and identified future growth areas, will need to be considered during the study process. This would include evaluating how proposed transportation improvements may affect future town of Fairview growth areas and McKenzie County zoning.

Recreational Resources

There are no state or federal public lands within or immediately surrounding the study area. Identified recreational resources include Sharbano Park (corner of MT 200 and 1st Street), the playground and sports field at the East Fairview Elementary School (301 2nd Street), and the sports fields and track at the Fairview High School (713 S. Western Avenue).

Depending on the location of future improvements forwarded from this study, coordination with officials having jurisdiction over the park and schools may be required to assess whether these properties should be protected under Section 4(f) of the U.S. Department of Transportation Act of 1966. Potential effects to any Section 4(f) protected recreational resources would also need to be considered and evaluated in accordance with Section 4(f).

National Land and Water Conservation Fund Act (LWCFA) Section 6(f) grants were used for four projects within the study area. No projects are located in North Dakota. All four projects are found in Montana, within the town of Fairview, at Sharbano Park, and are listed below.

- Fairview pool renovation (Sharbano Park) – approved 10/19/1970 $1,013.36
- Fairview pool bathhouse (Sharbano Park) – approved 4/7/1976 $5,051.29
- Fairview play area (Sharbano Park) – approved 3/14/1979 $976.50
- 1983 statewide community projects that, per Montana State Parks, were all within Sharbano Park –approved 6/30/1983 $11,150.00

Potential impacts to Sharbano Park would need to be considered if improvements are proposed near the park. Additional coordination with FWP would be necessary if improvements are forwarded from this study that could affect the park.

Cultural Resources

Several properties/sites within or adjacent to the study area are eligible for listing on the National Register of Historic Places (NRHP). Table 25 lists the site type, their approximate locations, and NRHP eligibility.

Table 25. Recorded Cultural Resource Sites

Site Type		Site No.	Township	Range	Sections	NRHP Eligibility
MT SHPO	Historic irrigation system (Lower Yellowstone Irrigation Project)	24RL0204	24N	60E	5, 7, 8, 18, and 19	Eligible
			24N	59E	36	
	Historic railroad	24RL0230	24N	60E	6, 17, 19, and 20	Eligible
	Historic residence	24RL0376	24N	60E	8	Eligible
	Historic energy development	24RL0321	24N	60E	17, 19, and 20	Eligible
	Historic homestead/farmstead	24RL0414	24N	60E	19	Eligible
ND SHPO	Historic irrigation system (Lower Yellowstone Irrigation Project)	32MZ1174	151N	104W	29, 30, 31, and 32	Eligible
			150N	104W	5, 6, 7, and 8	
	Historic railroad	32MZ1556	151N	104W	30	Eligible

Source: Montana and North Dakota SHPOs, 2015.

Direct and indirect impacts (such as visual, noise, and access impacts) to eligible or listed properties would need to be considered if improvements options are carried forward. In addition, there are segments of the Lower Yellowstone Irrigation project that have not been surveyed, and there are a number of noted sites within the study area where eligibility has not been determined. A cultural resource survey for unrecorded historic and archaeological sites within the area of potential effect would need to be completed during the project development process. Known sites with undetermined eligibility and sites identified during future surveys would need to be assessed for listing eligibility on the NRHP. Concurrence from the Montana State Historic Preservation Office (SHPO) or the North Dakota SHPO on the eligibility determinations would need to be requested. Flexibility in design will be important to avoid and/or minimize impacts to any significant sites.

Noise

Traffic noise would need to be evaluated for future improvements forwarded from this study. Noise analysis is required for all Type I-classified projects. Type I projects involve construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

Type I projects require a detailed noise analysis, consistent with FHWA requirements and MDT and NDDOT noise policies which include measuring ambient noise levels at selected receivers and modeling design year noise levels using projected traffic volumes. Noise abatement measures would need to be considered if noise levels approach or substantially exceed noise abatement criteria. The noise abatement measures must be considered reasonable and feasible prior to implementation and supported by the affected public.

Visual Resources
The study area is characterized as primarily agricultural, with low- and high-density residential areas, commercial and industrial areas, and a transportation network of roadways and railroads. The landscape towards the central and eastern edge of the study area is primarily flat, with agricultural fields and irrigation ditches extending out east, south, and north as far as the eye can see. Distant views of the cottonwoods along the Yellowstone River corridor are visible far to the east. In the center of the study area is the town of Fairview with its residential and commercial development. The western edge of the study area includes sandstone slopes that rise 200 feet from the Yellowstone River valley floor. Oil wells, with their continually moving pump jacks, are scattered throughout the area. While the study area has been highly disturbed through years of agriculture, the rural and scenic landscape remains, offering aesthetically-pleasing views to residents and motorists.

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

5.0 Local Facilities and Services

Schools and Colleges
The East Fairview Elementary School and the Fairview High School are located within the town of Fairview. Williston State College in Williston, ND, is located approximately 29 miles northeast of Fairview. Dawson Community College in Glendive, MT, is located approximately 66 miles southwest of Fairview.

Hospitals
There are no hospitals in the town of Fairview. The closest hospital is the Sidney Health Center located approximately 12 miles southwest of the study area in Sidney, MT. The Sidney Health Center also operates the MonDak Family Clinic in Fairview, providing outpatient and pharmaceutical services. Mercy Medical Center in Williston, ND, is located approximately 33 miles to the northeast of the study area.

Law Enforcement
The Fairview Police Department serves the community of Fairview and the surrounding area.

Fire Department
The Fairview Volunteer Fire Department serves the study area with 21 volunteer firefighters.

6.0 Local and Regional Planning

McKenzie County Comprehensive Plan, 2013
This plan was developed to guide decision making on long-range development and effectively plan for, and manage, growth while maintaining the community's core values. The plan outlines goals and objectives for community infrastructure, including transportation. In relation to transportation implementation strategies, McKenzie County supports the establishment of a preferred heavy traffic road network and identification of right-of-way needs for future roadway work.

McKenzie County Background Report, 2013
This report provides baseline community and infrastructure data, including information on population, economic factors, housing, education, public services, and transportation. Commuter profiles are based on the U.S. Census Bureau's 2006-2010 American Community Survey and may not accurately reflect recent increases in resource development traffic. ADT for county roads (including ND 200) is provided for 2006-2012.

McKenzie County Zoning Map, 2015
The McKenzie County Zoning Map shows nine county zoning classifications, state and federal lands, tribal lands, township boundaries, and highways. Within the study area, portions of East Fairview are zoned for commercial development and agriculture. The remainder of the study area is administered by the township.

Montana Statewide Transportation Improvement Program (STIP), 2015-2019
The Montana Statewide Transportation Improvement Program (STIP) is developed in accordance with the requirements of Section 135 of 23 USC (United States Code). The STIP details projects that will address Montana's transportation needs for fiscal years 2015 through 2019. There are several projects programmed in the current STIP within the study area. Recent and planned projects are discussed in Section 6.0.

MT 16/MT 200 Glendive to Fairview Corridor Planning Study, 2012
The Glendive to Fairview Corridor Planning Study was completed in 2012 to addresses traffic and safety concerns resulting from increased regional traffic volumes associated with oil industry growth. The study area focused on MT 16 and MT 200 between Glendive and Fairview (RP 0.6 to RP 62.5), and excluded areas within Glendive, Sidney, and Fairview. The study recommended consideration of overhead lighting south of Fairview, enhanced intersection warning at the MT 200/CR 133 intersection (RP 61.7), and turn lanes between Sidney and Fairview.

MT 16/MT 200 Glendive to the North Dakota State Line Corridor Safety Audit, 2012
MDT conducted a corridor safety audit (CSA) for the portion of MT 16 / MT 200 between I-94 and the North Dakota state line concurrent with the Glendive to Fairview corridor planning study. A CSA is a formal safety performance review of a corridor by a multi-disciplinary team. The audit team included representatives from MDT, the City of Sidney, the City of Fairview, FHWA, Montana Highway Patrol (MHP), and local media. The CSA team generated recommendations and countermeasures for roadway segments or intersections demonstrating a history of crashes or an identifiable pattern of crash types. The Glendive to Fairview corridor study incorporated CSA recommendations for the rural portion of the MT 16/MT 200 corridor.

North Dakota 2020 & Beyond, 2012
North Dakota 2020 & Beyond is a visioning document summarizing public input sessions conducted to identify opportunities for future economic and community development. The report outlines a series of goals relating to multiple topic areas. With regard to safety and transportation, North Dakota aspires to build a statewide transportation system that meets the needs for North Dakota's growing population and industries and provides a safe place for workforce, families and visitors.

North Dakota Statewide Transportation Improvement Program, 2015-2018
The North Dakota STIP outlines projects planned for the 2015-2018 period, with the intent to provide the traveling public with the best possible transportation system across

all modes and jurisdictions and to support NDDOT's mission to safely move people and goods. There are several projects programmed in the current STIP within the study area. Recent and planned projects are discussed in Section 6.0.

North Dakota State Freight Plan, 2015 (Draft)
The purpose of the North Dakota Freight Plan is to promote safe, secure, sustainable, and reliable freight mobility to enhance a diversified and vibrant economy. This multi-modal report primarily emphasizes highways, with secondary emphasis on last-mile connections to railroad, pipeline transshipment, and air cargo freight facilities. It outlines immediate and long-term investment planning strategies. Strategic freight system highways are divided into three levels: Level 1 (critical), Level 2 (regional/intrastate), and Level 3 (local). ND 200 is identified as a Level 1 corridor and a gateway to the state and ND 58 is designated Level 2. The plan does not provide a list of recommended projects.

Regional Plan for Sustainable Development, 2015
This plan developed by the Vision West North Dakota Consortium is a visioning document intended to guide future development. It notes that the pace of development has significantly impacted the region's roads and highway in recent years due to oil development in the Bakken. The plan outlines transportation-related strategies, including recommendations to conduct a work session on north-south transportation routes, provide long-term funding for county and township roads designated as oil haul roads, and review future rail transportation needs.

Richland County Master Transportation Plan, 2015 (Draft)
This plan summarizes existing and future conditions relating to community health and infrastructure concerns analyzed in the Richland County Growth Policy Update and how they impact the transportation system. The plan outlines current and projected land use and traffic operations, reviews safety data and highlights areas of concern, provides an analysis of functional classification, and provides options for roadway typical sections. Project recommendations are phased over 30 years, with guidance on available funding. Within the study area, the intersection of MT 200 and CR 134 is identified for a realignment project within the 2020-2030 time period.

Richland County Hazard Plan, 2014
Transportation infrastructure is a vital element in responding to any emergency. This plan includes an assessment of hazards and vulnerabilities, including drought, floods, severe storms, and terrorism. Transportation-related mitigation strategies include identification of parking/shelter areas for semi-truck drivers during winter storms and marking/advertising snow routes.

Richland County Transportation Service Coordination Plan, 2013
The purpose of this plan is to identify transportation needs of people with disabilities, older adults, or individuals with limited incomes. It provides strategies for meeting those needs and prioritizes services for funding. The recommendations in this plan do not directly affect this study.

Richland County Community Strategic Plan, 2010 Update
This plan addresses health features of the community, such as tobacco and alcohol use, access to clinical care, and high school dropout rates. Physical environmental concerns mostly address housing, visual condition of the community, and recycling. The recommendations of this plan do not directly affect this study.

Richland County Growth Policy Update, 2015
Richland County has recently updated its Growth Policy. Goals and objectives have been updated for community health and infrastructure concerns, including transportation. The plan provides valuable community context for Fairview, one of two incorporated jurisdictions in the county. One policy objective is to develop urban development guidelines and coordinate those guidelines with future projects. Governmental coordination is a recognized priority and coordination with MDT on improvements to highways and state-owned roads is a transportation objective. The community would like to see prioritized upgrades to MT 200 and MT 201.

Town of Fairview Growth Policy Update, 2015
This update is a more focused treatment of the information presented in the Richland County Growth Policy Update discussed above. This plan also emphasizes prioritized improvements on MT 200 and MT 201.

TranPlan 21, 2008
TranPlan 21 is Montana's federally-mandated statewide transportation plan. Originally adopted in 1995 and most recently amended in 2008, TranPlan 21 is an essential component of the continuing statewide planning process that develops and implements MDT policy goals and actions in cooperation with the public and Montana's transportation stakeholders.

TranPlan 21 establishes statewide transportation policies in six key areas within the federally-required 20-year planning horizon. These policy areas include:

- economic development,
- traveler safety,
- roadway system performance,
- access management/land use planning,
- bicycle and pedestrian transportation, and
- public transportation.

The Roadway System Performance Policy Paper noted improvements will be needed in response to traffic growth in certain corridors.

7.0 Conclusion

Table 26 summarizes key findings from this report.

Table 26. Summary of Key Findings

Category	Key Findings
Transportation System Conditions	**Structures** • Two structures in the study area are candidates for rehabilitation/repair. These structures are not located on the MT 200, ND 200 and ND 58 highways studied in this report. **Bicycle and Pedestrian Facilities** • Bicycle and pedestrian facilities consist of intermittent sidewalks along MT 200 through Fairview and four- to eight-foot shoulders along MT 200, ND 200, and ND 58 within the study area. **Utilities** • Utilities in the study area include underground telephone, underground cable television, underground natural gas, underground water, and overhead and underground electric power. • Irrigation canals and petroleum pipelines also occur in the study area vicinity. **Rail Facilities** • A BNSF Railway facility parallels MT 200 and ND 58 through the study area, with crossings at CR 133 in the southern portion of the study area; 9th, 6th, and 2nd Streets within Fairview; and ND 200 just east of the MT/ND state line. **Drainage Condition** • Rural drainage is generally sufficient. • Grated trough structures within Fairview are not effective; standing water and truck traffic results in mud splatter. **Pavement Condition** • Fair to poor ride index ratings were documented for MT 200 within the study area. • Fair to poor IRI, distress, and rut ratings were identified for ND 200 and ND 58 within the study area. • Pavement deficiencies (including transverse cracking, longitudinal cracking, and/or subgrade/pavement failure) were identified during the field review at the ND 200 railroad crossing and the MT 200 intersections with MT 201, 3rd, 4th, 5th, and 7th Streets. **Horizontal Alignment** • Four of five curve locations on MT 200 do not meet current MDT design criteria. **Clear Zones** • In Fairview, there are obstructions within the clear zone along MT 200. • Generally, fill and cut slopes contain compliant grades and dimensions. **Crash History** • Approximately 20% of all crashes on MT 200 involved a semi-trailer truck during the 2004 to 2013 period. • Approximately 33% of intersection-related crashes on MT 200 involved a semi-trailer truck during the analysis period. • Eight of the 20 crashes occurring on ND 200 during the 2010 to 2013 analysis period resulted in injury and no fatalities were reported. Of these 20 total crashes, 10 crashes occurred at the ND 200/ND 58 intersection.

Category	Key Findings
Transportation System Conditions	**Traffic Volumes and Operations** • Traffic volumes are anticipated to peak in approximately 2025 and return to lower levels by 2035. • Corridor segments south of Fairview and between 2nd Street and ND 58 are projected to operate at unacceptable levels in the PM peak hour assuming a high-growth scenario if no improvements are made. • The MT 200/MT 201 and ND58/ND200 intersections are expected to operate at unacceptable levels in the PM peak hour assuming a high-growth scenario. **Origin-Destination Trends** • During the AM peak period, the strongest truck movements occur from west to east/north and from south to north/east. • During the PM peak period, the strongest truck movements occur from east to south.
Environmental Conditions	**Soil Resources and Prime Farmland** • The majority of the study area is either farmland of statewide importance or prime farmland if irrigated. **Geologic Resources** • Study area soils are considered to have moderate frost susceptibility. Moisture-sensitive and fine-grained soils occur in the study area. **Surface Waters** • One unnamed stream crosses the northwestern corner of the study area, and some small ephemeral drainages cut through the western sandstone slopes. **Wetlands** • Narrow emergent wetland fringe is common along the banks of irrigation ditches/canals within the study area vicinity. **Groundwater** • Approximately 164 wells are located within or immediately adjacent to the study area, particularly within and surrounding the town of Fairview. **Irrigation** • Within the study area, the Main Canal flows south to north along the western edge of the Yellowstone River Valley and the town of Fairview. • Six lateral ditches flow west to east though the study area, providing diverted irrigation water to farmland in the area. • A number of farm turnouts divert water from the laterals to individual farms via a smaller ditch network that provides water for flood irrigation or use of large pivots. • Two irrigation drains cross through the eastern portion of the study area collecting irrigation waste water and seepage, which is discharged back into the Yellowstone River. **Floodplains and Floodways** • Three floodplain zones exist within the study area, including a SFHA within the 100-year floodplain. **Hazardous Substances** • Ten active UST sites, eight LUST sites, four petroleum release fund claims, eight abandoned or inactive mine sites, four open cut permits, the town of Fairview sewer lagoon, several oil and gas wells and horizontal drilling paths, one gas transmission pipeline, and three reported oil spills were identified within the study area. **Noxious Weeds** • Several noxious weeds have been observed in the study area.

Category	Key Findings
Environmental Conditions	**General Wildlife Species** • The study area and vicinity are home to a number of wildlife species, and considered either primary, general, secondary, and/or winter range for mule deer, white-tailed deer, pronghorn antelope, and black-tailed prairie dog. **Threatened/Endangered/Species of Concern/Species of Conservation** • T/E/SOC/SPC are not likely present due to the highly disturbed nature of the study area, distance from the Yellowstone River, and limited aquatic resources. **Land Use** • Future land use growth areas for residential, commercial, and industrial use are located beyond the Fairview city boundary around new and existing developments and along major transportation corridors. **Recreational Resources** • Recreational resources within the study area include Sharbano Park, the playground and sports field at the East Fairview Elementary School, and the sports fields and track at the Fairview High School. • Section 6(f) grants were used for four projects at Sharbano Park. **Cultural Resources** • Seven properties within or adjacent to the study area are eligible for listing on the NRHP. **Noise** • Noise receptors occur within the study area.

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Attachment 1
Field Review Photo Log

March 2015

Fairview

CORRIDOR PLANNING STUDY

Field Review Photo Log

Prepared for:

MONTANA MDT DEPARTMENT OF TRANSPORTATION

Prepared by:

DOWL

This photo log illustrates conditions observed during a field review conducted on February 25, 2015, within the Fairview corridor study area, which includes Montana Highway 200 (MT 200) from approximate Reference Post (RP) 61.47 to RP 64.18 at the North Dakota (ND) border (ND RP 0.0), ND Highway 200 (ND 200) from approximate RP 0.0 to RP 0.88, ND Highway 58 (ND 58) from approximate RP 0.0 to RP 1.15, MT Highway 201 (MT 201) from RP 68.0 to RP 69.48, and various local/county roads. Photo categories include environmental conditions and transportation system conditions. This photo log does not provide a comprehensive account of all conditions within the study area. Conditions were visually inspected; no testing, delineations, or measurements were conducted. RP locations are approximated.

Photo locations along local and county roads generally proceed from west to east or south to north. Photo locations along main highways include RP references.

Environmental Conditions

Photo 1. Looking east at the County Road (CR) 133 and MT 200 intersection and adjacent land use.

Photo 2. Looking east at farmland on south side of CR 133 and east side of MT 200.

Photo 3. Looking east at irrigation ditch that parallels CR 133 near the intersection with MT 200.

Photo 4. Looking northwest at residence and cottonwood grove located northeast of the CR 133 and MT 200 intersection.

Photo 5. Looking north at large irrigation ditch that runs north to south, crossing CR 133 just east of the MT 200 intersection.

Photo 6. Looking northeast at farmland and pivot to the north of CR 133.

Photo 7. Looking east on CR 133 at roadway and adjacent land use.

Photo 8. Looking east at railroad crossing at CR 133, overhead power lines, and electrical sub-station at northeast corner of railroad crossing.

Photo 9. Looking west at large irrigation ditch paralleling CR 133 near railroad crossing.

Photo 10. On CR 133 looking north at a vegetated wind break typically found around residences and a gas pipeline crossing location.

Photo 11. Looking east at CR 133 and adjacent land use near the ND border.

Photo 12. On CR 133 looking north at adjacent farmland.

Photo 13. Looking southeast at residence just south of CR 133.

Photo 14. Looking northeast at City of Fairview sewer lagoon on north side of CR 133 at the ND border.

Photo 15. Sign for City of Fairview sewer lagoon on north side of CR 133.

Photo 16. At the intersection of CR 133 and CR 356 looking northeast at farmland, pivot, and irrigation ditch that crosses under the intersection from southwest to northeast.

Photo 17. At the intersection of CR 133 and CR 356 looking northeast at a distant oil pad typical in this area.

Photo 18. North of CR 133 and CR 356 intersection looking west at farmland adjacent to CR 356.

Photo 19. North of CR 133 and CR 356 intersection looking at City of Fairview sewer lagoon utility shed on east side of CR 356.

Photo 20. Looking north at CR 356 and adjacent land use.

Photo 21. Looking east at irrigation ditch that crosses CR 356 from west to east and at sign for gas pipeline adjacent to the roadway.

Photo 22. Looking west at irrigation ditch that crosses CR 356 from west to east.

Photo 23. Looking north at irrigation ditch that parallels CR 356 to the east.

Photo 24. On CR 356 looking east at adjacent residences.

Photo 25. On CR 356 looking east at adjacent residential lot.

Photo 26. On CR 356 near Fairview city limits looking southwest at adjacent farmland.

Photo 27. On CR 356 near Fairview city limits looking northeast at adjacent farmland.

Photo 28. Near the Fairview city limits, looking south at CR 356 and adjacent land use.

Photo 29. Looking east at 29th Street NW and adjacent land use.

Photo 30. Looking north at 161st Avenue NW and adjacent land use.

Photo 31. Looking west at farmland adjacent to 161st Avenue NW.

Photo 32. Looking northeast at farmland adjacent to 161st Avenue NW and distant oil pad.

Photo 33. On 161st Avenue NW looking east at an irrigation ditch that runs west to east.

Photo 34. On 161st Avenue NW looking east at an irrigation ditch that crosses the roadway from west to east.

Photo 35. On 161st Avenue NW looking east at an irrigation ditch that crosses the roadway from west to east and a distant oil pad.

Photo 36. On 161st Avenue NW looking southwest at an older residence adjacent to the roadway.

Photo 37. On 161st Avenue NW looking northeast at adjacent farmland and residence.

Photo 38. Looking northwest at farmland adjacent to 161st Avenue NW and City of Fairview in the distance.

Photo 39. On 161st Avenue NW looking northeast at adjacent land use.

Photo 40. On 161st Avenue NW looking northwest at a typical oil pad found in the area.

Photo 41. Looking south at 161st Avenue NW and 30th Street NW intersection and adjacent land use.

Photo 42. On 161st Avenue NW looking west at an irrigation ditch that crosses the roadway from west to east.

Photo 43. Looking north at irrigation ditch that parallels 161st Avenue NW on east side of roadway.

Photo 44. On 161st Avenue NW looking northeast at railroad spur line and material loading facility.

Photo 45. On 161st Avenue NW looking north at railroad spur line crossing.

Photo 46. On 161st Avenue NW looking east at railroad spur line.

Photo 47. On 161st Avenue NW looking northwest at a "man camp" just north of the railroad spur line crossing.

Photo 48. On 161st Avenue NW looking east at large irrigation ditch.

Photo 49. Looking south at irrigation ditch that parallels 161st Avenue NW on west side of the roadway.

Photo 50. Looking north at 161st Avenue NW and adjacent land use.

Photo 51. Looking northeast at farmland and pivot to the northeast of 161st Avenue NW.

Photo 52. Looking north at 161st Avenue NW and ND 200 intersection.

Photo 53. Looking south at irrigation ditch that parallels 161st Avenue NW on the west side of the roadway, just south of the intersection with ND 200.

Photo 54. Just south of ND 200 on 161st Avenue NW looking southwest at adjacent land use.

Photo 55. Just south of ND 200 on 161st Avenue NW looking east at adjacent farmland.

Photo 56. On 160th Avenue NW looking southwest toward corridor study area and typical land use within study area.

Photo 57. On 160th Avenue NW looking northwest toward typical land use within study area.

Photo 58. On 160th Avenue NW looking southwest toward typical land use within study area.

Photo 59. On 160th Avenue NW looking northwest toward typical land use within study area.

Photo 60. On 160th Avenue NW looking southwest toward typical land use within study area.

Photo 61. Looking north at MT 200 and adjacent land use. RP 62.14.

Photo 62. On MT 200 looking northwest at adjacent residence, farmland, and large cottonwood grove. RP 62.14.

Photo 63. Looking north at MT 200 and main thoroughfare through the City of Fairview. RP 63.31.

Photo 64. On MT 200 looking south at a historic building in downtown Fairview. RP 63.5.

Photo 65. On MT 200 looking north at a historic building in downtown Fairview. RP 63.5.

Photo 66. On CR 134 looking south at the Main Canal which crosses CR 134 from south to north.

Photo 67. On CR 134 looking northwest at land use and topography on eastern side of the City of Fairview.

Photo 68. On W. 11th Street looking south at land use within the study area just south of the City of Fairview.

Photo 69. On MT 201 looking south at the Main Canal and land use and topography on eastern side of the City of Fairview. RP 69.3.

Transportation System Conditions

Photo 70. Looking northeast on MT 200 at the intersection of CR 133. RP 61.6.

Photo 71. Looking southwest on MT 200 at the intersection of CR 133. RP 61.6.

Photo 72. Looking southwest at a culvert at the intersection of MT 200 and CR 133. RP 61.6.

Photo 73. Looking north at a culvert at the intersection of MT 200 and CR 133. RP 61.6.

Photo 74. Looking east at a culvert at the intersection of MT 200 and CR 133. RP 61.6.

Photo 75. Looking west at a culvert at the intersection of MT 200 and CR 133. RP 61.6.

Photo 76. Looking south at a culvert at the intersection of MT 200 and CR 133. RP 61.6.

Photo 77. Looking southwest on MT 200. RP 61.7.

Photo 78. Looking northeast on MT 200. RP 61.7.

Photo 79. Looking southwest on MT 200. RP 61.9.

Photo 80. Looking northeast on MT 200. RP 61.9.

Photo 81. Looking southwest on MT 200. RP 62.2.

Photo 82. Looking northeast on MT 200. RP 62.2.

Photo 83. Looking southwest on MT 200. RP 62.3.

Photo 84. Looking northeast on MT 200. RP 62.3.

Photo 85. Looking southwest on MT 200. RP 62.4.

Photo 86. Looking northeast on MT 200. RP 62.4.

Photo 87. Looking northeast on MT 200. RP 62.5.

Photo 88. Looking southwest on MT 200. RP 62.5.

Photo 89. Looking southwest on MT 200. RP 62.6.

Photo 90. Looking northeast on MT 200. RP 62.6.

Photo 91. Looking southwest on MT 200. RP 62.8.

Photo 92. Looking northeast on MT 200. RP 62.8.

Photo 93. Looking west on MT 200. RP 62.9.

Photo 94. Looking east on MT 200. RP 62.9.

Photo 95. Looking east on MT 200. RP 63.1.

Photo 96. Looking west on MT 200 at a school crosswalk. RP 63.1.

Photo 97. Looking north on MT 200 at a school crosswalk. RP 63.1.

Photo 98. Looking east on MT 200. RP 63.2.

Photo 99. Looking south on MT 200 at drainage provided through a curb cut. RP 63.2.

Photo 100. Looking west on MT 200. Drainage ditch is located just south of the southeast curb (left side of picture). RP 63.2.

Photo 101. Looking south on MT 200 at a light pole that is close to the travelled way. RP 63.2.

Photo 102. Looking west across MT 200 at a bicycle route that connects to nearby schools. RP 63.3.

Photo 103. Looking west on the westbound approach (east leg) of MT 200 and 6th Street. RP 63.3.

Photo 104. Looking north on the northbound approach (south leg) of MT 200 and 6th Street. RP 63.3.

Photo 105. Looking east on the eastbound approach (west leg) of MT 200 and 6th Street. RP 63.3.

Photo 106. Looking at the southeast corner of MT 200 and 6th Street at a signal pole that is blocking the ADA ramp. RP 63.3.

Photo 107. Looking south on the southbound approach (north leg) of MT 200 and 6th Street. RP 63.3.

Photo 108. Looking south on MT 200. RP 63.4.

Photo 109. Looking north on MT 200. RP 63.4.

Photo 110. Looking west across MT 200. The existing signage through Fairview has lost retroreflectivity. RP 63.4.

Photo 111. Looking south on MT 200. RP 63.5.

Photo 112. Looking north on MT 200. RP 63.5.

Photo 113. Looking south on MT 200. RP 63.6.

Photo 114. Looking north on MT 200. The sidewalk on the southeast side of the roadway discontinues at this point, approximately one block south of the city park. RP 63.6.

Photo 115. Looking west on the westbound approach (east leg) of MT 200 and MT 201. RP 63.7.

Photo 116. Looking north on the northbound approach (south leg) of MT 200 and MT 201. RP 63.7.

Photo 117. Looking east on the eastbound approach (west leg) of MT 200 and MT 201. RP 63.7.

Photo 118. Looking south on the southbound approach (north leg) of MT 200 and MT 201. RP 63.7.

Photo 119. Looking south on MT 200. RP 63.8.

Photo 120. Looking north on MT 200. RP 63.8.

Photo 121. Looking north on MT 200. RP 64.0.

Photo 122. Looking northeast on MT 200. RP 64.2.

Photo 123. Looking southwest on ND 200. RP 0.0.

Photo 124. Looking northeast on ND 200. RP 0.0.

Photo 125. Looking east on ND 200 at a railroad crossing. RP 0.1.

Photo 126. Looking north on ND 200 at a railroad crossing. Roadway rutting is more severe in this location compared to other locations within the study area. RP 0.1.

Photo 127. Looking south on ND 200 at a railroad crossing. RP 0.1.

Photo 128. Looking south at the intersection of 2nd Street/ND 58 and ND 200. RP 0.4.

Photo 129. Looking north at the intersection of 2nd Street/ND 58 and ND 200. RP 0.4.

Photo 130. Looking north at the intersection of 2nd Street/ND 58 and ND 200. RP 0.4.

Photo 131. Looking east at the intersection of 2nd Street/ND 58 and ND 200. RP 0.4.

Photo 132. Looking north on ND 58. RP 0.3.

Photo 133. Looking south on ND 58. RP 0.3.

Photo 134. Looking north on ND 58. RP 0.5.

Photo 135. Looking south on ND 58. RP 0.5.

Photo 136. Looking southeast just south of MT 201. RP 68.4.

Photo 137. Looking northeast just south of MT 201. RP 68.4.

Photo 138. Looking east on MT 201 just west of MT 200 at a narrow bridge. RP 69.5.

Attachment 2
Righ-of-way Data

Fairview Corridor Planning Study - Right-of-way Analysis

Corridor	RP	R/W Offset from Centerline (ft)		Total ROW Width (ft)	Distance (ft)
		Left	Right		
MT 200	61.40	60	60	120	419
	61.48	60	50	110	300
	61.54	60	45	105	200
	61.57	60	50	110	300
	61.63	60	60	120	28
	61.64	75	60	135	67
	61.65	80	60	140	105
	61.67	70	60	130	1,500
	61.95	60	60	120	1,300
	62.20	70	60	130	370
	62.27	70	70	140	70
	62.28	80	70	150	350
	62.35	80	80	160	510
	62.45	70	80	150	360
	62.51	70	70	140	420
	62.59	40	70	110	648
	62.72	70	70	140	502
	62.81	60	70	130	420
	62.89	40	70	110	157
	62.92	40	40	80	870
	63.08	40	32	72	66
	63.10	40	40	80	4,016
	63.86	80	80	160	1,844
	64.21	End MT 200			
ND 200	0.00	75	75	150	1,987
	0.38	50	75	125	305
	0.43	75	75	150	1,695
	0.76	75	50	125	639
	0.88	End ND 200			
ND 58	0.00	110	300	410	350
	0.07	110	60	170	1,112
	0.28	125	60	185	30
	0.28	110	60	170	935
	0.46	120	60	180	25
	0.46	120	120	240	100
	0.48	120	60	180	90
	0.50	120	90	210	60
	0.51	120	60	180	225
	0.55	110	60	170	225
	0.60	125	60	185	30
	0.60	110	60	170	395
	0.68	100	60	160	585
	0.79	115	60	175	30
	0.79	100	60	160	655
	0.92	115	60	175	34
	0.92	100	60	160	296
	0.98	115	60	175	40
	0.99	115	90	205	62
	1.00	End ND 58			

Source: Available record drawings and cadastral information, MDT, NDDOT, 2015.

Attachment 3

2015 NDDOT Documented CATEX for

Project No.
SS-7-200(014)000
SS-7-200(015)000
SS-7-200(016)000

DOCUMENTED CATEX

SURFACE IMPROVEMENTS OVERLAY

Project No.	PCN
SS-7-200(014)000	17861
SS-7-200(015)003	20294
SS-7-200(016)004	20295

State Line to Jct US 85

Prepared by

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
BISMARCK, NORTH DAKOTA

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February 2015

North Dakota, Highway 200
State Line to Jct US 85

CERTIFICATION

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of North Dakota. This document was originally issued and sealed by Jay F. Meacham, Registration number PE-7926 on 2/19/2015 and the original document is stored at the North Dakota Department of Transportation.

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Jay F. Meacham, P.E.

2/19/15
Date

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I. Executive Summary

A. Project Description

This document covers three (3) proposed projects. These projects are contiguous and cover highway ND 200 from the Montana/North Dakota state line to US Highway 85.

Highway: ND 200
District: Williston
Limits: State Line E (RP 0.00) to Jct US 85 (RP 18.684)

Project	PCN	Description
SS-7-200(014)000	PCN 17861	State Line E to Yellowstone Bridge
SS-7-200(015)003	PCN 20294	Yellowstone Bridge Segment
SS-7-200(016)004	PCN 20295	Yellowstone Bridge to Jct US 85

The projects lie along ND 200 beginning at RP 0.00 on the Montana border near Fairview. The projects' area extends eastward over the Yellowstone bridge, through Cartwright and terminates at US Highway 85 north of Alexander. See Figure 1 for the project location map.

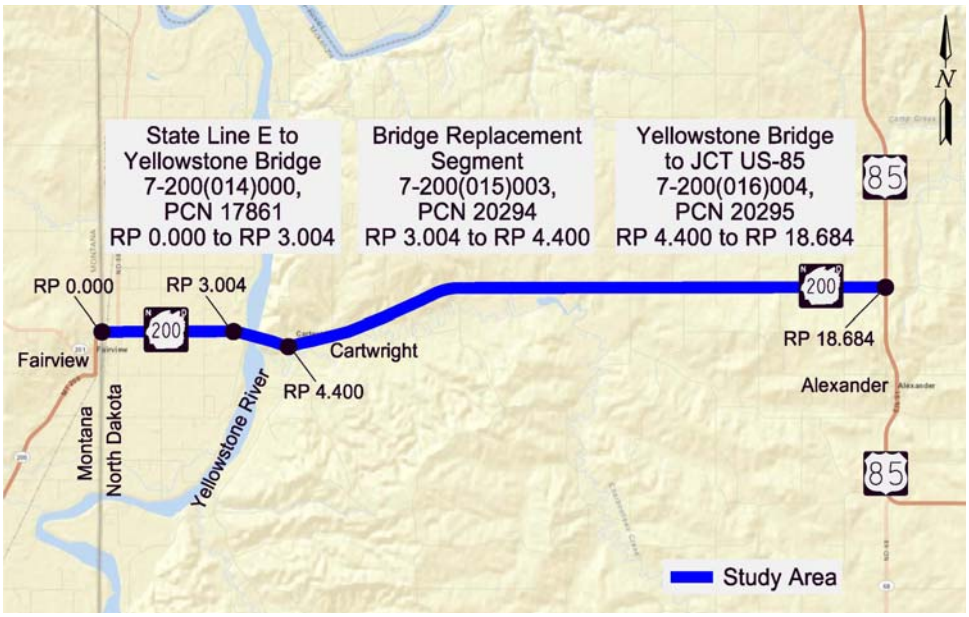


Figure 1- Project Location Map

The project(s) scoping reports were completed in May 2010 for PCN 17861, May 2013 for PCN 20294, and May 2013 for PCN 20295. PCN 17861's scoping report had an addendum in June 2013. The documented Cat Ex phase is expected to continue through the beginning of 2015 and end with the selection of alternatives. The selected alternatives will be advanced to the design phase which is expected to begin 2014/2015. The construction phase for PCN 17861 and 20294 is expected to begin in spring 2015. Construction will begin in spring 2016 for PCN 20295.

Table 1 - Traffic Data

State Line to ND 58 (ND 200 RP 0 .000 to 0.378)

	Year	Passenger Cars	Trucks	Total AADT
Current	2013	4,530	1,010	5,540
Forecast	2033	6,750	1,660	8,410

ND 58 to Yellowstone Bridge (ND 200 RP 0.378 to 3.004)

	Year	Passenger Cars	Trucks	Total AADT
Current	2013	1,600	985	2,585
Forecast	2033	2,385	1,615	4,000

Yellowstone Bridge (ND 200 RP 3.004 to 4.400)

	Year	Passenger Cars	Trucks	Total AADT
Current	2013	2,785	1,075	3,860
Forecast	2033	4,150	1,765	5,915

Yellowstone Bridge to Jct US 85 (ND 200 RP 4.400 to 18.684)

	Year	Passenger Cars	Trucks	Total AADT
Current	2013	2,935	1,085	4,020
Forecast	2033	4,375	1,780	6,155

The source of the traffic data is from counts performed by NDDOT. The future traffic volume forecasts were based on growth rates of about 2.1% per year.

B. Project Schedule

PCN 17861 State Line to Bridge
Plans Compete - February 2015
Bid Opening - April 2015

PCN 20294 Bridge Segment
Plans Complete – February 2015
Bid Opening – April 2015

PCN 20295 Bridge to US Hwy 85
Plans Complete – January 2016
Bid Opening – March 2016

C. Purpose of Project

The purpose of the proposed project is to address the pavement deterioration and extend the lifetime of the pavement structure. Additionally, the project will address the needs identified in this document for the ND 200 from state line to junction of US 85 corridor.

D. Need for Project

ND 200 from the State Line to the Junction of US-85 is expected to undergo increases in truck traffic due to the increase in oil/ energy exploration in the vicinity. This increase of truck traffic will accelerate the deterioration of the pavement structure. The proposed improvements are programmed to address the pavement deterioration and extend the lifetime of the pavement structure.

The roadside clearzone has safety hazards such as culvert headwalls that will need to be relocated or protected. The existing superelevation deficiencies are listed in tables 5. The proposed improvements will upgrade the superelevation to meet standards. The crash rate at the ND 200 / ND 58 intersection is 3.3 observed crashes per year with an expected crash rate of 4.8 crashes per year. The continued increase in traffic and decrease in operations will lead to further increases in crash rates at this intersection. Crashes at intersections of two high speed facilities such as ND 200 and ND 58 are expected to have an increased severity. The proposed improvements will decrease the expected crash rate at the ND 200 / ND 58 intersection. All of these safety issues need to be addressed.

The operations of the ND 200 / ND 58 intersection is already operating at a poor level of service (LOS) D. It is expected this LOS will deteriorate to F in the very near future unless intersection improvements are implemented. A minimum acceptable LOS C at the ND 200 / ND 58 intersection for the 2033 design year is required.

Capacity:
The capacity of ND 200 is expected to be adequate through 2033 other than at the intersection of ND200 and ND58. The existing level of service of this intersection is approaching an unacceptable level of service (LOS). This intersection is expected to continue to deteriorate to failing levels of service unless improvements are made. Several alternatives are under consideration to improve the immediate and long term capacity needs of this intersection.

System Linkage:
ND 200 is a District Corridor that provides east-west connection from western North Dakota to Montana.

Transportation Demand:
The transportation demands on ND 200 are increasing due to increased oil activity in the area. The traffic growth is expected to increase at very high and unpredictable levels for several years and level off at some point in the future when oil activity increases has stabilized. At that time, growth will be expected to continue at more conventional and expected rates.

Social Demands or Economic Development:
The planned action will foster economic growth due to improved safety of the ND 200 corridor and improved capacity of the ND 200 / ND 58 intersection. The improvement will provide increased mobility to oil transportation needs and facilitate connection to the planned rail transloading facility.

The City of Fairview would also like a route to bypass the city. The ND 58 intersection improvements could provide a location for the east end of the bypass.

Modal Interrelationships:
Rail facilities exist within the project area. A transloading facility is expected on the property in the northwest corner of the ND 200 / ND 58 intersection. The improvements that are part of this project will interface and serve to compliment interrelationship between trucking and rail transportation.

Safety:
Clearzone hazards and inadequate shoulder widths exist throughout the ND 200 corridor. The deteriorating operational characteristics of the ND 200 / ND 58 intersection are leading to increasing crash rates. Pavement distresses such as cracking and rutting that are present on this project lead to decreased safety. The proposed action will improve safety by implementing a safe clearzone, improving shoulder conditions, restore or rehabilitate the pavement, and improving the operations of the ND 200 / ND 58 intersection.

Roadway Deficiencies:
The pavement structure is in need of rehabilitation. The shoulder widths throughout much of the corridor are inadequate. The roadside clearzone is inadequate. Roadside safety hardware requires upgrading to adequate levels. There are existing superelevation rates that do not meet current standards. There are also deficiencies in existing vertical alignment and superelevation along the project corridor. Specifically there are three vertical curves that do not meet the required K value. These curves are summarized in Table 4. There are 5 horizontal curves where the existing superelevation does not meet requirements. These curves are summarized in Table 5. The proposed project is necessary to correct these deficiencies.

E. Existing Conditions

ND 200 is a District Corridor that serves as a primary corridor for east-west traffic and connects traffic to / from Montana and North Dakota. The roadway was originally constructed in 1956 with gravel. The Yellow Stone River bridge and HBP was added in 1960. The bridge and a short portion of ND 200 was relocated and reconstructed in 1998. A full construction history is presented in Table 2. Existing typical sections are shown in Figure 2. The pavement layers shown in the existing typical sections are a result of recent (January 2014) coring data and may vary from what is shown in the construction history.

Table 2 - Construction History

State Line E to Yellowstone Bridge (ND 200 RP .000 to 3.004)

Year	Construction	Depth (in)	Width (ft)	Oil
1956	Grade	-	40	-
1956	Traffic Service Gravel	3	22	-
1960	Reshaped	-	38	-
1960	Aggregate Base	3.5	36	-
1960	Emulsified Asphalt	3.5	36	-
1962	Hot Bit Pavement	1.5	24	120-150
1990	Contract Chip Seal	-	24	HFMS-2
1998	Yellowstone Bridge Built			
2000	District Chip Seal	-	24	HFMS-2
2009	Microsurfacing	-	25	-

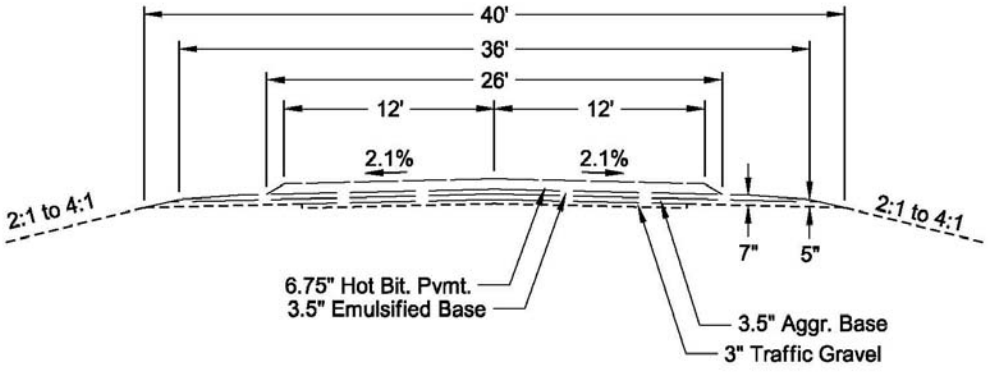
Yellowstone Bridge (ND 200 RP 3.004 to 4.400)

Year	Construction	Depth (in)	Width (ft)	Oil
1998	Grade	-	52	-
1998	Aggregate Base	12.0	40	-
1998	Hot Bit Pavement	5.0	36	120-150
2000	District Chip Seal	-	24	HFMS-2
2009	Microsurfacing	-	25	-

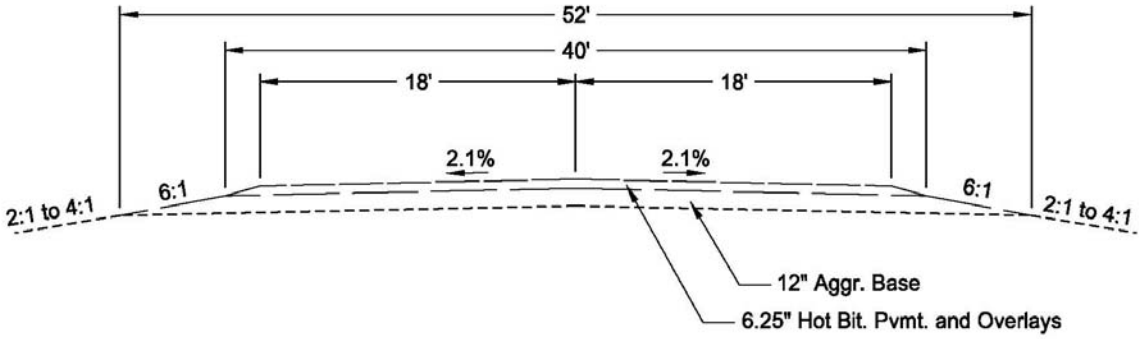
Yellowstone Bridge to Jct US 85 (4.400 to 18.684)

Year	Construction	Depth (in)	Width (ft)	Oil
2004	Grade	-	44	-
2004	Blended Base	9.0	37	-
2004	Hot Bit Pavement	2.0	24	PG 58-24
2005	Hot Bit Pavement	3.0	29	PG 58-24
2005	Hot Bit Pavement	2.0	27	PG 58-24
2005	Aggregate Base	3.5	3-0-3	-
2006	Safety Project	-	-	-
2008	Federal Aid Chip Seal	-	27	CRS2P

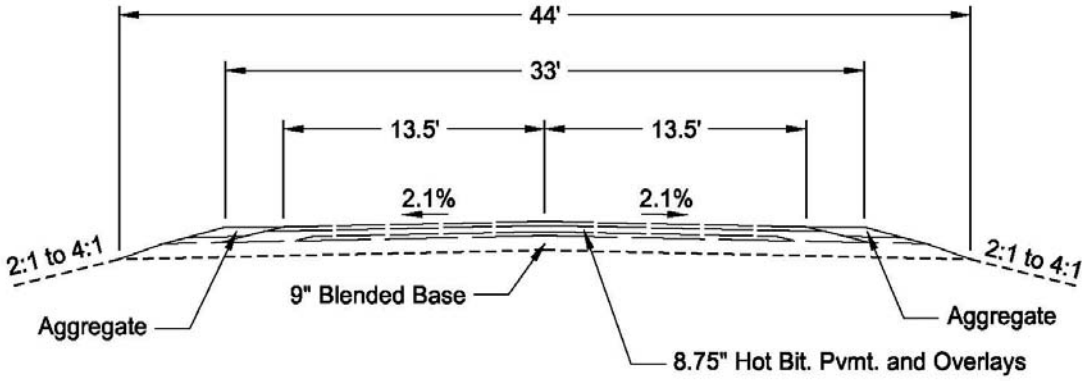
Existing Typical Sections:



State Line E to Yellowstone Bridge (ND 200 RP 0 .000 to 3.004)



Yellowstone Bridge Segment (ND 200 RP 3.004 to 4.400)



Yellowstone Bridge to Jct US 85 (ND 200 RP 4.400 to 18.684)

Figure 2 – Existing Typical Sections

Irrigation:

Due to clear zone requirements several irrigation box culverts crossing beneath ND 200 may need to be extended or modified. Of particular concern are the large box culverts at reference points 1.278, 5.138 and 13.292. The culverts at RP 1.278 and RP 5.138 are single culverts and at RP 13.292 is a triple culvert. These box culverts may need to be extended with new headwalls to accommodate clearzone establishment. How far the culverts will need to be extended will depend on which alternative is selected. The culvert at 5.138 was extended with a project in 2006 and is not expected to require further extension. The more widening and wider clear zone alternatives will require more extension. It is not expected that the channels that flow into and out of the culverts will require reconstruction since the culverts are aligned with the existing channels.

There are also 2 large pipes in the project area at RP 9.644 and 10.568. These pipes may need to be extended based on the clear zone requirements of the selected alternative. Various other smaller drainage pipes exist throughout the corridor that will be extended as needed to meet clear zone requirements.

Railroad Crossings:

There is a BNSF Railroad line that crosses ND 200 on the west end of the project (at reference point 0.103). The rail line is skewed 5 degrees with the road. The crossing is composed of ballasted track with standard removable steel framed reinforced concrete panels. There are six (6) sets of panels (center panel and outside panels) each approximately 8 feet long for a total length of approximately 48 feet. The signals and gates for the railroad crossing are 11 feet away from the closest rail and 23 feet away from the centerline of the road.

Lighting:

There is existing lighting at the northwest and southeast corners of the intersection of ND 200 / ND 58 (RP 0.378) in addition to flashing overhead intersection warning beacons suspended over the center of the intersection.

Deficiencies:

Roadway Structure:

The roadway is currently experiencing longitudinal cracking, transverse cracking, patching, and rutting throughout the projects. Table 3 shows the summary of the pavement conditions resulting from NDDOT evaluations performed in 2011.

Table 3 – Existing Pavement Condition

PCN	Year	International Roughness Index (IRI)	IRI Rating	Distress Score	Distress Rating	Rut (inch)	Rut Rating
17861	2011	105	Fair	73	Poor	0.47	Fair
20294	2011	130	Fair	63	Poor	0.57	Poor
20295	2011	51	Excellent	91	Good	0.24	Excellent

Roughness Index
Excellent ≤ 60
Good = 66-99
Fair = 100 – 145
Poor ≥ 145

Distress Score
Excellent ≥ 98
Good = 88 – 97
Fair = 77 – 87
Poor ≤ 76

Rut
Excellent < 0.25"
Good = 0.25" – 0.375"
Fair = 0.376" – 0.50"
Poor > 0.50"

Roadway Alignment:

Substandard vertical alignments and superelevations exist within the project area. Vertical curve deficiencies include less than minimum K-values for minimum stopping sight distances for vertical crest curves, and less than minimum curve lengths for sag vertical curves designed to meet minimum comfort criteria. The deficient vertical curves are shown in Table 4. Throughout the projects' areas there are multiple locations where the existing longitudinal grades are flatter than (between -0.3% and 0.3%) recommended by current standards. Providing these minimum grades for pavement drainage is important particularly where the roadway is subject to potential rutting from significant truck traffic. Table 5 summarizes the superelevation deficiencies. The results of the full vertical and superelevation evaluation are available in Appendix D.

Table 4 – Vertical Curve Deficiencies

RP	PVC Station	PVT Station	Crest or Sag	Required K-value	Existing K-value	Required Length	Existing Length	PCN
6.921	364+94	365+94	Sag	157	52	175	100	20295
7.321	385+30	387+80	Sag	157	59	388	250	20295
18.521	974+89	980+89	Crest	193	155	N/A	600	20295

Table 5 - Superelevation Deficiencies

RP	PC Station	PT Station	Existing Superelevation (%)	Required Superelevation (%)	PCN
3.157	166+16.65	167+24.57	5.34%	5.87%	20294
3.916	205+10.32	208+43.96	2.70%	3.00%	20294
4.797	249+57.43	257+00.65	2.70%	3.00%	20295
5.562	288+86.96	298+47.79	2.90%	3.00%	20295
6.673	349+40.92	355+30.52	0.58%	2.12%	20295

Roadside Safety:

Roadside safety deficiencies exist at several locations along the ND 200 corridor. Inslopes are steeper than 4:1 in multiple areas. There are multiple roadside hazards (culverts, headwalls, etc.) within the clear zone. Driveway and minor cross street approaches do not meet NDDOT recovery approach standards. Many of these approaches have lateral culverts that are located such that they also present roadside hazards.

Intersections:

The intersection of ND 200 / ND 58 is experiencing operational deficiencies. It is an unsignalized, two-way stop intersection with stop control on the north (ND 58) and south (161st Ave) approaches. The existing intersection is operating at a Level of Service (LOS) D, which indicates it is approaching unstable flows with tolerable delays of 25 to 35 seconds. These deficiencies will continue to become more apparent as traffic volumes increase. If no improvements are made to the intersection a LOS E is expected within the next 2-3 years and LOS F is expected within the next 5 years. LOS F is considered operationally failing and occurs when the flows are forced and unpredictable with excessive delays of greater than 50 seconds on the worst approach. Several alternatives are under consideration to address the deficiencies of this intersection. Four other intersections along the ND 200 corridor warrant the addition of turn lanes due to traffic volumes. The installation of these turn lanes are presented as options in the alternatives section of this document.

F. Scope of Work

SS-7-200(014)000, PCN 17861

2015 STIP: $1,137,500
2013 Scoping Report: $1,137,500 - $6,750,000
2014 Documented CatEx: $2,240,000 - $11,340,000

SS-7-200(015)003, PCN 20294

2015 STIP: $518,000
2013 Scoping Report: $1,264,500
2014 Documented CatEx: $1,278,000 – $1,590,000

SS-7-200(016)004, PCN 20295

2016 STIP: $4,999,000
2013 Scoping Report: $7,772,000 - $21,665,000
2014 Documented CatEx: $8,459,000 - $27,190,000

G. Description of Alternatives

1. State Line E to Yellowstone Bridge, SS-7-200(014)000, PCN 17861

a. No Build

Alternative 1-a: The No-Build alternative would involve no changes to the existing roadway or intersection improvements. This alternative would result in continuing deterioration of the pavement structure and operational functionality of the ND 200 / ND 58 intersection. The No-Build alternative does not meet the Purpose and Need for the Project.

Alternative 1-a (No Build) Total Estimated Project Cost = $0

b. Minor Rehabilitation

Alternative 1-b: The Minor Rehabilitation alternative is proposed to extend the useful life of the roadway. It consists of a 3-inch HBP overlay applied to the entire existing pavement surface providing a 28-foot wide paved roadway, as shown in Figure 3, below. The existing roadside clear zone would be maintained and inslopes steeper than 4:1 would be flattened to a 4:1 minimum. Safety hardware that does not meet NCHRP 230 standards will be upgraded.

A highway patrol turnaround will be constructed near the Montana Border and an automatic traffic recorder (ATR) would be placed at RP 2.0.

Alternative 1-b (Minor Rehabilitation) Total Estimated Project Cost = $2,240,000

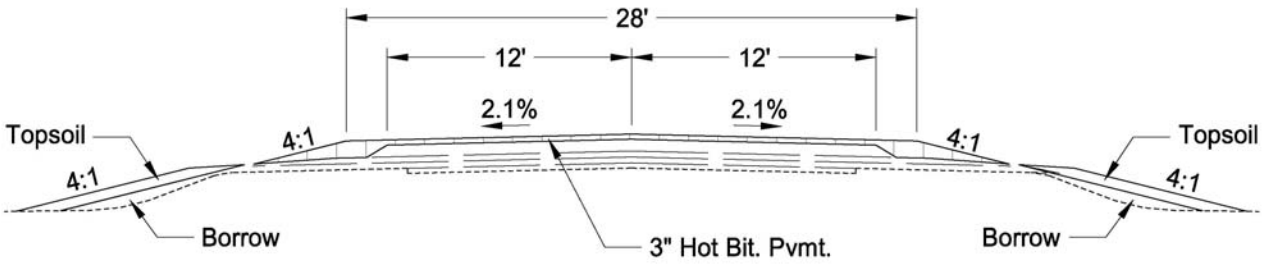


Figure 3 – Minor Rehab Typical Section

c. Structural Improvement

Alternative 1-c: The Structural Improvement alternative consists of a structural HBP overlay. The overlay would be designed to extend the useful life of the roadway for 20 years by restoring the structural integrity of the roadway section. The proposed typical section is shown in Figure 4. Improvements would consist of 5 inches of new HBP to be added to the existing HBP. A 20-foot roadside clear

zone would be used and existing inslopes steeper than 4:1 would be flattened. Safety hardware that does not meet NCHRP 230 standards will be upgraded. The overlay would result in a 28-foot paved surface width without requiring widening of the roadway section.

A highway patrol turnaround will be constructed near the Montana Border and an automatic traffic recorder (ATR) would be placed at RP 2.0.

Alternative 1-c (Structural Improvement)
Total Estimated Project Cost = $3,230,000

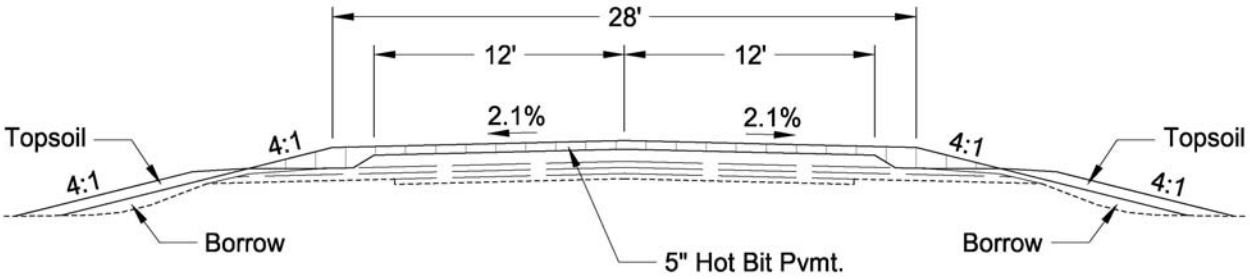


Figure 4 – Structural Improvement Typical Section

d. Major Rehabilitation

Alternative 1-d: The Major Rehabilitation alternative would be a Mine & Blend section with widening. HBP surfacing would be placed to improve the highway to meet current design standards, to extend the service life of the pavement structure, and to provide operational improvement. The roadway would be widening to provide a minimum 36-foot wide surface including 12-foot driving lanes, 2-foot HBP shoulders, and an additional 4-foot aggregate shoulder as shown in Figure 5. A full AASHTO clear zone will be implemented per the 2011 Roadside Design Guide with 4:1 inslopes. Correction for longitudinal grades flatter than +/-0.3% will be incorporated in the Major Rehabilitation. It was determined that all superelevations within this project segment area are sufficient and that no superelevation corrections are needed.

The box culvert located at RP 1.278 will need to be extended 7 feet on both sides in order to meet the widened inslopes and maintain existing irrigation patterns.

A highway patrol turnaround will be constructed near the Montana Border and an automatic traffic recorder (ATR) would be placed at RP 2.0.

Alternative 1-d (Major Rehabilitation)
Total Estimated Project Cost = $8,000,000
(Aggregate Shoulders in optional work item A included in this cost)

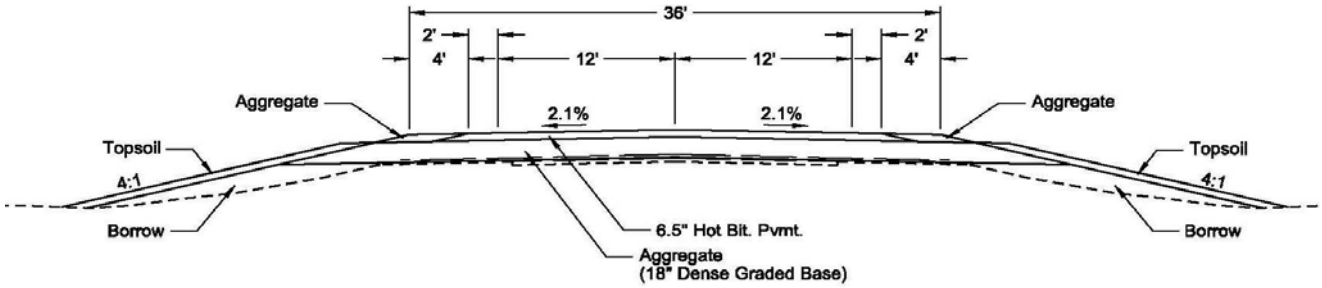


Figure 5 – Major Rehab Typical Section

e. Optional Work Item 1 - Shoulder Improvements for Major Rehab

A. <u>Aggregate Shoulders</u>

Aggregate shoulders represent the base condition as described in the Major Rehab alternative, see Figure 5.

Optional Work Item A (Aggregate Shoulders) Estimated Costs = $0
(Aggregate shoulders included in base condition)

B. <u>HBP Shoulders</u>

The typical section for HBP shoulders is shown in Figure 6. The HBP shoulder will extend the hard shoulder 4 feet on both sides, thereby providing a 6-foot paved shoulder beyond the edge of the 12-foot traveled way. The 2010 Highway safety manual indicates that shoulder type has about a 1% decrease in expected crashes when changing the shoulder from aggregate to paved for shoulders of this size. (2010 HSM Table 10-10)

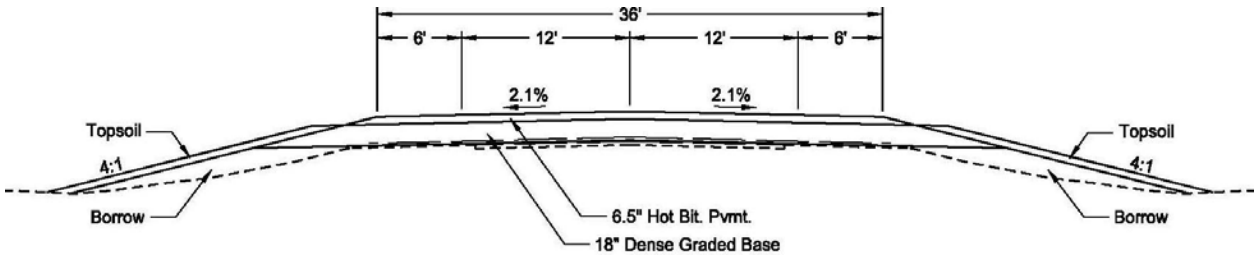


Figure 6 – Major Rehab Typical Section with HBP Shoulders

Optional Work Item B (HBP Shoulders) Estimated Costs = $554,000

f. Optional Work Item 2 - ND 200 / ND 58 Intersection Improvements

A. <u>No ND 200 / ND 58 intersection improvements</u>

This optional work item refers to implementing no other intersection improvements other than those that are part of the selected alternative, e.g. clearzone, widening, etc.

With this option the existing ND 200 / ND 58 intersection configuration will remain as it exists – one lane in each direction. Each movement (left, right, and thru) share the same lane. ND 58 and 161st Avenue are stop controlled. ND 200 is uncontrolled (See Figure 7). As can be seen in Table 6, the LOS for the intersection is approaching unacceptable levels in 2013 and will have failed operationally well before the 2033 design year. It is expected that a LOS F will be reached within the next 5 years, therefore, this optional work item does not meet the project's Purpose and Need.

Table 6 – No Intersection Improvements Operations and Safety

Optional Work Item	2013 LOS[1] (Sec/Veh)	2033 LOS[1] (Sec/Veh)	Expected Crash Rate[2] (crashes/year)
A. No Improvement	**D (28.6) / SB**	**F (>50) / SB**	**4.8**

1. Intersection LOS and delay (seconds/vehicle) values represent the worst approach.
2. Expected Crash Rate is based on 2010 HCM Predicative Method using 2013 Traffic Volumes.

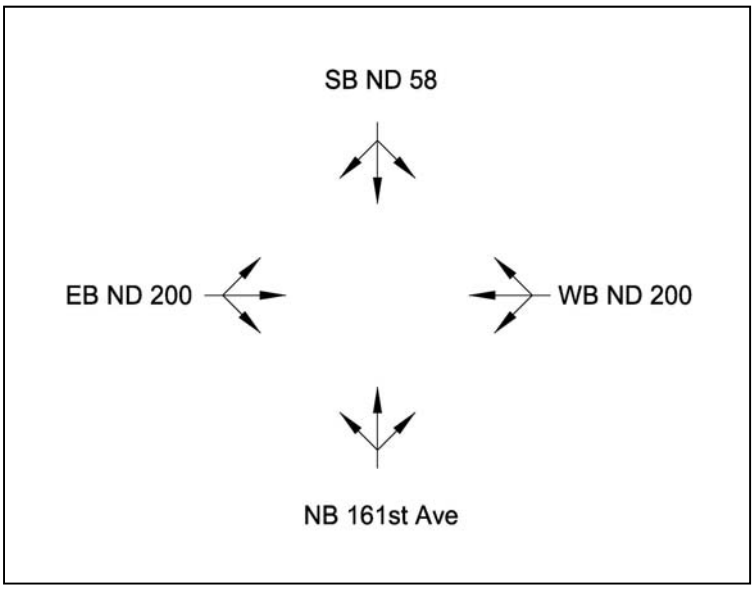


Figure 7 – No Improvement / Existing Intersection Configuration

Optional Work Item A (No Build) Estimated Cost = $0

B. Roundabout at ND 200 / ND 58

Due to the high volume of turning traffic, high relative traffic rate on ND 58 in comparison with ND 200, and the increasing frequency of crashes at this intersection, a roundabout is under consideration as a possible alternative. An example single-lane roundabout configuration at this intersection is shown in Figure 8. For this alternative, a single lane roundabout is recommended with raised splitter islands, upstream traffic calming channelization, and driving lanes and truck apron sized for a WB-67 design vehicle.

The roundabout will experience heavy turning truck traffic which may lead to significant shoving distress to HBP pavement, therefore, concrete pavement is recommended. The North Dakota Department of Transportation Materials and Research Division recommends 9.5 inches of doweled, jointed plain PCC constructed on 8 inches of dense graded base.

It is also recommended that additional lighting be installed at the intersection and along ND 200, ND 58, and 161st Ave to fully illuminate the channelization. In addition to the upstream traffic calming the regulatory speed would need to be reduced approaching the roundabout. The current regulatory speed is 65 MPH and operating speed through the roundabout would be 20 MPH.

The introduction of a roundabout is expected to alleviate operational and safety concerns at this intersection. The current and future (2033) LOS are B and C, respectively. (See Table 7) Right-of-way impacts would be expected along ND 58 and 161st Avenue if a Roundabout were to be constructed. Refer to Table 12 (Traffic Operations and Safety), Table 13 (Right-of-way impacts), Table 16 (wetland impacts), Table 20 (Costs), and Table 23 (Pros and Cons) for how this option compares to the other options.

The roundabout will require the installation of temporary bypasses to maintain two way traffic. Figure 8A shows the temporary bypasses that are planned during the construction period. The completion of the south leg may also require a short closure of 161st Avenue and a subsequent construction phase to detour westbound traffic 1 mile on 161st Avenue.

This work option will meet the project's Purpose and Need.

Table 7 – Roundabout Operations and Safety

Optional Work Item	2013 LOS[1] (Sec/Veh)	2033 LOS[1] (Sec/Veh)	Expected Crash Rate[2] (crashes/year)
B. Roundabout	B (11.1)	C (22.5)	2.5

1. Intersection LOS and delay (seconds/vehicle) values represent the overall average.
2. Expected Crash Rate is based on 2010 HCM Predicative Method using 2013 Traffic Volumes.

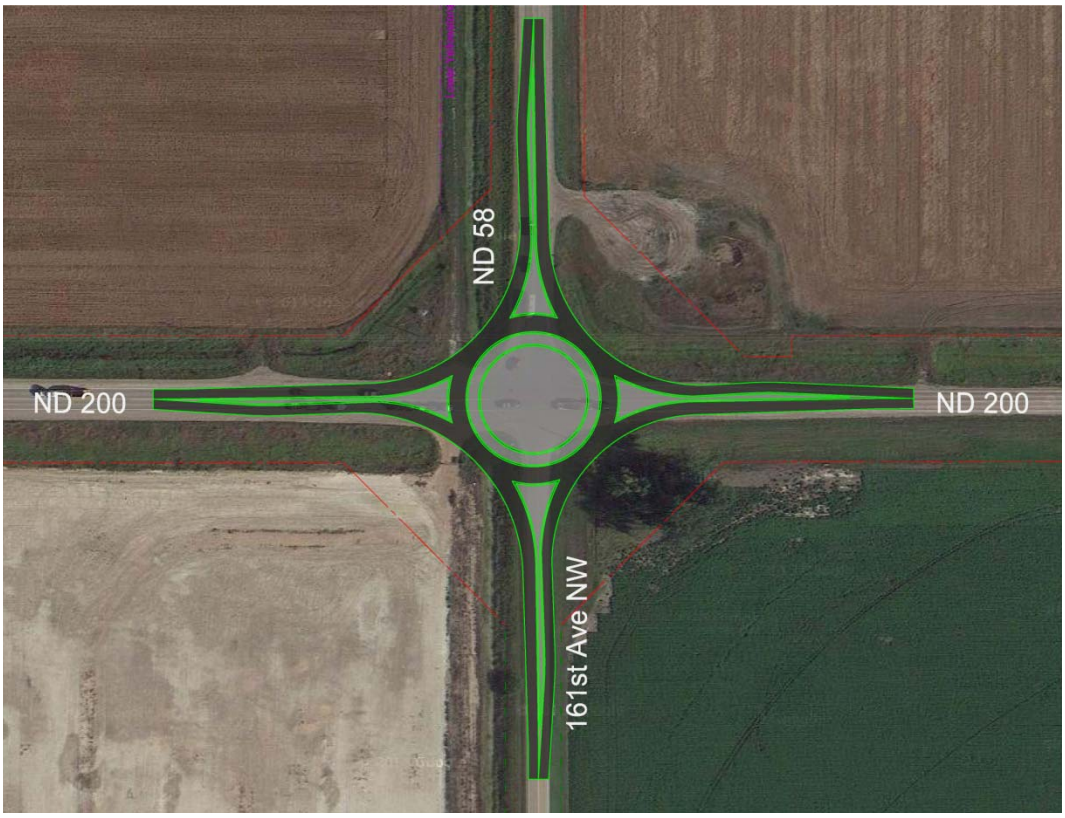


Figure 8 – Roundabout Layout

Optional Work Item B (Roundabout) Estimated Cost = $2,786,000

Figure 8A – Roundabout Temporary Bypass

C. Turn Lanes at ND 200 / ND 58

This optional work item proposes the introduction of traditional turn lanes on ND 200 and ND 58 as warranted by NDDOT guidelines. It includes maintaining stop control on southbound ND 58 and northbound 161st Avenue. ND 200 eastbound and westbound will remain uncontrolled. Left and right turn lanes are proposed on the north, east, and west legs of this intersection. A left turn lane is proposed on the south leg (161st Avenue) to maintain through lane continuity. Figure 9 shows the proposed intersection turn lane configuration.

The introduction of turn lanes on both ND 200 and ND 58 will provide improved safety and traffic operations at this intersection over no intersection improvements. With the current traffic volumes the introduction of these turn lanes will improve the current level of service at this intersection from D to B. The level of service is expected to decline to LOS E with projected 2033 traffic volumes, therefore, this optional work item does not meet the project's Purpose and Need. (See Table 8) Right-of-way impacts may occur along the west side of ND 58 and along 161st Avenue to develop the turn lanes. Refer to Table 12 (Traffic Operations and Safety), Table 13 (Right-of-way impacts), Table 16 (wetland impacts), Table 20 (Costs), and Table 23 (Pros and Cons) for how this option compares to the other options.

Table 8 – Turn Lanes Operations and Safety

Optional Work Item	2013 LOS[1] (Sec/Veh)	2033 LOS[1] (Sec/Veh)	Expected Crash Rate[2] (crashes/year)
C. Turn Lanes	B (14.7) / SB	E (36.7) / SB	3.0

1. Intersection LOS and delay (seconds/vehicle) values represent the worst approach.
2. Expected Crash Rate is based on 2010 HCM Predicative Method using 2013 Traffic Volumes.

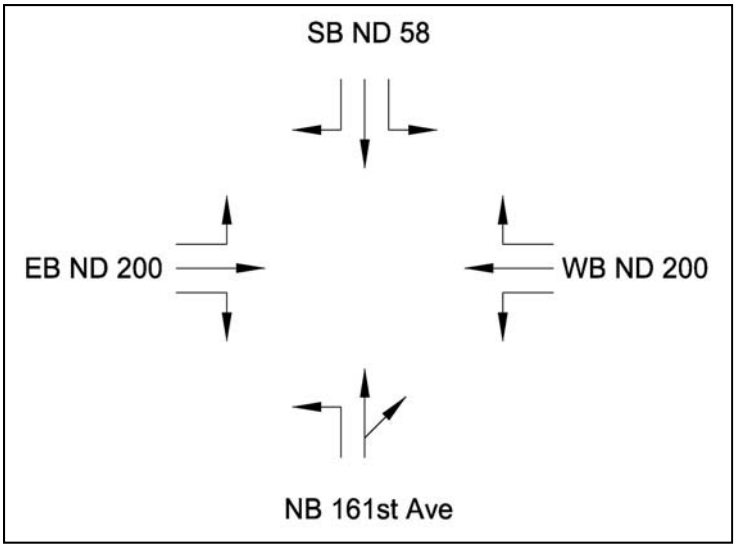


Figure 9 – Turn Lanes Configuration

Optional Work Item C (Turn Lanes) Estimated Cost = $1,727,000

D. Free Right Intersection from SB ND 58 to WB ND 200

Due to the high volume of right turning traffic from southbound ND 58 onto westbound ND 200, a dedicated free-right turn is under consideration as a build alternative. An example free-right configuration at this intersection is shown in Figure 10 below. The dedicated free-right would not be required to stop at the intersection as it would have a dedicated deceleration lane along ND 58 and acceleration lane along ND 200. Additional lighting would be necessary to fully illuminate the right turn lane. This alternative fails to improve the overall operational efficiency of the intersection. The current and future LOS are the same for this optional work item as they are for the no intersection improvements option, D and F, respectively. (See Table 9) This is due to the lack of improvement for the southbound through and left movements. This work option does not meet the Purpose and Need of the Project.

Due to the high-speeds (65 MPH regulatory), the acceleration, deceleration, and taper distances associated with this turn lane are very long. The acceleration lane with taper cannot be developed to full standard before the west end of the project (Montana Line), the taper length will have to be shortened to less than 65:1. The acceleration lane will also require widening at the railroad crossing. Refer to Table 12 (Traffic Operations and Safety), Table 13 (Right-of-way impacts), Table 16 (wetland impacts), Table 20 (Costs), and Table 23 (Pros and Cons) for how this option compares to the other options.

Table 9 – Free-Right Operations and Safety

Optional Work Item	2013 LOS[1] (Sec/Veh)	2033 LOS[1] (Sec/Veh)	Expected Crash Rate (crashes/year)
D. Free-Right	D (32.3) / SB	F (>50) / SB	Unknown[2] (HSM pg 14-55)

1. Intersection LOS and delay (seconds/vehicle) values represent the worst approach.
2. HSM indicates this option has unknown crash effects.

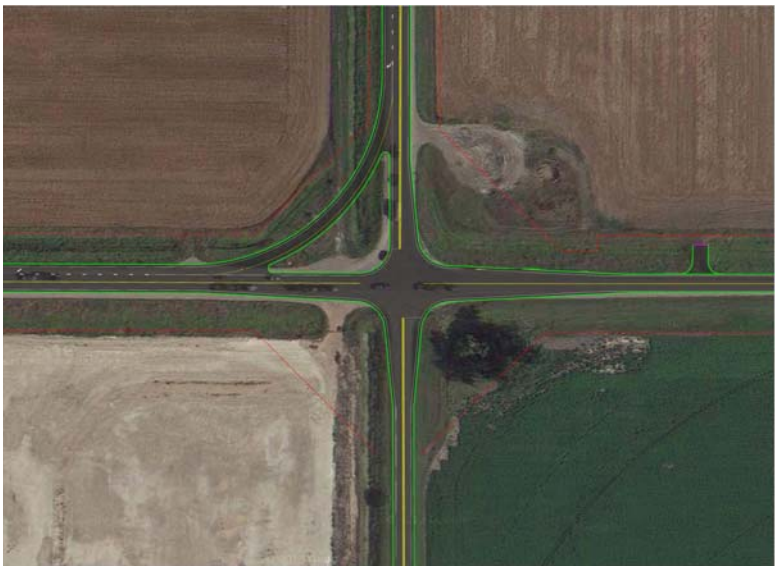


Figure 10 – Example Free-Right Layout
Optional Work Item D (Free Right) Estimated Cost = $1,230,000

E. All Way Stop at ND 200 / ND 58

Due to the similar volumes of traffic on all legs of this intersection on both ND 200 and ND 58, an all-way stop control is under consideration as an option. The only improvement necessitated by an all-way stop control is additional signing making this a simple, inexpensive alternative. Stop signs would be installed at all four legs of the intersection. (See Figure 11) The introduction of an new stop sign on ND-200 may not be noticed when the sign is initially installed by motorist who travel ND 200 frequently, therefore advanced warning signs "New Traffic Pattern Ahead" (W23-2) and "Stop Ahead" (W3-1) are recommended on ND 200, ND 58, and 161st St. In addition, other applicable MUTCD and NDDOT signing standards are recommended. A flashing beacon or sign LED's is also recommended on the Stop Signs for ND 200.

Installing stop controls at this intersection brings the level of service up to acceptable levels for the current traffic volumes but fails to address long-term concerns about the operational efficiency of this intersection. (See Table 10) The installation of an all-way stop would provide an adequate interim solution until a long term solution is determined. As a long-term solution this option does not meet the Project's Purpose and Need. Refer to Table 12 (Traffic Operations and Safety), Table 13 (Right-of-way impacts), Table 16 (wetland impacts), Table 20 (Costs), and Table 23 (Pros and Cons) for how this option compares to the other options.

Table 10 – All-Way Stop Operations and Safety

Optional Work Item	2013 LOS[1] (Sec/Veh)	2033 LOS[1] (Sec/Veh)	Expected Crash Rate (crashes/year)
E. All-way Stop	C (15.1) / SB	F (>50) / SB	3.6

1. Intersection LOS and delay (seconds/vehicle) values represent the overall average.
2. HSM indicates this option has unknown crash effects.

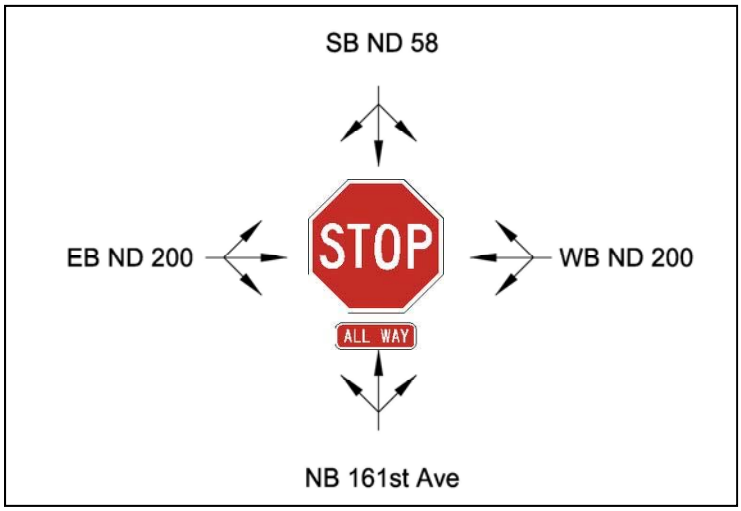


Figure 11 – All-Way Stop
Optional Work Item E (All-Way Stop) Estimated Cost = $3,200

F. Traffic Signal at ND 200 / ND 58

This option proposes to maintain the existing intersection configuration and install a traffic signal, see Figure 12.

Installing a traffic signal improves the level of service to acceptable levels for the current and future projected traffic volumes. (See Table 11) This option could be split into phases with the signal installed now and the turn lanes installed in the future. It is recommended that the signal pole foundations be located so that turn lanes (see Alternative C) may be installed in the future without requiring relocation of the signal poles. It is also recommended that applicable advanced warning signing be installed on State Routes. Refer to Table 12 (Traffic Operations and Safety), Table 13 (Right-of-way impacts), Table 16 (wetland impacts), Table 20 (Costs), and Table 23 (Pros and Cons) for how this option compares to the other options.

This work option meets the Purpose and Need of the Project.

Table 11 – Traffic Signal Operations and Safety

Optional Work Item	2013 LOS[1] (Sec/Veh)	2033 LOS[1] (Sec/Veh)	Expected Crash Rate[2] (crashes/year)
F. Traffic Signal	A (7.8)	C (24.6)	3.7

1. Intersection LOS and delay (seconds/vehicle) values represent the overall average.
2. Expected Crash Rate is based on 2010 HCM Predicative Method using 2013 Traffic Volumes.

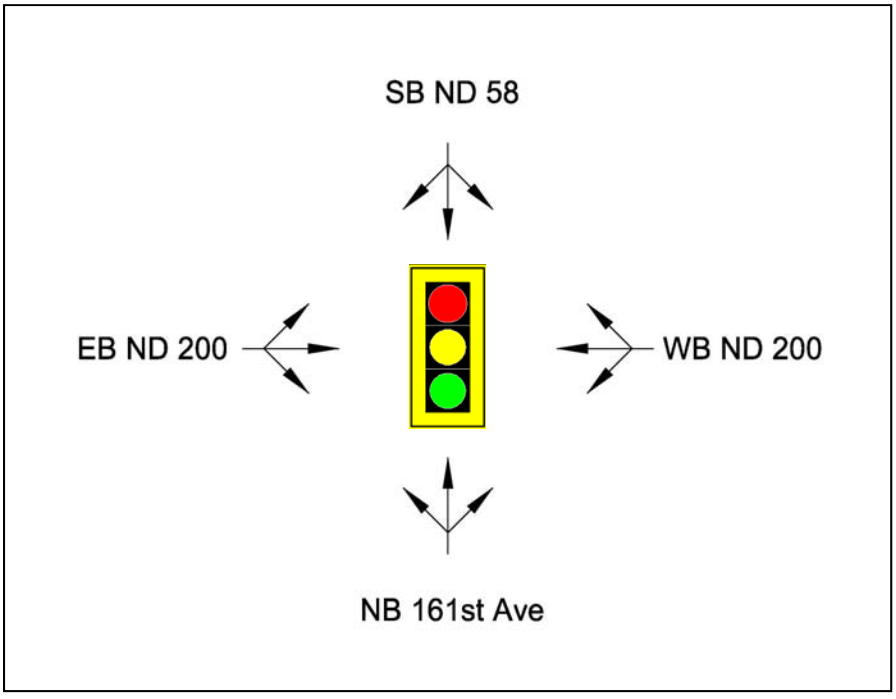


Figure 12 – Traffic Signal with Existing Geometry

Optional Work Item F (Signal) Estimated Cost = $335,000

2. Bridge Replacement Segment, SS-7-200(015)003, PCN 20294

a. No-build

Alternative 2-a: The No-Build alternative would involve no changes to the existing roadway. The No-Build alternative does not meet the Purpose and Need for the Project.

Alternative 2-a (No Build) Total Estimated Project Cost = $0.00

b. Structural Improvement

Alternative 2-b: The Structural Improvement alternative consists of a structural HBP overlay. The overlay would be designed to extend the useful life of the roadway for 20 years by restoring the structural integrity of the roadway section. The proposed typical section is shown in Figure 13. Improvements would consist of 5 inches of new HBP added to the existing HBP. A 20-foot roadside clear zone would be used and existing inslopes steeper than 4:1 would be flattened. Safety hardware that does not meet NCHRP 230 standards will be upgraded.

The overlay would result in a 28-foot paved surface. An additional 3.5 feet of aggregate shoulders would be provided on each side of the paved surface.

For the pavement over the bridge the entire surface will be overlaid with 5 inches of new HBP.

Alternative 2-b (Structural Improvement) Total Estimated Project = $1,278,000 (Aggregate Shoulders in optional work item A included this cost)

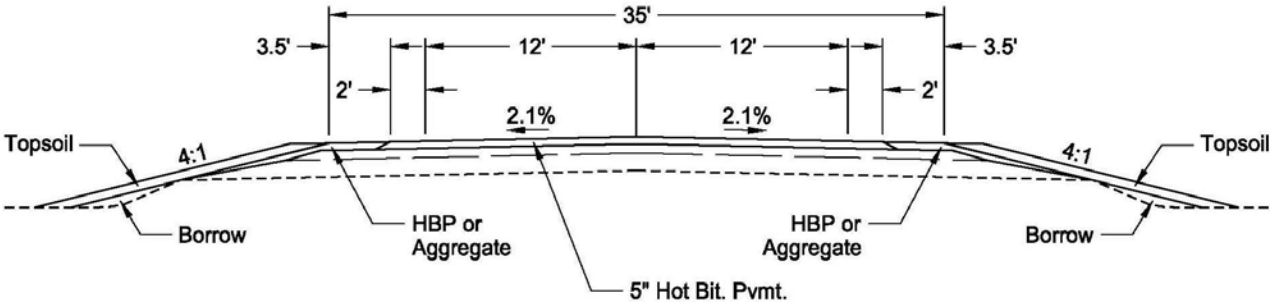


Figure 13 – Structural Improvement Typical Section

c. Optional Work Item 1 - Shoulder Improvements

A. <u>Aggregate Shoulders</u>

Aggregate shoulders represent the base condition as described in the structural improvement alternative.

Optional Work Item A (Aggregate Shoulders) Estimated Costs = $0 (Aggregate shoulders included in base condition)

B. HBP Shoulders

As can be seen in Figure 12, there is an option to have HBP shoulders. The HBP shoulder will extend the paved shoulder 3.5 feet, thereby providing a 5.5-foot paved shoulder beyond the edge of the 12-foot traveled way. The 5-inch thick HBP shoulder would be provided in place of the aggregate shoulder. The 2010 Highway safety manual indicates that shoulder type has about a 1% decrease in expected crashes when changing the shoulder from aggregate to paved for shoulders of this size. (2010 HSM Table 10-10)

Optional Work Item B (HBP Shoulders) Estimated Costs = $300,000

3. Yellowstone Bridge to Jct US 85 SS-7-200(016)004, PCN 20295

a. No build

Alternative 3-a: The No-Build alternative would involve no changes to the existing roadway. The No-Build alternative does not meet the Purpose and Need for the Project.

Alternative 3-a (No Build) Total Estimated Project Cost = $0.00

b. Minor Rehabilitation

Alternative 3-b: The Minor Rehabilitation alternative is proposed to extend the useful life of the roadway. It consists of a 3-inch HBP overlay applied to the entire existing pavement surface providing a 29.8-foot wide paved roadway, as shown in Figure 14. The existing roadside clear zone would be maintained and inslopes steeper than 4:1 would be flattened to a 4:1 minimum. Safety hardware that does not meet NCHRP 230 standards will be upgraded.

Alternative 3-b (Minor Rehab) Total Estimated Project Cost = $8,459,000

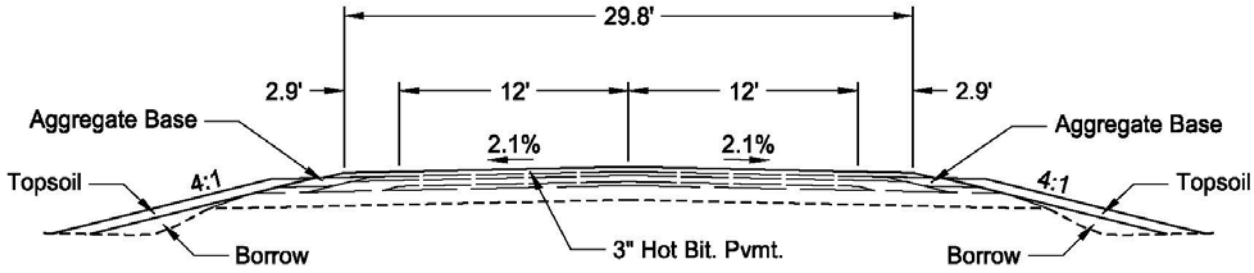


Figure 14 – Minor Rehabilitation Typical Section

The minor rehabilitation requires the installation of a temporary bypass road in order to maintain two way traffic. This would be installed in the ditch alongside ND Hwy 200 roughly between RP 0.380 and RP 3.000.

c. Structural Improvement

Alternative 3-c: The Structural Improvement alternative consists of a structural HBP overlay. The overlay would be designed to extend the useful life of the roadway for 20 years by restoring the structural integrity of the roadway section. The proposed typical section is shown in Figure 15. Improvements would consist of 3.5 inches of new HBP added to the existing HBP. A 20-foot roadside clear zone would be used and existing inslopes steeper than 4:1 would be flattened. Safety hardware that does not meet NCHRP 230 standards will be upgraded.

The overlay would result in a 28.7-foot paved surface, which allows for two driving lanes and over 2' of paved shoulders on either side.

Alternative 3-c (Structural Improvement) Total Estimated Project Cost = $9,270,000

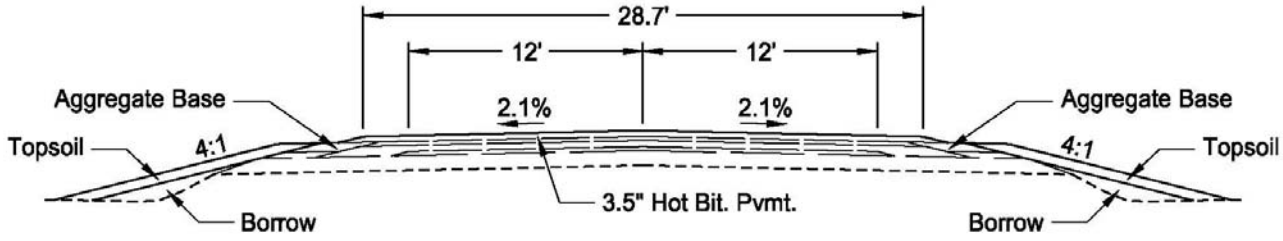


Figure 15 – Structural Improvement Typical Section

d. Major Rehabilitation

Alternative 3-d: A Major Rehabilitation structural HBP overlay with widening is proposed to extend the service life of the pavement and provide operational improvements to the corridor. The existing pavement will be overlaid with 3.5" of HBP and the roadway would be widening to allow 4 feet of aggregate shoulders on either side of the roadway. See the typical section in Figure 16.

Within this project's area there are three locations with substandard existing vertical curves and three locations with substandard existing superelevations. Refer to Table 4 and Table 5 for the locations of the substandard superelevations and vertical alignment, respectively. The deficient vertical alignment (vertical curves and grades flatter than +/- 0/3%) and superelevation will be corrected as part of the major rehabilitation. In locations requiring vertical alignment correction, it may not be possible to follow the new vertical alignment with an overlay so the full depth reconstruction would extend across the entire width of the roadway.

A full AASHTO clear zone will be implemented per the 2011 Roadside Design Guide with 4:1 inslopes. Safety hardware that does not meet NCHRP 350 standards will be upgraded.

Alternative 3-d (Major Rehab) Total Estimated Project Cost = $23,890,000 (Aggregate Shoulders in optional work item A included this cost)

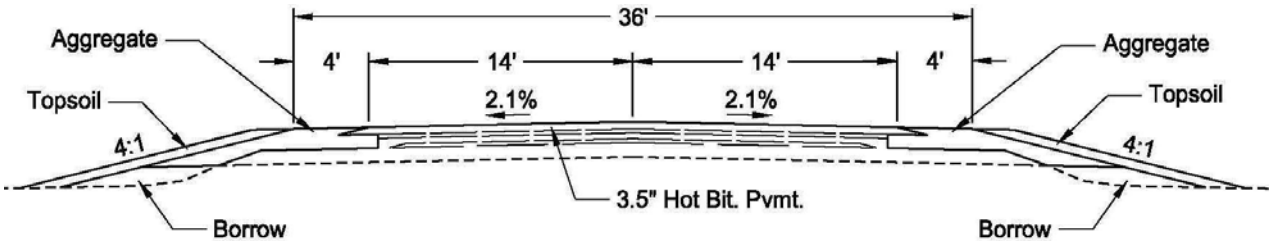


Figure 16 – Major Rehabilitation Typical Section

f. Turn Lanes

According the current NDDOT guidelines for the installation forum lanes on state highways, four intersections warranted additional turn lanes as described below. The costs for these turn lanes are included in the alternatives' costs above.

ND 200 / Route 1 (RP 4.729)

- Westbound to southbound Left Turn Lane
- Eastbound to southbound Right Turn Lane

ND 200 / Route 16 (RP 5.541)

- Westbound to northbound Right Turn Lane
- Eastbound to southbound Right Turn Lane
- Eastbound to northbound Left Turn Lane

ND 200 / Route 13 / 149th Ave (RP 12.712)

- Eastbound to northbound Right Turn Lane

ND 200 / Route 13 / 147th Ave (RP 14.711)

- Eastbound to northbound Right Turn Lane

g. Optional Work Item 1 - Shoulder Improvements for Major Rehab

A. Aggregate Shoulders

Aggregate shoulders represent the base condition as described in the Major Rehab alternative, see Figure 15.

Optional Work Item A (Aggregate Shoulders) Estimated Costs = $0
(Aggregate shoulders included in base condition)

B. HBP Shoulders

The typical section for HBP shoulders is shown in Figure 17. The HBP shoulder will extend the hard shoulder 4.5 feet on both sides by full-depth widening, thereby providing a 6-foot paved shoulder beyond the edge of the 12-foot traveled way. The 2010 Highway safety manual indicates that shoulder type has about a 1% decrease in expected crashes when changing the shoulder from aggregate to paved for shoulders of this size. (2010 HSM Table 10-10)

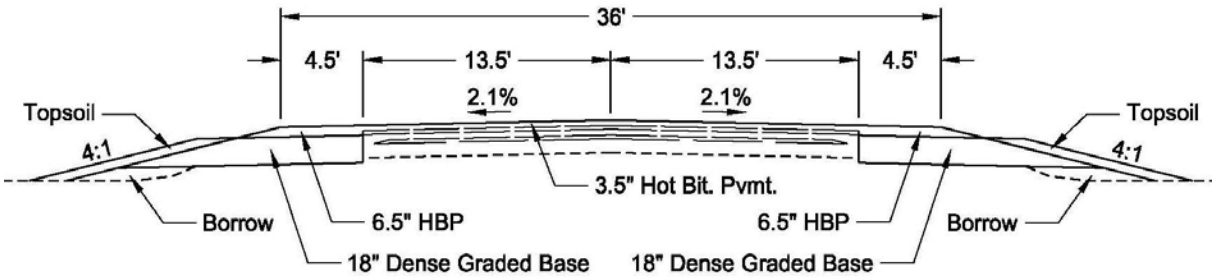


Figure 17 – Major Rehabilitation Typical Section with HBP Shoulders

Optional Work Item B (HBP Shoulders) Estimated Costs = $3,300,000

4. ND 200 Corridor Issues and Impacts

a. Traffic Control Work Zone Safety and Mobility

Work zone mobility will be ensured by maintaining at least 1 traffic lane at all times and maintaining accesses for local traffic Hazards within the work zone clear zone that cannot be moved will be protected by barrier. Detouring may be required at the ND 200 / ND 58 / 161st Ave intersection if construction a roundabout..

All business accesses will be considered and maintained by working with the property owners.

b. Work Zone Traffic Control

Temporary work zone traffic control activities will follow NDDOT standard drawing and guidelines along with requirements set forth in the MUTCD. It is expected that the Work Zone Traffic Control plan presented in this document could change as a result of final design efforts and as a result of contractor initiatives during construction.

Minor Rehab and Structural Improvement

Minor rehabilitation and structural improvement alternatives would require a single lane of traffic with flagging to allow the traffic to pass by the paving operations. Lane closures will be limited to a short distance to minimize traffic delays. Access to adjacent, fields, residents, and side roads may be impacted or closed for relatively short durations.

Major Rehab

For major rehabilitation, two-way traffic will be maintained during the construction phase which will require the placement of a temporary roadway. The temporary roadway, constructed within the existing right-of-way, will follow a new alignment placed both by widening of the existing roadway and dropping down into the roadside ditch where possible. In order to minimize permanent impacts to wetlands, waters of the US/State and drainage features, the temporary roadway will be removed where necessary to limit any long term impacts. After removal, the areas with the temporary roadways will be restored according to the final design. Access to adjacent, fields, residents, and side roads may be impacted or closed for relatively short durations. These will be coordinated during construction.

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The roundabout alternative will require temporary bypass roads to allow traffic to pass through the ND 58 / ND 200 intersection while the roundabout is being constructed. It may also require a short term detour using 161st Avenue and a short term closure of 161st Avenue.

At the railroad crossing (RP 0.103), there is not enough width between the railroad lowering arms to provide two open lanes of traffic during construction. In order to avoid the need to remove and reconstruct the lowering arms, one lane-one direction traffic will be allowed at the railroad crossing for a short duration. No right-of-way will be needed from the Railroad as part of this project.

c. Maintenance Responsibility Discussion

Once completed, the proposed improvements to ND 200 lay entirely within North Dakota Right-of-Way, therefore, the maintenance of this roadway and appurtenances will fall under NDDOT jurisdiction.

The construction of the roundabout and the Major Rehabilitation option may have impacts with the connection to 161st Avenue which is currently maintained by McKenzie Co. A maintenance agreement between NDDOT and McKenzie Co may be necessary when considering who will maintain the 161st Avenue leg of the intersection.

d. Summary of Engineering Issues

Irrigation:
This project is in an area with multiple irrigation canals and crossings. Existing irrigation patterns will be maintained. The major rehabilitation will require the extension of an irrigation facilities in the State Line to Bridge segment and the Bridge to US 85 segment as part of the roadway widening improvement.

Utilities:
The design phase has identified minor impacts to Montana-Dakota Utilities (MDU), CenturyLink and Lower Yellowstone Rural Electric Co. (LYREC). Each impact has been coordinated with the respective utility company and will be addressed prior to construction.

An existing MDU individual service pole is located within the clear zone and will require removal of the pole and reconfiguration of the lines.

Two CenturyLink Pedestals, located within the clear zone will be relocated.

An impact to Lower Yellowstone Rural Electric Co. (LYREC) facilities is anticipated in the roundabout option due to the proposed temporary roadway alignment/construction phasing requirements. Construction phasing and the temporary roadway alignment were modified to mitigate this impact. Construction of the permanent roundabout requires the relocation of the existing transformer and power meter providing lighting to the intersection. This minor impact has been coordinated and addressed with LYREC.

Traffic Operations and Safety at ND 200 / ND 58 Intersection:
A summary of the traffic operations and expected crash rate for the ND 200 / ND 58 options are shown in Table 12.

Table 12 – Operational & Safety Comparison of ND 200 / ND 58 Options

Optional Work Item 1	2013	2033	Expected Crash Rate[2]
	LOS[1] (Sec/Veh)	LOS[1] (Sec/Veh)	(crashes / year)
A - **No Build**	**D** (28.6) / SB	**F** (>50) / SB	4.8
B - **Roundabout**	**B** (11.1)	**C** (22.5)	2.5
C - **Additional Turn Lanes**	**B** (14.7) / SB	**E** (36.7) / SB	3.0
D - **Free Right SB to WB**	**D** (32.3) / SB	**F** (>50) / SB	Unknown[3] (HSM pg 14-55)
E - **All-Way Stop**	**C** (15.1)	**F** (>50)	3.6
F - **Signal with Existing Geometry**	**A** (7.8)	**C** (24.6)	3.7

1.Intersection LOS and delay (seconds/vehicle) values represent the overall intersection average for signalized, roundabout, and all-way stop controlled intersections and the worst approach for all other unsignalized intersections.
2. Expected Crash Rate is based on 2010 HCM Predicative Method using 2013 Traffic Volumes.
3. HSM indicates this option has unknown crash effects.

e. Summary of Environmental Issues

Parks and Historic Impacts:
There are no expected impacts to Sundheim Park or the historic pedestrian bridge. Access to these resources will remain intact during the construction phase in order for them to be considered a non-use under section 4(f) of the US DOT Act. There are also irrigation facilities on the project that are owned and operated by the Lower Yellowstone Irrigation Project (LYIP). It was determined that since canals are non-contributing historical features, they were deemed non-4(f) properties.

State Water Commission:
The North Dakota State Commission indicates it has wells throughout the state, and many are within the public right of way. Some of these wells are within the ND 200 project(s) area. It is not expected that these wells will be impacted by any of the alternatives. If however impacted the Water Appropriations Division of the Commission will be contacted and the impacts coordinated.

The State Water Commission has identified the need for a Sovereign Land Permit. This permit is only required if work occurs below the ordinary high water mark of the Yellowstone River.

NRCS Farmland Conversion:
Impacts outside the existing right-of-way are expected to be limited to temporary easements not requiring impacts to adjacent farmland.

Table 13 - Right of Way Summary, State Line E to Yellowstone Bridge

Alternatives	Temporary ROW Needed	Permanent ROW Needed	US Fish & Wildlife Property Interest?	US Forest Service Property Interest?
SS-7-200(014)000				
No Build	---	---	No	No
Minor Rehab	---	---	No	No
Structural Improvement	0.01 Acres	---	No	No
Major Rehab**	0.19 Acres	---	No	No
Work Option ND200 / ND58	Temporary ROW Needed	Permanent ROW Needed	US Fish & Wildlife Property Interest?	US Forest Service Property Interest?
No Improvements	---	---	No	No
Roundabout	0.02 Acres	---	No	No
Turn Lanes	0.01 Acres	---	No	No
Free Right	0.01 Acres	---	No	No
All-way Stop	---	---	No	No
Signal	---	---	No	No

**The option to have aggregate or HBP shoulders has no additional effect on right-of-way.

Table 14 - Right of Way Summary, Bridge Replacement Segment

Alternative	Temporary ROW Needed	Permanent ROW Needed	US Fish & Wildlife Property Interest?	US Forest Service Property Interest?
SS-7-200(015)003				
No Build	---	---	No	No
Structural Improvement**	---	---	No	No

**The option to have aggregate or HBP shoulders has no additional effect on right-of-way.

Table 15 - Right of Way Summary, Yellowstone Bridge to Jct US 85

Alternative	Temporary ROW Needed	Permanent ROW Needed	US Fish & Wildlife Property Interest?	US Forest Service Property Interest?
SS-7-200(016)004				
No Build	---	---	No	No
Minor Rehab	0.07 Acres	---	No	No
Structural Improvement	0.29 Acres	---	No	No
Major Rehab**	1.03 Acres	---	No	No

**The option to have aggregate or HBP shoulders has no additional effect on right-of-way.

Table 16 - Summary of Wetland Impacts, State Line E to Yellowstone Bridge

Alternatives	Temporary Impact	Permanent Impact
SS-7-200(014)000		
No build	---	---
Minor Rehabilitation	---	0.07 Acres
Structural Improvement	---	0.48 Acres
Major Rehabilitation**	0.12 Acres	1.55 Acres
Work Option – ND 200 / ND 58	Temporary Impact	Permanent Impact
A No Intersection Improvements	---	---
B Roundabout	0.04 Acres	0.10 Acres
C Turn Lanes	---	0.06 Acres
D Free-Right	---	0.20 Acres
E All-Way Stop	---	---
F Signal	---	---

**The option to have aggregate or HBP shoulders has no additional effect on wetlands.

Table 17 - Summary of Wetland Impacts, Bridge Replacement Segment

Alternative	Temporary Impact	Permanent Impact
SS-7-200(015)003		
No build	---	---
Structural Improvement **	---	---

**The option to have aggregate or HBP shoulders has no additional effect on wetlands.

Table 18 - Summary of Wetland Impacts, Yellowstone Bridge to Jct US 85

Alternative	Temporary Impact	Permanent Impact
SS-7-200(016)004		
No build	---	---
Minor Rehabilitation	---	---
Structural Improvement	---	0.01 Acres
Major Rehabilitation**	---	0.02 Acres

**The option to have aggregate or HBP shoulders has no additional effect on wetlands.

Table 19 - Summary of Estimated Costs, State Line E to Yellowstone Bridge

Alternatives	Cost
SS-7-200(014)000	
No Build	$0
Minor Rehabilitation	$2,019,000
Structural Improvement	$3,004,000
Major Rehab w/ Aggregate Shoulders	$7,681,000
Major Rehab w/ HBP Shoulders	$8,235,000
Work Option – ND 200 / ND 58	Cost
A. No Intersection Improvements	$0
B. Roundabout	$2,786,000
C. Turn Lanes	$1,727,000
D. Free-Right	$1,230,000
E. All-Way Stop	$3,200
F. Signal	$335,000

Table 20 - Summary of Estimated Costs, Bridge Replacement Segment

Alternative	Cost
SS-7-200(015)003	
No Build	$0
Structural Improvement with Aggregate Shoulders	$1,278,000
Structural Improvement with HBP Shoulders	$1,578,000

Table 21 - Summary of Estimated Costs, Yellowstone Bridge to Jct US 85

Alternative	Cost
SS-7-200(016)004	
No Build	$0.00
Minor Rehabilitation	$8,459,000
Structural Improvement	$9,270,000
Major Rehabilitation Aggregate Shoulders	$23,640,000
Major Rehabilitation HBP Shoulders	$26,940,000

Table 22 - Comparison of Alternatives, State Line E to Yellowstone Bridge

Alternative	Advantages	Disadvantages
SS-7-200(014)000		
Alternative 1-a (No Build)	• No Cost	• Does not meet purpose and need
Alternative 1-b (Minor Rehabilitation)	• Lowest cost that still improves roadway life cycle	• Least pavement condition improvement of the build alternatives
Alternative 1-c (Structural Improvement)	• 20 year pavement life span	• Higher initial cost.
Alternative 1-d (Major Rehabilitation)	• Corrected minimum vertical • 20 year life span • Increased safety with larger shoulders • Increased safety due to larger clear-zone	• Highest cost • Largest potential impact to wetlands
Major Rehab Work Option	Advantages	Disadvantages
Aggregate Shoulders	• No additional cost	• Not as safe as HBP Shoulders • More difficult to maintain than HBP
HBP Shoulders	• Easier to maintain than aggregate shoulders • Slightly safer than aggregate shoulders	• Increased cost
ND 200 / ND 58 Work Option	Advantages	Disadvantages
A - No Intersection Improvements	• No additional cost • No additional impacts	• Does not improve intersection operations
B - Roundabout	• Acceptable LOS for present and future projected traffic • Decreased expected crash rate • Decreased crash severity with lower speeds • Decreased delay on ND 58	• Largest impact area (wetlands and R/W) • 2nd highest cost • Introduction of delay on ND 200 • Challenging snow removal • Challenging for trucks to navigate • Extensive WZTC measures required for construction • Not ideal for high speed facilities • Additional lighting needed • Driver familiarity challenges
C - Turn Lanes	• Acceptable present LOS • Potential short term solution until a signal can be installed (Option G) • Increased safety • Driver familiarity	• Increased cost • Increased impact area • Unacceptable LOS (E) for projected 2033 traffic volumes.
D - Free-Right	• Eliminates stop control for SB to	• Unacceptable present and future LOS

Alternative	Advantages	Disadvantages
SS-7-200(014)000		
	WB (major movement)	• Increased impact area • Impact to rail crossing • No improvement for SB thru and left movements
E – All-Way Stop	• Inexpensive • Acceptable present LOS (C) • No increased impacts (wetlands and R/W) • High driver familiarity • Decreased expected crashes	• Introduction of traffic delay on ND 200 • Unacceptable future LOS (F)
F – Signal	• Minimal Impacts (wetlands and R/W) • No increased roadway work/widening • High driver familiarity • Decreased expected crashes • Acceptable present and future LOS (A, C) • Potential to be phased (signal now, turn lanes later)	• Introduction of traffic delay on ND 200 • Additional maintenance for electrical and communications equipment • Increased cost • High loads could damage or tear down signals.

Table 23 - Comparison of Alternatives, Bridge Replacement Segment

Alternative	Advantages	Disadvantages
SS-7-200(015)003		
Alternative 2-a (No Build)	• No Cost	• Does not meet purpose and need
Alternative 2-b (Structural Improvement)	• Restores pavement structure and extends useful life of pavement	• Increased cost
Option	Advantages	Disadvantages
Aggregate Shoulders	• No additional cost	• Not as safe as HBP Shoulders • More difficult to maintain than HBP
HBP Shoulders	• Easier to maintain than aggregate shoulders • Slightly safer than aggregate shoulders	• Increased cost

Table 24 - Comparison of Alternatives, Yellowstone Bridge to Jct US 85

Alternative	Advantages	Disadvantages
SS-7-200(016)004		
Alternative 3-a (No Build)	• No Cost	• Does not meet purpose and need
Alternative 3-b (Minor Rehabilitation)	• Lowest cost that still improves roadway life cycle	• Least pavement condition improvement of the build alternatives
Alternative 3-c (Structural Improvement)	• Corrected Superelevation • 20 year life span	• Increased cost
Alternative 3-d (Major Rehabilitation)	• Corrected Superelevation • Corrected Vertical Alignment • 20 year life span • Wider shoulders	• Higher cost • Right-of-way impacts expected • Wetland impacts expected
Option	Advantages	Disadvantages
Major Rehab with Aggregate Shoulders	• Less expensive than HBP Shoulders	• Aggregate shoulders more difficult to maintain than HBP • HBP shoulders slightly safer than aggregate shoulders
Major Rehab with HBP Shoulders	• HBP shoulders slightly safer than aggregate shoulders • HBP shoulders easier to maintain than aggregate shoulders	• Highest cost

H. Comments from Draft Documented Cat Ex

Table 25 – Recommendation, State Line E to Yellowstone Bridge

1. Do you concur with the project concepts as proposed?
2. Which alternative(s) should proceed with the project?
1-a. No build
1-b. Minor Rehabilitation
1-c. Structural Improvement
1-d. Major Rehabilitation
3. If Major Rehab is chosen, which shoulder work option should proceed with the project?
A. Aggregate Shoulders
B. HBP Shoulders
4. Which ND 200 / ND 58 intersection work option should proceed with the project?
A. No Intersection Improvements at ND 58 and ND 200
B. ND 58 and ND 200 Intersection Roundabout
C. ND 58 and ND 200 Intersection Turn Lanes
D. ND 58 and ND 200 Intersection SB to WB Free-Right Turn

E. ND 58 and ND 200 Intersection All-Way Stop														
F. ND 58 and ND 200 Intersection Traffic Signal														
	1.		2.				3.		4.					
	YES	NO	1-a	1-b	1-c	1-d	A	B	A	B	C	D	E	F
Office of Project Development	X				X					X				
Office of Transportation Programs	X				X									X
Office of Operations	X					X		X		X				
Bridge Division														
Construction Services Division										X				
Design Division	X				X		X			X				
District	X					X		X		X				
ETS Division														
Maintenance Division														
Materials and Research Division					X					X				
Programming Division														
Planning Division	X				X			X		X				
FHWA														

Table 26 – Recommendation, Bridge Replacement Segment

1. Do you concur with the project concepts as proposed?						
2. Which alternative(s) should proceed with the project?						
2-a. No build						
2-b. Structural Improvement						
3. If the Structural Improvement alternative is chosen, which shoulder work option should proceed with the project?						
A. Aggregate Shoulders						
B. HBP Shoulders						
	1.		2.		3.	
	YES	NO	2-a.	2-b.	A	B
Office of Project Development	X			X	X	
Office of Transportation Programs	X			X		X
Office of Operations	X			X		X

Bridge Division						
Construction Services Division						
Design Division	X			X	X	
District	X			X		X
Environmental and Trans. Services Division						
Maintenance Division						
Materials and Research Division				X		X
Programming Division						
Planning Division	X			X		X
FHWA						

Table 27 – Recommendation, Yellowstone Bridge to Jct US 85

1. Do you concur with the project concepts as proposed?								
2. Which alternative should proceed with the project?								
3-a. No build								
3-b. Minor Rehabilitation								
3-c. Structural Improvement								
3.d. Major Rehabilitation								
3. If Major Rehab is chosen, which shoulder work option should proceed with the project?								
A. Aggregate Shoulders								
B. HBP Shoulders								
	1.		2.				3.	
	YES	NO	3-a.	3-b.	3-c.	3-d.	A	B
Office of Project Development	X				X		X	
Office of Transportation Programs	X				X			X
Office of Operations	X					X		X
Bridge Division								
Construction Services Division								
Design Division	X				X		X	

District	X				X			X
Environmental and Transportation Services Division								
Maintenance Division								
Materials and Research Division					X			
Programming Division								
Planning Division	X					X		X
FHWA								

The following comments were made during the Draft Documented CAT EX review period. These comments may have significant impact to the project(s). A complete listing of all comments is provided in Appendix F.

All Projects (State Line to Jct US 85 – PCN 17861, 20294, 20295):

Comment: Walt Peterson District With the volume of trucks on our highways, we can no longer maintain an aggregate shoulder.

Response: Comment noted.

State Line E to Yellowstone Bridge – PCN 17861:

Comment: Walt Peterson District Roundabout at the jct. of ND 200/ND 58: I had some conversation with Montana DOT and they are looking at a bypass around Fairview. Their initial thoughts have been to go south at our intersection, around town to the south, and connect back to their highway. Fairview is asking them to consider a railroad grade separation south of Fairview as part of this project. I do not know how this would affect our highway system, if we would reroute ND 200, or add to ND 58, I don't think Montana would own the road, and I don't think McKenzie County would want to continue to maintain. Guess we just design the roundabout accordingly.

Response: The roundabout will function nearly the same if more traffic were heading south rather than west.

Comment: Walt Peterson District Railroad tracks located near Montana border: consider adding a truck stopping lane. There is more development of the rail loadings to the

			north of Fairview which will put more trains on this crossing in the future.

Response: In looking at the preliminary design, doesn't look like there is enough room for the truck stopping lane and an acceleration lane with the rail crossing so close to the Montana border and the ND 200 / ND 58 Intersection.

Yellowstone Bridge to Jct US 85 – PCN 20295:

Comment:	Wayde Swenson	Office of Operations	I selected the Major Rehab for the section from the Bridge to US 85 to keep the corridor width consistent (35' to 36'). If the district felt that keeping the corridor width consistent is not an issue I would select 3c.

Response: Recommendations will be included in document.

I. Public Concerns / Need for Public Input

Due to the rural location of this project and no planned changes in the access for residents, no public involvement is anticipated. SOV letters were sent out and replies indicated no further involvement is required.

J. Executive Decisions

State Line E to Yellowstone Bridge, SS-7-200(014)000, PCN 17861

1. Do you concur with the project concepts as proposed?

X Yes

____ No

2. Which alternative should proceed with the project?

_____ Alternative 1-a – No-Build Alternative ($0)

_____ Alternative 1-b – Minor Rehabilitation ($2,019,000)

_____ Alternative 1-c – Structural Improvement ($3,004,000)

X Alternative 1-d – Major Rehabilitation ($7,681,000)

3. If the Major Rehabilitation alternative is chosen, which shoulder work option should proceed with the project?

_____ Aggregate Shoulders (Additional Cost $0)

X HBP Shoulders (Additional Cost $554,000)

4. Which ND 200 / ND 58 intersection work option should proceed with the project?

_____ A - No improvements at ND 58 and ND 200 Intersection (Additional Cost $0)

X B - ND 58 and ND 200 Intersection Roundabout (Additional Cost $2,786,000)

_____ C - ND 58 and ND 200 Intersection Turn Lanes (Additional Cost $1,727,000)

_____ D - ND 58 and ND 200 Intersection SB to WB Free-Right Turn (Additional Cost $1,230,000)

_____ E - ND 58 and ND 200 Intersection All-Way Stop (Additional Cost $3,200)

_____ F - ND 58 and ND 200 Intersection Traffic Signal (Additional Cost $335,000)

Bridge Replacement Segment, SS-7-200(015)003, PCN 20294

1. Do you concur with the project concepts as proposed?

X Yes

____ No

2. Which alternative should proceed with the project?

____ Alternative 2-a – No-Build Alternative ($0)

X Alternative 2-b – Structural Rehabilitation Alternative ($1,278,000)

3. If the Structural Improvement alternative is chosen, which shoulder work option should proceed with the project?

____ Aggregate Shoulders (Additional Cost $0)

X HBP Shoulders (Additional Cost $300,000)

Yellowstone Bridge to Jct US 85, SS-7-200(016)004, PCN 20295

1. Do you concur with the project concepts as proposed?

X Yes

____ No

2. Which alternative should proceed with the project?

____ Alternative 3-a – No-Build Alternative ($0)

____ Alternative 3-b – Minor Rehabilitation ($8,459,000)

____ Alternative 3-c – Structural Improvement ($9,270,000)

X Alternative 3-d - Major Rehabilitation ($23,640,000)

3. If the Major Rehabilitation alternative is chosen, which shoulder work option should proceed with the project?

____ Aggregate Shoulders (Additional Cost $0)

X HBP Shoulders (Additional Cost $3,300,000)

Amendments/Comments for Project No. SS-7-200(014)000, SS-7-200(015)003, or SS-7-200(016)004:

The ATR should not be part of this project but be considered in the state wide project.

Ronald J. Henke, P.E., Deputy Director for Engineering

3/2/15
Date

II. Environmental Impact Checklist

NDDOT ENVIRONMENTAL IMPACT CHECKLIST

The Documented CatEx was developed to enable prompt consideration of the full range of alternatives, environmental issues, regulatory processes, potential impacts, including significant impacts, and unusual circumstances that must be considered before Administrative approval. Supporting documentation demonstrates any commitments or criteria for this CatEx is satisfied and that the action does not involve unusual circumstances [1] or result in significant environmental impacts [2], which would warrant higher level environmental documentation. The Documented CatEx does not eliminate the need for full and complete documentation, agency coordination, permitting, and any additional commitments included in the project record.

Primary Author: _____

NDDOT Environmental Reviewer: _____

Minor Rehabilitation *for projects SS-7-200(014)000 and SS-7-200(016)004 including improvements at intersections of Highway 200 & Highway 58, Highway 200 & Route 1, Highway 200 & Route 16, Highway 200 & Route 13 (149th), Highway 200 & Route 13 (147th)*

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or Indicate NA)	NO (Mark an X or Indicate NA)
1	Air Quality	1.1	Project is not located within or adjacent to USEPA-defined Non-Attainment Area and complies with the State Implementation Plan.		
2	Economic	2.1	Will the project result in a decrease in business or economic activity along the project corridor?		X
3	Energy	3.1	Will the project impact or deplete the energy supply of natural resources?		X
4	Environmental Justice	4.1	Will the project cause any adverse and/or disproportionate impacts on minority and/or low income populations?		X
5	Farmland	5.1	Will the action convert farmland (prime, unique, other than prime or unique that is of statewide importance or local importance) to nonagricultural use?		X
		If yes:			
		5.1.1	The project involves disturbance of 10 acres or less per linear mile or 3 acres per bridge or interchange. *Therefore, per Section 310 of the General Manual, Subpart A, 403.4(b) (4), the project is exempt from FPPA; no further action is required.*		NA
		5.1.2	The project involves disturbance of 10 acres or more per linear mile or greater than 3 acres per bridge or interchange. Therefore, NRCS Consultation is required; has the Farmland Conversion Form been attached?		NA
6	Floodplain / Floodway	6.1	Is the project located within a 100 year floodplain/floodway?		X
		6.1.1	*Has the floodplain determination from the ND State Water Commission been attached?*	X	
		6.2	Will the project place fill material in the 100 year floodplain/floodway?		X
		If yes:			
		6.2.1	*Are the FIRM maps attached?*		NA
7	Hazardous Waste Sites	7.1	Will the project require purchase of right of way or easement that may involve or affect hazardous materials?		X
		If yes:			
		7.1.1	*NDDOH Consultation required; has the Environmental Site Assessment been attached?*		NA
		7.2	Will the project involve construction in an area that contains hazardous materials and/or hazardous waste?		X
		If yes:			
		7.2.1	*NDDOH Consultation required; has the Environmental Site Assessment been attached?*		NA
8	Historical and Archaeological Preservation	8.1	Will the project involve disturbance off the roadway surface?	X	
		8.2	Will the project involve disturbance to a bridge or bridge rail?		X

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO (Mark an X or indicate NA)
	Preservation	If no to both questions:	*The project is the type of project that has No Potential to Affect Historic Properties; no further Section 106 consideration is required. Skip to Resource Category #9*		
		If yes to either of the two questions above:	*Please contact the Cultural Resources Section to complete the following information prior to submittal of the checklist and append by reference the Cultural Resources Report and related correspondence; has this been completed?*	X	
		8.3	Was a Class I File Search completed?	X	
		8.4	Was a Class III Survey (Intensive Inventory) completed?	X	
		8.4.1	Were Sites identified within the Area of Potential Effect (APE)?		X
		8.4.2	SHPO Reference #: 14-5541		
		8.4.3	Did SHPO/THPO concur in a Finding of No Historic Properties Affected?	X	
		8.4.4	Did SHPO/THPO concur in a No Adverse Effect Determination?		NA
		8.4.5	Did SHPO/THPO concur in an Adverse Effect Determination?		NA
		8.5	If the project results in an Adverse Effect, the Adverse Effect documentation to FHWA was provided to the Advisory Council of Historic Preservation (ACHP) on:		
		8.5.1	Did the ACHP accept the opportunity to participate?		NA
		8.5.2	Resolution of Adverse Effect thru a Memorandum of Agreement was completed on:		
		8.5.3	Were commitments included in the coordination with SHPO/THPO?		NA
		8.6	Comments:		
9	Land Use	9.1	Will the project be consistent with plans and policies on land use and growth in the area which will be impacted by the project?	X	
10	Migratory Birds	10.1	Will the project have the potential to adversely impact species protected by the Migratory Bird Treaty Act?	X	
11	Noise	11.1	Does the project include construction of a highway on new location?		X
		11.2	Does the project physically alter the existing highway?	X	
		If yes:			
		11.2.1	Substantial Horizontal Alteration—Does the project reduce the distance between the traffic noise source and the closest receptor by half, between the existing condition to the future build condition?		X
		11.2.2	Substantial Vertical Alternation—Does the project remove shielding, therefore exposing the line-of-sight between the receptor and the traffic noise source? This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor. Projects that incorporate overpasses meet this definition.		X
		11.3	Does the project include the addition of a through-traffic lane(s)? This includes the addition of a through-traffic lane that functions as a High-Occupancy Vehicle (HOV) lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane.		X
		11.4	Does the project include the addition of an auxiliary lane, except for when the auxiliary lane is a turn lane? If the additional lane does not increase the number of through-traffic lanes, the definition is not met and an analysis is not required. **[3]**		X
		11.5	Does the project include the addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange?		X
		11.6	Does the project restripe existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane?		X

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO
		11.7	Does the project include the addition of a new or substantial alternation of a weigh station, rest stop, ride-share lot or toll plaza?		X
		If yes to any of the above questions:	*The project meets the definition of a Type 1 Project per 23 CFR 772.5 and a noise analysis is required for the entire project area as defined in the environmental document; has the Noise Report been completed and appended by reference?*		NA
12	Pedestrians / Bicyclists	12.1	Does the proposed project include pedestrian/bicycle facilities?		X
		If yes:			
		12.1.1	Is the proposed pedestrian/bicycle facility included in the local plan?		NA
		12.2	Will the proposed project affect current pedestrian/bicycle facilities?		X
		If yes:			
		12.2.1	Temporary		NA
		12.2.2	Permanent		NA
13	Right of Way	13.1	Will the project require permanent right of way?		X
		If yes:			
		13.1.1	Number of parcels: NA Number of Acres: NA		
		13.2	Are there any special property interests such as USFWS, Forest Service, Tribal, USACE, Railroad, or State School lands?	X	
		If yes:			
		13.2.1	List the type(s): Railroad Crossing - No Impacts		
		13.3	Will the project require relocation of homes or businesses?		X
		If yes:			
		13.3.1	Number of relocations (indicate number by type below): Homes: NA Businesses: NA		
		13.4	Will the project require temporary construction easements?	X	
		If yes:			
		13.4.1	Number of parcels: 10 Number of Acres: 0.191		
		13.5	Will the project require any access changes?		X
14	Section 4(f)	14.1	Are there any Section 4(f) properties within and/or adjacent to the project area?	X	
		If yes:			
		14.1.1	Publicly owned parks?	X	
		14.1.2	Publicly owned recreation lands and/or facilities?		X
		14.1.3	Wildlife or waterfowl refuges?		X
		14.1.4	Historic sites (included on or eligible for listing on the National Register of Historic Places)?		X
		14.2	Will the project result in a temporary impact?		X
		If yes:	**Please complete the following questions to determine if there is a temporary occupancy of land which may constitute a use under Section 4(f):**		
		14.2.1	Will the duration of the occupancy of the Section 4(f) resource be temporary, i.e. less than the time needed for construction of the project, and there should be no change in ownership of the land?		NA
		14.2.2	Will the scope of work be minor, i.e., both the nature and magnitude of the changes to the Section 4(f) resource is minimal?		NA
		14.2.3	Will there be no anticipated permanent adverse physical impacts, nor will there be interference with the activities or purpose of the resource, on either a temporary or permanent basis?		NA
		14.2.4	Will the land being used be fully restored, i.e., the resource must be returned to a condition which is at least as good as that which existed prior to the proposed project?		NA

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO (Mark an X or indicate NA)
		14.2.5	Documented agreement of the appropriate Federal, State, or local officials having jurisdiction over the resource must be included.		NA
		14.3	Will the project result in a permanent impact?		X
		If yes:	**Then a Section 4(f) use will occur. Please select one of the following documents required:**		
		14.3.1	*Nationwide Programmatic Section 4(f)* documentation completed and attached		NA
		14.3.1.1	Historic Bridges		NA
		14.3.1.2	Historic Sites		NA
		14.3.1.3	Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges		NA
		14.3.1.4	Net Benefit to a Section 4(f) Property		NA
		14.3.1.5	Negative Declaration for Independent Bikeway or Walkway*		NA
		14.3.2	*Individual Section 4(f) Evaluation* completed and attached		NA
		14.3.3	*De Minimis Impact* documentation completed and attached		NA
		14.3.3.1	Public Involvement was completed on? [enter date]		
		14.4	***A negative declaration Section 4(f) (May 23, 1977) is only applicable for independent bikeway or walkway construction projects that require use of publicly owned parks and recreation lands and only when the officials with jurisdiction have given approval in writing that the project is acceptable and consistent with the designated use of property that all possible planning to minimize harm has been accomplished in the location and design of the bikeway or walkway facility. No 4(f) documentation is required other than the officials with jurisdiction letter. Please refer to the provisions in the negative declaration to ensure all requirements are met. Has the official with jurisdiction letter been received?***		NA
15	Section 6(f)	15.1	The Land and Water Conservation Fund Program provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities, as well as funding for shared federal land acquisition and conservation strategies. Does the project affect any recreational property that is encumbered by Land and Water Conservation Funds?		X
		If yes:			
		15.1.1	Are there temporary impacts?		NA
		15.1.2	Are there permanent impacts?		NA
		15.1.3	***Consultation with official with jurisdiction required; has the impact map and mitigation plan been provided?***		NA
16	Social	16.1	Will the project cause a change in neighborhood or community cohesion?		X
		If yes:			
		16.1.1	Temporary		NA
		16.1.2	Permanent		NA
		16.2	Will the project cause a change in travel patterns or accessibility?		X
		If yes:			
		16.2.1	Temporary		NA
		16.2.2	Permanent		NA
		16.3	Will the project cause an impact (mobility/safety) to the emergency services, schools (bus routes), or transit?	X	
		If yes:			
		16.3.1	Temporary	X	
		16.3.2	Permanent		X
17	State Scenic Rivers	17.1	Will the project impact the Little Missouri River within the area designated as a State Scenic River which starts from the ND-SD border and terrminates at its juncture with Lake Sakakawea? *(-NDCC, Chapter 61-29)*		X

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO
		If yes:			
		17.1.1	Coordination with State Scenic River Commission is documented and attached?		NA
18	Temporary Construction	18.1	Does the project require a roadway, bridge, or ramp closure?		X
		18.2	Is a temporary bridge or roadway proposed (i.e. temporary bypass)?	X	
		18.3	Will the project require a detour?	X	
		If yes:			
		18.3.1	Distance: 1.0 Miles Route: 161st Ave		
		18.4	Will provisions be made for through traffic dependent businesses?	X	
		18.5	Will provisions be made to accommodate any local special events or festivals?		X
		18.6	Will the proposed MOT (Maintenance of Traffic) substantially impact environmentally sensitive resources?		X
		18.7	Is there any substantial controversy associated with the proposed MOT?		X
		18.8	Has coordination been completed with local emergency services, schools, and transit?		X
		If yes to any of the questions above:	**Please provide description in the Description of the Proposed Build Alternatives.**		
19	Threatened / Endangered Species	19.1	*Please refer to the Design Manual Reference and Forms for the Section 7 ESA (Endangered Species Act) Guidance. Complete and attach the NDDOT Threatened, Endangered, Candidate Species, and Critical Habitat Affect Determination Table. Has the NDDOT Threatened, Endangered, Candidate Species, and Critical Habitat Affect Determination Table been attached?*	X	
		19.2	Based on the Affect Determination Table, was FHWA coordination required?	X	
		If yes:			
		19.2.1	*FHWA concurs with no effect; has all documentation pertaining to Section 7 of the ESA been attached?*	X	
		19.2.2	*BA warranted; has all documentation related to Section 7 of the ESA been appended by reference?*		X
		If no:	**No further action required.**		
20	Visual	20.1	Does the project fit within the existing visual environment; i.e. transportation corridor?	X	
21	Waterbody Modification and Wildlife	21.1	Is the project adjacent to or located in a waterway, stream, or body of water used for recreation or water supply?	X	
		21.2	Will the project result in any temporary or permanent modifications or degradation to a waterbody, such as impoundments, relocations, channel deepening, filling, etc.?		X
		21.2.1	*USFWS and NDGFD consultation required; has the documentation been attached?*		NA
		21.3	Will the project result in any loss, degradation, or modification of aquatic or terrestrial habitat, impacting fish and/or wildlife?		X
		21.3.1	*USFWS and NDGFD consultation required; has the documentation been attached?*		NA
22	Water Quality	22.1	Will the project disturb a contiguous area greater than one acre?	X	
		22.2	Will the project have multiple individual sites of activity, including one individual site that may have an area of disturbance greater than one acre?	X	
		22.3	Is the project in part or entirely located on reservation land?		X
		If yes:			
		22.3.1	*A Water Quality Certificate may be needed from the EPA for a Section 404 permit and identified in the list of permits below; has this been verified?*		NA

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota		YES (Mark an X or indicate NA)	NO (Mark an X or indicate NA)
23	Wetlands	23.1	*Please refer to the Design Manual Reference and Forms for the Wetlands Impact Table for Environmental Documents contained in the Wetland Information Guidance for NDDOT Designer and attach a completed wetland impact table for the proposed project. Has a completed wetland impact table been attached?*		X	
		23.2	Based on the wetland impact table, is wetland mitigation required?		X	
		If yes:				
		23.2.1	Please identify the proposed mitigation location:	Between RP 2.3 and 2.9		
		23.2.2	Mitigation sites located onsite or offsite not at an approved NDDOT mitigation bank requires a mitigation plan attached for review and approval by the resource and/or regulatory agencies. *If a mitigation plan is required, has it been attached?*		X	
24	Public Involvement	24.1	Were any Public Meetings conducted/scheduled for the proposed project?			X
		If yes	**Identify which type(s):**			
		24.1.1	Public Information Meeting	[Enter Date and Data]		
		24.1.2	Public Input Meeting	[Enter Date and Data]		
		24.1.3	Public Hearing	[Enter Date and Data]		
25	Environmental Commitments	25.1	Will the proposed project include any environmental commitments beyond what is included in the ***Standard Specifications for Road and Bridge Construction*** ?		X	
		If yes:				
		25.1.1	Please list all environmental commitments:	Wetland mitigiation from RP 2.3 to 2.9. Contact SWC where there is a chance roadside wells may be impacted		
26	Permits	26.1	Will the proposed project require any permits from the regulatory agencies?		X	
		If yes:				
		26.1.1	Please list the agencies and all required permits for the proposed project:	NPDES Permit from USEPA, Sovereign Land Permit from North Dakota State Engineer, 404 Permit from USACE, BOR Acknowledgement Esmt Crossing		
27	Early Coordination	27.1	*Have the Project Mailing List, SOV letters, and Responses been attached in an Appendix titled Solicitation of Views?*		X	

Foot Notes:

[1] Unusual circumstances include significant environmental impacts; substantial controversy on environmental grounds; significant impacts on Section 4(f) properties and/or properties protected by Section 106 of the National Historic Preservation Act; or action inconsistent with any Federal, State, or local law, requirement or administrative determination relating to the environmental aspects of the action (23 CFR 771.117(b) and 771.18(b)).

[2] Significant environmental impacts, as defined in 40 CFR 1508.4, are actions which: induce significant impacts to planned growth or land use for the area; require the relocation of significant numbers of people; have a significant impact on any natural, cultural, recreational, historic or other resource; involve significant air, noise, or water quality impacts; have significant impact on travel patterns; or otherwise, either individual or cumulatively, have any significant environmental impacts (23 CFR 771.117(a) and 771.118(a)).

[3] FHWA ND Division Office approved definition

NDDOT ENVIRONMENTAL IMPACT CHECKLIST

The Documented CatEx was developed to enable prompt consideration of the full range of alternatives, environmental issues, regulatory processes, potential impacts, including significant impacts, and unusual circumstances that must be considered before Administrative approval. Supporting documentation demonstrates any commitments or criteria for this CatEx is satisfied and that the action does not involve unusual circumstances [1] or result in significant environmental impacts [2], which would warrant higher level environmental documentation. The Documented CatEx does not eliminate the need for full and complete documentation, agency coordination, permitting, and any additional commitments included in the project record.

Primary Author: _____

NDDOT Environmental Reviewer: _____

Structural Improvement for projects SS-7-200(014)000, SS-7-200(015)003 and SS-7-200(016)004 including improvements at the intersections of Hwy 200 & Hwy 58, Hwy 200 & Route 1, Hwy 200 & Route 16, Hwy 200 & Route 13 (149th), Hwy 200 & Route 13 (147th)

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or Indicate NA)	NO (Mark an X or Indicate NA)
1	Air Quality	1.1	Project is not located within or adjacent to USEPA-defined Non-Attainment Area and complies with the State Implementation Plan.		
2	Economic	2.1	Will the project result in a decrease in business or economic activity along the project corridor?		X
3	Energy	3.1	Will the project impact or deplete the energy supply of natural resources?		X
4	Environmental Justice	4.1	Will the project cause any adverse and/or disproportionate impacts on minority and/or low income populations?		X
5	Farmland	5.1	Will the action convert farmland (prime, unique, other than prime or unique that is of statewide importance or local importance) to nonagricultural use?		X
		If yes:			
		5.1.1	The project involves disturbance of 10 acres or less per linear mile or 3 acres per bridge or interchange. *Therefore, per Section 310 of the General Manual, Subpart A, 403.4(b) (4), the project is exempt from FPPA; no further action is required.*		NA
		5.1.2	The project involves disturbance of 10 acres or more per linear mile or greater than 3 acres per bridge or interchange. Therefore, NRCS Consultation is required; has the Farmland Conversion Form been attached?		NA
6	Floodplain / Floodway	6.1	Is the project located within a 100 year floodplain/floodway?		X
		6.1.1	*Has the floodplain determination from the ND State Water Commission been attached?*	X	
		6.2	Will the project place fill material in the 100 year floodplain/floodway?		X
		If yes:			
		6.2.1	*Are the FIRM maps attached?*		NA
7	Hazardous Waste Sites	7.1	Will the project require purchase of right of way or easement that may involve or affect hazardous materials?		X
		If yes:			
		7.1.1	*NDDOH Consultation required; has the Environmental Site Assessment been attached?*		NA
		7.2	Will the project involve construction in an area that contains hazardous materials and/or hazardous waste?		X
		If yes:			
		7.2.1	*NDDOH Consultation required; has the Environmental Site Assessment been attached?*		NA
8	Historical and Archaeological Preservation	8.1	Will the project involve disturbance off the roadway surface?	X	
		8.2	Will the project involve disturbance to a bridge or bridge rail?		X

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or Indicate NA)	NO
	Preservation	If no to both questions:	*The project is the type of project that has No Potential to Affect Historic Properties; no further Section 106 consideration is required. Skip to Resource Category #9*		
		If yes to either of the two questions above:	*Please contact the Cultural Resources Section to complete the following information prior to submittal of the checklist and append by reference the Cultural Resources Report and related correspondence; has this been completed?*	X	
		8.3	Was a Class I File Search completed?	X	
		8.4	Was a Class III Survey (Intensive Inventory) completed?	X	
		8.4.1	Were Sites identified within the Area of Potential Effect (APE)?		X
		8.4.2	SHPO Reference #: 14-5541		
		8.4.3	Did SHPO/THPO concur in a Finding of No Historic Properties Affected?	X	
		8.4.4	Did SHPO/THPO concur in a No Adverse Effect Determination?		NA
		8.4.5	Did SHPO/THPO concur in an Adverse Effect Determination?		NA
		8.5	If the project results in an Adverse Effect, the Adverse Effect documentation to FHWA was provided to the Advisory Council of Historic Preservation (ACHP) on:		
		8.5.1	Did the ACHP accept the opportunity to participate?		NA
		8.5.2	Resolution of Adverse Effect thru a Memorandum of Agreement was completed on:		
		8.5.3	Were commitments included in the coordination with SHPO/THPO?		NA
		8.6	Comments:		
9	Land Use	9.1	Will the project be consistent with plans and policies on land use and growth in the area which will be impacted by the project?	X	
10	Migratory Birds	10.1	Will the project have the potential to adversely impact species protected by the Migratory Bird Treaty Act?	X	
11	Noise	11.1	Does the project include construction of a highway on new location?		X
		11.2	Does the project physically alter the existing highway?	X	
		If yes:			
		11.2.1	Substantial Horizontal Alteration—Does the project reduce the distance between the traffic noise source and the closest receptor by half, between the existing condition to the future build condition?		X
		11.2.2	Substantial Vertical Alternation—Does the project remove shielding, therefore exposing the line-of-sight between the receptor and the traffic noise source? This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor. Projects that incorporate overpasses meet this definition.		X
		11.3	Does the project include the addition of a through-traffic lane(s)? This includes the addition of a through-traffic lane that functions as a High-Occupancy Vehicle (HOV) lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane.		X
		11.4	Does the project include the addition of an auxiliary lane, except for when the auxiliary lane is a turn lane? If the additional lane does not increase the number of through-traffic lanes, the definition is not met and an analysis is not required. **[3]**		X
		11.5	Does the project include the addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange?		X
		11.6	Does the project restripe existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane?		X

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO (Mark an X or indicate NA)
		11.7	Does the project include the addition of a new or substantial alternation of a weigh station, rest stop, ride-share lot or toll plaza?		X
		If yes to any of the above questions:	*The project meets the definition of a Type 1 Project per 23 CFR 772.5 and a noise analysis is required for the entire project area as defined in the environmental document; has the Noise Report been completed and appended by reference?*		NA
12	Pedestrians / Bicyclists	12.1	Does the proposed project include pedestrian/bicycle facilities?		X
		If yes:			
		12.1.1	Is the proposed pedestrian/bicycle facility included in the local plan?		NA
		12.2	Will the proposed project affect current pedestrian/bicycle facilities?		X
		If yes:			
		12.2.1	Temporary		NA
		12.2.2	Permanent		NA
13	Right of Way	13.1	Will the project require permanent right of way?		X
		If yes:			
		13.1.1	Number of parcels: NA Number of Acres: NA		
		13.2	Are there any special property interests such as USFWS, Forest Service, Tribal, USACE, Railroad, or State School lands?	X	
		If yes:			
		13.2.1	List the type(s): Railroad Crossing - No Impact		
		13.3	Will the project require relocation of homes or businesses?		X
		If yes:			
		13.3.1	Number of relocations (indicate number by type below): Homes: NA Businesses: NA		
		13.4	Will the project require temporary construction easements?	X	
		If yes:			
		13.4.1	Number of parcels: 13 Number of Acres: 0.399		
		13.5	Will the project require any access changes?		X
14	Section 4(f)	14.1	Are there any Section 4(f) properties within and/or adjacent to the project area?	X	
		If yes:			
		14.1.1	Publicly owned parks?	X	
		14.1.2	Publicly owned recreation lands and/or facilities?		X
		14.1.3	Wildlife or waterfowl refuges?		X
		14.1.4	Historic sites (included on or eligible for listing on the National Register of Historic Places)?		X
		14.2	Will the project result in a temporary impact?		X
		If yes:	**Please complete the following questions to determine if there is a temporary occupancy of land which may constitute a use under Section 4(f):**		
		14.2.1	Will the duration of the occupancy of the Section 4(f) resource be temporary, i.e. less than the time needed for construction of the project, and there should be no change in ownership of the land?		NA
		14.2.2	Will the scope of work be minor, i.e., both the nature and magnitude of the changes to the Section 4(f) resource is minimal?		NA
		14.2.3	Will there be no anticipated permanent adverse physical impacts, nor will there be interference with the activities or purpose of the resource, on either a temporary or permanent basis?		NA
		14.2.4	Will the land being used be fully restored, i.e., the resource must be returned to a condition which is at least as good as that which existed prior to the proposed project?		NA

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO (Mark an X or indicate NA)
		14.2.5	Documented agreement of the appropriate Federal, State, or local officials having jurisdiction over the resource must be included.		NA
		14.3	Will the project result in a permanent impact?		X
		If yes:	**Then a Section 4(f) use will occur. Please select one of the following documents required:**		
		14.3.1	*Nationwide Programmatic Section 4(f)* documentation completed and attached		NA
		14.3.1.1	Historic Bridges		NA
		14.3.1.2	Historic Sites		NA
		14.3.1.3	Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges		NA
		14.3.1.4	Net Benefit to a Section 4(f) Property		NA
		14.3.1.5	Negative Declaration for Independent Bikeway or Walkway*		NA
		14.3.2	*Individual Section 4(f) Evaluation* completed and attached		NA
		14.3.3	*De Minimis Impact* documentation completed and attached		NA
		14.3.3.1	Public Involvement was completed on? [enter date]		
		14.4	***A negative declaration Section 4(f) (May 23, 1977) is only applicable for independent bikeway or walkway construction projects that require use of publicly owned parks and recreation lands and only when the officials with jurisdiction have given approval in writing that the project is acceptable and consistent with the designated use of property that all possible planning to minimize harm has been accomplished in the location and design of the bikeway or walkway facility. No 4(f) documentation is required other than the officials with jurisdiction letter. Please refer to the provisions in the negative declaration to ensure all requirements are met. Has the official with jurisdiction letter been received?***		NA
15	Section 6(f)	15.1	The Land and Water Conservation Fund Program provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities, as well as funding for shared federal land acquisition and conservation strategies. Does the project affect any recreational property that is encumbered by Land and Water Conservation Funds?		X
		If yes:			
		15.1.1	Are there temporary impacts?		NA
		15.1.2	Are there permanent impacts?		NA
		15.1.3	*Consultation with official with jurisdiction required; has the impact map and mitigation plan been provided?*		NA
16	Social	16.1	Will the project cause a change in neighborhood or community cohesion?		X
		If yes:			
		16.1.1	Temporary		NA
		16.1.2	Permanent		NA
		16.2	Will the project cause a change in travel patterns or accessibility?		X
		If yes:			
		16.2.1	Temporary		NA
		16.2.2	Permanent		NA
		16.3	Will the project cause an impact (mobility/safety) to the emergency services, schools (bus routes), or transit?	X	
		If yes:			
		16.3.1	Temporary	X	
		16.3.2	Permanent		X
17	State Scenic Rivers	17.1	Will the project impact the Little Missouri River within the area designated as a State Scenic River which starts from the ND-SD border and terrminates at its juncture with Lake Sakakawea? *(-NDCC, Chapter 61-29)*		X

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO (Mark an X or indicate NA)
		If yes:			
		17.1.1	Coordination with State Scenic River Commission is documented and attached?		NA
18	Temporary Construction	18.1	Does the project require a roadway, bridge, or ramp closure?		X
		18.2	Is a temporary bridge or roadway proposed (i.e. temporary bypass)?	X	
		18.3	Will the project require a detour?	X	
		If yes:			
		18.3.1	Distance: 1.0 Miles Route: 161st Ave		
		18.4	Will provisions be made for through traffic dependent busines See Catex 4.a	X	
		18.5	Will provisions be made to accommodate any local special events or festivals?		X
		18.6	Will the proposed MOT (Maintenance of Traffic) substantially impact environmentally sensitive resources?		X
		18.7	Is there any substantial controversy associated with the proposed MOT?		X
		18.8	Has coordination been completed with local emergency services, schools, and transit?		X
		If yes to any of the questions above:	**Roundabout may require detour**		
19	Threatened / Endangered Species	19.1	*Please refer to the Design Manual Reference and Forms for the Section 7 ESA (Endangered Species Act) Guidance. Complete and attach the NDDOT Threatened, Endangered, Candidate Species, and Critical Habitat Affect Determination Table. Has the NDDOT Threatened, Endangered, Candidate Species, and Critical Habitat Affect Determination Table been attached?*	X	
		19.2	Based on the Affect Determination Table, was FHWA coordination required?	X	
		If yes:			
		19.2.1	*FHWA concurs with no effect; has all documentation pertaining to Section 7 of the ESA been attached?*	X	
		19.2.2	*BA warranted; has all documentation related to Section 7 of the ESA been appended by reference?*		X
		If no:	**No further action required.**		
20	Visual	20.1	Does the project fit within the existing visual environment; i.e. transportation corridor?	X	
21	Waterbody Modification and Wildlife	21.1	Is the project adjacent to or located in a waterway, stream, or body of water used for recreation or water supply?	X	
		21.2	Will the project result in any temporary or permanent modifications or degradation to a waterbody, such as impoundments, relocations, channel deepening, filling, etc.?		X
		21.2.1	*USFWS and NDGFD consultation required; has the documentation been attached?*		NA
		21.3	Will the project result in any loss, degradation, or modification of aquatic or terrestrial habitat, impacting fish and/or wildlife?		X
		21.3.1	*USFWS and NDGFD consultation required; has the documentation been attached?*		NA
22	Water Quality	22.1	Will the project disturb a contiguous area greater than one acre?	X	
		22.2	Will the project have multiple individual sites of activity, including one individual site that may have an area of disturbance greater than one acre?	X	
		22.3	Is the project in part or entirely located on reservation land?		X
		If yes:			

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota		YES (Mark an X or indicate NA)	NO (Mark an X or indicate NA)
		22.3.1	*A Water Quality Certificate may be needed from the EPA for a Section 404 permit and identified in the list of permits below; has this been verified?*			NA
23	Wetlands	23.1	*Please refer to the Design Manual Reference and Forms for the Wetlands Impact Table for Environmental Documents contained in the Wetland Information Guidance for NDDOT Designer and attach a completed wetland impact table for the proposed project. Has a completed wetland impact table been attached?*		X	
		23.2	Based on the wetland impact table, is wetland mitigation required?		X	
		If yes:				
		23.2.1	Please identify the proposed mitigation location:	Between RP 2.3 and 2.9		
		23.2.2	Mitigation sites located onsite or offsite not at an approved NDDOT mitigation bank requires a mitigation plan attached for review and approval by the resource and/or regulatory agencies. *If a mitigation plan is required, has it been attached?*		X	
24	Public Involvement	24.1	Were any Public Meetings conducted/scheduled for the proposed project?			X
		If yes	**Identify which type(s):**			
		24.1.1	Public Information Meeting	[Enter Date and Data]		
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25	Environmental Commitments	25.1	Will the proposed project include any environmental commitments beyond what is included in the ***Standard Specifications for Road and Bridge Construction*** ?		X	
		If yes:				
		25.1.1	Please list all environmental commitments:	Wetland mitigiation between RP 2.3 and 2.9. Contact SWC where wells may be impacted		
26	Permits	26.1	Will the proposed project require any permits from the regulatory agencies?		X	
		If yes:				
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27	Early Coordination	27.1	*Have the Project Mailing List, SOV letters, and Responses been attached in an Appendix titled Solicitation of Views?*		X	

Foot Notes:

[1] Unusual circumstances include significant environmental impacts; substantial controversy on environmental grounds; significant impacts on Section 4(f) properties and/or properties protected by Section 106 of the National Historic Preservation Act; or action inconsistent with any Federal, State, or local law, requirement or administrative determination relating to the environmental aspects of the action (23 CFR 771.117(b) and 771.18(b)).

[2] Significant environmental impacts, as defined in 40 CFR 1508.4, are actions which: induce significant impacts to planned growth or land use for the area; require the relocation of significant numbers of people; have a significant impact on any natural, cultural, recreational, historic or other resource; involve significant air, noise, or water quality impacts; have significant impact on travel patterns; or otherwise, either individual or cumulatively, have any significant environmental impacts (23 CFR 771.117(a) and 771.118(a)).

[3] FHWA ND Division Office approved definition

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Primary Author: _____

NDDOT Environmental Reviewer: _____

Major Rehabilitation *projects SS-7-200(014)000 and SS-7-200(016)004 including improvements at the intersections of Highway 200 & Highway 58, Highway 200 & Route 1, Highway 200 & Route 16, Highway 200 & Route 13 (149th), Highway 200 & Route 13 (147th)*

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2	Economic	2.1	Will the project result in a decrease in business or economic activity along the project corridor?		X
3	Energy	3.1	Will the project impact or deplete the energy supply of natural resources?		X
4	Environmental Justice	4.1	Will the project cause any adverse and/or disproportionate impacts on minority and/or low income populations?		X
5	Farmland	5.1	Will the action convert farmland (prime, unique, other than prime or unique that is of statewide importance or local importance) to nonagricultural use?		X
		If yes:			
		5.1.1	The project involves disturbance of 10 acres or less per linear mile or 3 acres per bridge or interchange. *Therefore, per Section 310 of the General Manual, Subpart A, 403.4(b) (4), the project is exempt from FPPA; no further action is required.*		NA
		5.1.2	The project involves disturbance of 10 acres or more per linear mile or greater than 3 acres per bridge or interchange. Therefore, NRCS Consultation is required; has the Farmland Conversion Form been attached?		NA
6	Floodplain / Floodway	6.1	Is the project located within a 100 year floodplain/floodway?		X
		6.1.1	*Has the floodplain determination from the ND State Water Commission been attached?*	X	
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7	Hazardous Waste Sites	7.1	Will the project require purchase of right of way or easement that may involve or affect hazardous materials?		X
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		7.1.1	*NDDOH Consultation required; has the Environmental Site Assessment been attached?*		NA
		7.2	Will the project involve construction in an area that contains hazardous materials and/or hazardous waste?		X
		If yes:			
		7.2.1	*NDDOH Consultation required; has the Environmental Site Assessment been attached?*		NA
8	Historical and Archaeological Preservation	8.1	Will the project involve disturbance off the roadway surface?	X	
		8.2	Will the project involve disturbance to a bridge or bridge rail?		X

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO
		If no to both questions:	*The project is the type of project that has No Potential to Affect Historic Properties; no further Section 106 consideration is required. Skip to Resource Category #9*		
		If yes to either of the two questions above:	*Please contact the Cultural Resources Section to complete the following information prior to submittal of the checklist and append by reference the Cultural Resources Report and related correspondence; has this been completed?*	X	
		8.3	Was a Class I File Search completed?	X	
		8.4	Was a Class III Survey (Intensive Inventory) completed?	X	
		8.4.1	Were Sites identified within the Area of Potential Effect (APE)?		X
		8.4.2	SHPO Reference #: 14-5541		
		8.4.3	Did SHPO/THPO concur in a Finding of No Historic Properties Affected?	X	
		8.4.4	Did SHPO/THPO concur in a No Adverse Effect Determination?		NA
		8.4.5	Did SHPO/THPO concur in an Adverse Effect Determination?		NA
		8.5	If the project results in an Adverse Effect, the Adverse Effect documentation to FHWA was provided to the Advisory Council of Historic Preservation (ACHP) on:		
		8.5.1	Did the ACHP accept the opportunity to participate?		NA
		8.5.2	Resolution of Adverse Effect thru a Memorandum of Agreement was completed on:		
		8.5.3	Were commitments included in the coordination with SHPO/THPO?		NA
		8.6	Comments:		
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11	Noise	11.1	Does the project include construction of a highway on new location?		X
		11.2	Does the project physically alter the existing highway?	X	
		If yes:			
		11.2.1	Substantial Horizontal Alteration—Does the project reduce the distance between the traffic noise source and the closest receptor by half, between the existing condition to the future build condition?		X
		11.2.2	Substantial Vertical Alternation—Does the project remove shielding, therefore exposing the line-of-sight between the receptor and the traffic noise source? This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor. Projects that incorporate overpasses meet this definition.		X
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		11.4	Does the project include the addition of an auxiliary lane, except for when the auxiliary lane is a turn lane? If the additional lane does not increase the number of through-traffic lanes, the definition is not met and an analysis is not required. **[3]**		X
		11.5	Does the project include the addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange?		X
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#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO
		11.7	Does the project include the addition of a new or substantial alternation of a weigh station, rest stop, ride-share lot or toll plaza?		X
		If yes to any of the above questions:	*The project meets the definition of a Type 1 Project per 23 CFR 772.5 and a noise analysis is required for the entire project area as defined in the environmental document; has the Noise Report been completed and appended by reference?*		NA
12	Pedestrians / Bicyclists	12.1	Does the proposed project include pedestrian/bicycle facilities?		X
		If yes:			
		12.1.1	Is the proposed pedestrian/bicycle facility included in the local plan?		NA
		12.2	Will the proposed project affect current pedestrian/bicycle facilities?		X
		If yes:			
		12.2.1	Temporary		NA
		12.2.2	Permanent		NA
13	Right of Way	13.1	Will the project require permanent right of way?		X
		If yes:			
		13.1.1	Number of parcels: NA Number of Acres: NA		
		13.2	Are there any special property interests such as USFWS, Forest Service, Tribal, USACE, Railroad, or State School lands?	X	
		If yes:			
		13.2.1	List the type(s): Railroad Crossing - No Impacts		
		13.3	Will the project require relocation of homes or businesses?		X
		If yes:			
		13.3.1	Number of relocations (indicate number by type below): Homes: NA Businesses: NA		
		13.4	Will the project require temporary construction easements?	X	
		If yes:			
		13.4.1	Number of parcels: 22 Number of Acres: 1.236		
		13.5	Will the project require any access changes?		X
14	Section 4(f)	14.1	Are there any Section 4(f) properties within and/or adjacent to the project area?	X	
		If yes:			
		14.1.1	Publicly owned parks?	X	
		14.1.2	Publicly owned recreation lands and/or facilities?		X
		14.1.3	Wildlife or waterfowl refuges?		X
		14.1.4	Historic sites (included on or eligible for listing on the National Register of Historic Places)?		X
		14.2	Will the project result in a temporary impact?		X
		If yes:	**Please complete the following questions to determine if there is a temporary occupancy of land which may constitute a use under Section 4(f):**		
		14.2.1	Will the duration of the occupancy of the Section 4(f) resource be temporary, i.e. less than the time needed for construction of the project, and there should be no change in ownership of the land?		NA
		14.2.2	Will the scope of work be minor, i.e., both the nature and magnitude of the changes to the Section 4(f) resource is minimal?		NA
		14.2.3	Will there be no anticipated permanent adverse physical impacts, nor will there be interference with the activities or purpose of the resource, on either a temporary or permanent basis?		NA
		14.2.4	Will the land being used be fully restored, i.e., the resource must be returned to a condition which is at least as good as that which existed prior to the proposed project?		NA

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO (Mark an X or indicate NA)
		14.2.5	Documented agreement of the appropriate Federal, State, or local officials having jurisdiction over the resource must be included.		NA
		14.3	Will the project result in a permanent impact?		X
		If yes:	**Then a Section 4(f) use will occur. Please select one of the following documents required:**		
		14.3.1	*Nationwide Programmatic Section 4(f)* documentation completed and attached		NA
		14.3.1.1	Historic Bridges		NA
		14.3.1.2	Historic Sites		NA
		14.3.1.3	Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges		NA
		14.3.1.4	Net Benefit to a Section 4(f) Property		NA
		14.3.1.5	Negative Declaration for Independent Bikeway or Walkway*		NA
		14.3.2	*Individual Section 4(f) Evaluation* completed and attached		NA
		14.3.3	*De Minimis Impact* documentation completed and attached		NA
		14.3.3.1	Public Involvement was completed on?		
		14.4	**A negative declaration Section 4(f) (May 23, 1977) is only applicable for independent bikeway or walkway construction projects that require use of publicly owned parks and recreation lands and only when the officials with jurisdiction have given approval in writing that the project is acceptable and consistent with the designated use of property that all possible planning to minimize harm has been accomplished in the location and design of the bikeway or walkway facility. No 4(f) documentation is required other than the officials with jurisdiction letter. Please refer to the provisions in the negative declaration to ensure all requirements are met. Has the official with jurisdiction letter been received?*		NA
15	Section 6(f)	15.1	The Land and Water Conservation Fund Program provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities, as well as funding for shared federal land acquisition and conservation strategies. Does the project affect any recreational property that is encumbered by Land and Water Conservation Funds?		X
		If yes:			
		15.1.1	Are there temporary impacts?		NA
		15.1.2	Are there permanent impacts?		NA
		15.1.3	*Consultation with official with jurisdiction required; has the impact map and mitigation plan been provided?*		NA
16	Social	16.1	Will the project cause a change in neighborhood or community cohesion?		X
		If yes:			
		16.1.1	Temporary		NA
		16.1.2	Permanent		NA
		16.2	Will the project cause a change in travel patterns or accessibility?		X
		If yes:			
		16.2.1	Temporary		NA
		16.2.2	Permanent		NA
		16.3	Will the project cause an impact (mobility/safety) to the emergency services, schools (bus routes), or transit?	X	
		If yes:			
		16.3.1	Temporary	X	
		16.3.2	Permanent		X
17	State Scenic Rivers	17.1	Will the project impact the Little Missouri River within the area designated as a State Scenic River which starts from the ND-SD border and terrminates at its juncture with Lake Sakakawea? *(-NDCC, Chapter 61-29)*		X

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO
		If yes:			
		17.1.1	Coordination with State Scenic River Commission is documented and attached?		NA
18	Temporary Construction	18.1	Does the project require a roadway, bridge, or ramp closure?		X
		18.2	Is a temporary bridge or roadway proposed (i.e. temporary bypass)?	X	
		18.3	Will the project require a detour?	X	
		If yes:			
		18.3.1	Distance: 1.0 Miles Route: 161st Ave		
		18.4	Will provisions be made for through traffic dependent busines See Catex 4.a	X	
		18.5	Will provisions be made to accommodate any local special events or festivals?		X
		18.6	Will the proposed MOT (Maintenance of Traffic) substantially impact environmentally sensitive resources?		X
		18.7	Is there any substantial controversy associated with the proposed MOT?		X
		18.8	Has coordination been completed with local emergency services, schools, and transit?		X
		If yes to any of the questions above:	**Roundabout may require Detour**		
19	Threatened / Endangered Species	19.1	*Please refer to the Design Manual Reference and Forms for the Section 7 ESA (Endangered Species Act) Guidance. Complete and attach the NDDOT Threatened, Endangered, Candidate Species, and Critical Habitat Affect Determination Table. Has the NDDOT Threatened, Endangered, Candidate Species, and Critical Habitat Affect Determination Table been attached?*	X	
		19.2	Based on the Affect Determination Table, was FHWA coordination required?	X	
		If yes:			
		19.2.1	*FHWA concurs with no effect; has all documentation pertaining to Section 7 of the ESA been attached?*	X	
		19.2.2	*BA warranted; has all documentation related to Section 7 of the ESA been appended by reference?*		X
		If no:	**No further action required.**		
20	Visual	20.1	Does the project fit within the existing visual environment; i.e. transportation corridor?	X	
21	Waterbody Modification and Wildlife	21.1	Is the project adjacent to or located in a waterway, stream, or body of water used for recreation or water supply?	X	
		21.2	Will the project result in any temporary or permanent modifications or degradation to a waterbody, such as impoundments, relocations, channel deepening, filling, etc.?		X
		21.2.1	*USFWS and NDGFD consultation required; has the documentation been attached?*		NA
		21.3	Will the project result in any loss, degradation, or modification of aquatic or terrestrial habitat, impacting fish and/or wildlife?		X
		21.3.1	*USFWS and NDGFD consultation required; has the documentation been attached?*		NA
22	Water Quality	22.1	Will the project disturb a contiguous area greater than one acre?	X	
		22.2	Will the project have multiple individual sites of activity, including one individual site that may have an area of disturbance greater than one acre?	X	
		22.3	Is the project in part or entirely located on reservation land?		X
		If yes:			

#	Resource / Issue Category		Questions to Determine Potential Effects Applicable in North Dakota	YES (Mark an X or indicate NA)	NO
		22.3.1	*A Water Quality Certificate may be needed from the EPA for a Section 404 permit and identified in the list of permits below; has this been verified?*		NA
23	Wetlands	23.1	*Please refer to the Design Manual Reference and Forms for the Wetlands Impact Table for Environmental Documents contained in the Wetland Information Guidance for NDDOT Designer and attach a completed wetland impact table for the proposed project. Has a completed wetland impact table been attached?*	X	
		23.2	Based on the wetland impact table, is wetland mitigation required?	X	
		If yes:			
		23.2.1	Please identify the proposed mitigation location: Between RP 2.3 and 3.0		
		23.2.2	Mitigation sites located onsite or offsite not at an approved NDDOT mitigation bank requires a mitigation plan attached for review and approval by the resource and/or regulatory agencies. *If a mitigation plan is required, has it been attached?*	X	
24	Public Involvement	24.1	Were any Public Meetings conducted/scheduled for the proposed project?		X
		If yes	**Identify which type(s):**		
		24.1.1	Public Information Meeting [Enter Date and Data]		
		24.1.2	Public Input Meeting [Enter Date and Data]		
		24.1.3	Public Hearing [Enter Date and Data]		
25	Environmental Commitments	25.1	Will the proposed project include any environmental commitments beyond what is included in the ***Standard Specifications for Road and Bridge Construction***?	X	
		If yes:			
		25.1.1	Please list all environmental commitments: Wetland mitigiation 2.6 to 2.9. Contact state water commission if water wells might be affected		
26	Permits	26.1	Will the proposed project require any permits from the regulatory agencies?	X	
		If yes:			
		26.1.1	Please list the agencies and all required permits for the proposed project: NPDES Permit from USEPA, Sovereign Land Permit from North Dakota State Engineer, 404 Permit from USACE, BOR Acknowledgement Esmt Crossing		
27	Early Coordination	27.1	*Have the Project Mailing List, SOV letters, and Responses been attached in an Appendix titled Solicitation of Views?*	X	

Foot Notes:

[1] Unusual circumstances include significant environmental impacts; substantial controversy on environmental grounds; significant impacts on Section 4(f) properties and/or properties protected by Section 106 of the National Historic Preservation Act; or action inconsistent with any Federal, State, or local law, requirement or administrative determination relating to the environmental aspects of the action (23 CFR 771.117(b) and 771.18(b)).

[2] Significant environmental impacts, as defined in 40 CFR 1508.4, are actions which: induce significant impacts to planned growth or land use for the area; require the relocation of significant numbers of people; have a significant impact on any natural, cultural, recreational, historic or other resource; involve significant air, noise, or water quality impacts; have significant impact on travel patterns; or otherwise, either individual or cumulatively, have any significant environmental impacts (23 CFR 771.117(a) and 771.118(a)).

[3] FHWA ND Division Office approved definition

APPENDICES

Appendix A
Solicitation of Views

ND-200; State Line E to Yellowstone Bridge; Bridge Replacement Segments; and Yellowstone Bridge to JCT US-85 SOV LIST

7-200(014)000, PCN 17861, 7-200(015)003, PCN 20294, 7-200(015)004, PCN 20295

	Type	Code	Letter	Notes	CTitle	First	Last	Title	Department	Agency	Address	City	State	Zip	Phone	Fax	Response Rec'd	Date Edited
1	STATE	100	#5		Ms.	Jeani	Borchert	Cultural Resource Specialist	Cultural Resource Section	ND Department of Transportation	608 E. Boulevard Ave.	Bismarck	ND	58505-0700	701-328-4378			12/05/06
2	FEDERAL	100	1		Mr.	Eric	Schmit, P.E.		Chief Missile Engineering	Minot Air Force Base	320 Peacekeeper Place	Minot AFB	ND	58705				02/15/13
3	FEDERAL	100	1		Mr.	James	Larsen		Cable Affairs Office	Minot Air Force Base	330 Bomber Blvd	Minot AFB	ND	58705				02/15/13
4	FEDERAL	100	1		Mr.	Weldon	Loudermilk	Regional Director	Great Plains Regional Office	Bureau of Indian Affairs	115 4th Ave. SE, Suite 400	Aberdeen	SD	57401			12/31/13	08/19/13
5	FEDERAL	500	1	Projects affecting lakes, rivers, or coal mines	Mr.	Joe	Hall	Chief, Environmental and Resource Manag	Dakotas Area Office	Bureau of Reclamation	PO Box 1017	Bismarck	ND	58502-1017				01/31/12
6	FEDERAL	200	1		*Sir*	*or*	*Madam*	Acting Regional Administrator	Regional Office	Department of HUD	1670 Broadway, Ste. 200	Denver	CO	80202-4813				
6	FEDERAL	500	1	Use if project is within 5 miles of airport	Ms.	Laurie	Suttmeier	Manager	Bismarck Airports District Office	Federal Aviation Administration	2301 University Drive, Bldg 23B	Bismarck	ND	58504				11/07/12
7	FEDERAL	500	1	Use on projects near rail lines	*Sir*		*or Madam*		Office of Economic Analysis	Federal Railroad Administration	1200 New Jersey Avenue SE	Washington	DC	20590				07/11/11
8	FEDERAL	100	1		*Sir*	*or*	*Madam*	Deputy Base Civil Engineer	319 CES/CD	Grand Forks Air Force Base	525 Tuskegee Airmen Blvd.	Grand Forks AFB	ND	58205-6434			12/16/13	08/16/13
9	FEDERAL	100	#2	Separate SOV letter- do not include in main merge	Mr.	Dan	Cimarosti	Manager	ND Regulatory Office	US Army Corps of Engineers	1513 S. 12th St.	Bismarck	ND	58504				
10	FEDERAL	200	#3	Separate SOV letter- do not include in main merge. See "LETTER CODES" below for threshold of consultation.	Ms.	Mary	Podoll	State Conservationist		US Department of Agriculture - NRCS	PO Box 1458	Bismarck	ND	58502-1458			12/18/13	11/07/12
10	FEDERAL	100	1		Mr.	Gerald	Paulson	Director, Transmission Lines and Substatio	Western Area Power Admin.	US Department of Energy	PO Box 1173	Bismarck	ND	58502-1173	701-221-4531			04/11/07
11	FEDERAL	100	#7	Separate SOV letter- do not include in main merge.	*Sir*		*or Madam*	Manager	**Lostwood Complex**	US Fish & Wildlife Service	**8315 Hwy 8**	**Kenmare**	ND	**58746-9046**	701-848-2466			11/07/12
12	FEDERAL	200	1	Regrading/ROW acquisition	Mr.	Greg	Wiche	Director	Water Resources Division	US Geological Survey	821 E. Interstate Ave.	Bismarck	ND	58501				
13	STATE	100	1		Mr.	Scott	Davis	Executive Director		Indian Affairs Commission	600 E. Blvd. Ave. 1st Floor, Judicial Wing, Rm 117	Bismarck	ND	58505-0300				01/12/11
14	STATE	100	1		Mr.	Lonnie	Hoffer	Disaster Recovery Chief	Department of Homeland Security	ND Department of Emergency Services	PO Box 5511	Bismarck	ND	58506	701-328-8100			10/04/10
15	STATE	100	#4	Separate SOV letter- do not include in main merge	Mr.	David	Glatt	Chief	Environmental Health Section Gold Seal Center	ND Department of Health	918 E. Divide Ave., 4th floor	Bismarck	ND	58501-1947	701-328-5150	701-328-5200	12/18/13	
16	STATE	100	1		Mr.	Steve	Dyke	Supervisor	Conservation Section	ND Game & Fish Department	100 Bismarck Expressway	Bismarck	ND	58501-5095	701-328-6347	701-328-6352	01/03/14	09/27/11
17	STATE	200	1	Regrading/ROW acquisition	Mr.	Edward	Murphy	State Geologist		ND Geological Survey	600 E. Blvd. Ave.	Bismarck	ND	58505-0840	701-328-8000	701-328-8010		01/20/11
18	STATE	100	1		Mr.	Mark	Zimmerman	Director		ND Parks & Recreation Dept.	1600 E. Century Ave., Suite 3	Bismarck	ND	58503-0649	701-328-5357	701-328-5363		05/06/10
19	STATE	100	#6	Separate SOV letter- do not include in main merge	Mr.	Todd	Sando	State Engineer		ND State Water Commission	900 E. Blvd. Ave.	Bismarck	ND	58505-0850			01/03/14	08/06/10
20	STATE	100	1		Mr.	Scott	Hochhalter	State Soil Specialist	NDSU Extension Service	Soil Conservation Committee	2718 Gateway Ave., #104	Bismarck	ND	58503	701-328-9715	701-328-9721		01/20/11
21	CITY	300	1		Mr.	Monte	Pesek	Chairman		**Charbon Township**	14516 Highway 200	Alexander	ND	58831	701-828-3496			
22	CITY	300	1		Mr.	Eddie	Mrachek	Supervisor		**Charbon Township**	P.O. Box 143	Alexander	ND	58831	701-828-3965			
23	CITY	300	1		Mr.	Craig	Wahlstrom	Supervisor		**Charbon Township**	3521 144th Ave NW	Alexander	ND	58831	701-828-3487			
24	CITY	300	1		Mr.	Raymond	Mrachek	Clerk/Treasurer		**Charbon Township**	14221 30th St NW	Alexander	ND	58831	701-828-3487			
25	CITY	300	1		Mr.	Doug	Gullikson	Chairman		**Sioux Township**	15592 36th St NW	Cartwright	ND	58838	701-744-5327			
26	CITY	300	1		Mr.	Dean	Oakland	Supervisor		**Sioux Township**	15341 31st St. NW	Cartwright	ND	58838	701-744-5378			
27	CITY	300	1		Mr.	Steve	Lassey	Supervisor		**Sioux Township**	15321 31st St. NW	Cartwright	ND	58838	701-744-3571			
28	CITY	300	1		Mr.	Ray	Skogen	Clerk		**Sioux Township**	15184 Hwy 200	Cartwright	ND	58838	701-744-9001			
29	CITY	300	1		Ms.	Linda	Paulson	Treasurer		**Sioux Township**	3251 156th Ave NW	Cartwright	ND	58838	701-744-5137			
30	CITY	300	1		Ms.	Carroll	Paulson	Assessor		**Sioux Township**	3251 156th Ave NW	Cartwright	ND	58838	701-744-5137			
31	CITY	300	1					Superintendent		**Yellowstone Public School District 14**	301 2nd Street S	Fairview	MT	59221	701-844-6549			
32	CITY	300	1					Superintendent		**Alexander Public School District 2**	601 Dalaney Street	Alexander	ND	58831	701-828-3334			
33	CITY	300	1					Fire Chief		**Fairview**	P.O. Box 500	Fairview	MT	59221	406-742-5616			
34	CITY	300	1			Brian	Cummins	Mayor		**Fairview**	P.O. Box 426	Fairview	MT	59221				
35	CITY	300	1		Chief	Susan	Quandt	Police Chief	Fairview Police Department	**Fairview**	P.O. Box 426	Fairview	MT	59221	406-742-5531	401-742-5533		
36	CITY	300	1		Mr.	Matt	Schriver	Superintendent		**Fairview School District**	P.O. Box 467	Fairview	MT	59221	406-742-5265	406-742-3336		
37	COUNTY	400	1		Ms.	Cheryl	Grantier	Treasurer		**McKenzie County**	201 5th St., NW, Suite 504	Watford City	ND	58854	701-444-3616	701-842-2307		
38	COUNTY	400	1		Mr.	Walter	Hadley	County Planning Director	Planning & Zoning	**McKenzie County**	201 5th St, NW, Suite 699	Watford City	ND	58854	701-444-6994			
39	COUNTY	400	1		Mr.	Darrel	Minow	Chairman	Soil Conservation District	**McKenzie County**	P.O. Box 583	Watford City	ND	58854-0583	701-842-3628	701-842-6324		
40	COUNTY	400	1		Mr.	Jeff	Shaffer	Assistant Manager	Water Resource District	**McKenzie County**	201 5th St., NW, Suite 1456	Watford City	ND	58854	701-842-2821			
41	COUNTY	400	1		Ms.	Linda	Svihovec	Auditor		**McKenzie County**	201 5th St, NW, Suite 543	Watford City	ND	58854	701-444-3616	701-444-4113		
42	COUNTY	400	1		Chairman	Ronald	Anderson	Commissioner		**McKenzie County**	201 5th St, NW, Suite 543	Watford City	ND	58854	701-675-2267			
43	COUNTY	400	1		Vice Chairman	Richard	Cayko	Commissioner		**McKenzie County**	201 5th St, NW, Suite 543	Watford City	ND	58854	701-774-5139			
44	COUNTY	400	1		Mr.	Roger	Chinn	Commissioner		**McKenzie County**	201 5th St, NW, Suite 543	Watford City	ND	58854	701-863-6604			
45	COUNTY	400	1		Mr.	Rick	Lawler	Commissioner		**McKenzie County**	201 5th St, NW, Suite 543	Watford City	ND	58854	701-842-3719			
46	COUNTY	400	1		Mr.	Douglas	Nordby	Commissioner		**McKenzie County**	201 5th St, NW, Suite 543	Watford City	ND	58854	701-444-3850			
47	COUNTY	400	1		Mr	Jerry	Samuelson	Emergency Management		**McKenzie County**	P.O. Box 1036	Watford City	ND	58854	701-444-6853			
48	COUNTY	400	1		Mr.	Mark	Koeser	Highway Engineer/Supervisor		**McKenzie County**	201 5th Street, NW, Suite 1221	Watford City	ND	58854	701-444-2371	701-444-4113		
49	COUNTY	400	1		Ms.	Carol	Kieson	Superintendant of Schools		**McKenzie County**	201 5th Street, NW	Watford City	ND	58854	701-444-3456			
50	COUNTY	400	1		Sheriff	John	Fulwider	Sheriff		**McKenzie County**	201 5th St., NW, Suite 550	Watford City	ND	58854	701-444-3733	701-842-6554		
51	COUNTY	400	1					Director	Finance	**Richland County**	201 W Main	Sidney	MT	59270				
52	COUNTY	400	1		Mr.	Ray	Trumpower	Richland County Planner Office		**Richland County**	123 W. Main St.	Sidney	MT	59270	406-433-6886	406-433-6983		

	Type	Code	Letter	Notes	CTitle	First	Last	Title	Department	Agency	Address	City	State	Zip	Phone	Fax	Response Rec'd	Date Edited
53	COUNTY	400	1		Mr.	Tony	Barone	Represententative	Soil Conservation District	**Richland County**	123 W. Main St.	Sidney	MT	59270				
54	COUNTY	400	1		Mr	Loren	Young	District 1 Commissioner		**Richland County**	201 W Main	Sidney	MT	59270				
55	COUNTY	400	1		Ms.	Debra	Gilbert	Disaster and Emergency Services		**Richland County**	123 W. Main St.	Sidney	MT	59270	406-433-2220	406-433-6952		
56	COUNTY	400	1					Public Works Roads Department		**Richland County**	123 W. Main St.	Sidney	MT	59270				
57	COUNTY	400	1					Sheriff		**Richland County**	300 12th Ave NW	Sidney	MT	59270	406-433-2919	406-433-4766		
58	REGIONAL	500	1		*Sir*		*or Madam*			Bis-Man Transit Board	3750 E. Rosser	Bismarck	ND	58501				
59	REGIONAL	500	1		Mr.	Wade	Kline	Executive Director		Fargo-Moorhead Metro. Council of Govts.	1 2nd St. N., Ste. 232 Case Plaza	Fargo	ND	58102				11/12/09
60	REGIONAL	500	1		Mr.	Carl	Hokenstad	Executive Director		Bismarck/Mandan MPO	221 N 5 Street, P.O. Box 5503	Bismarck	ND	58506	701-355-1842			07/23/07
61	REGIONAL	500	1		Mr.	Earl	Haugen	Executive Director		Grand Forks - E GF	P.O. Box 5200	Grand Forks	ND	58206-5200	701-232-3242	701-232-5043		07/23/07
62	REGIONAL	500	1		*Sir*		*or Madam*	Executive Director		Tri-County Regional Development Council	P.O. Box 697	Williston	ND	58802-0697	701-577-1358	701-577-1363		
63	COMMRCL	600	1	All railroads and utilities located within the project limits, and adjacent to the project shall be solicited. Contact the NDDOT Utility Engineer or Technical Support person for a list of utility companies to solicit views. List all entities contacted in this space and inlcude table in the PCR's SOV appendix														
56	COMMRCL	600	1		Mr.	Dan	Kaiser			CenturyLink	125 South Dakota Avenue	Sioux Falls	SD	57194				
57	COMMRCL	600	1		Mr.	Robert	Donat	Manager, Engineering - ND/SD		CenturyLink	125 South Dakota Avenue	Sioux Falls	SD	57194				
58	COMMRCL	600	1			Connie	Kassian	Jamestown to Dickinson		CenturyLink	1101 16th Street NE	Mandan	ND	58554				
59	COMMRCL	600	1		Mr.	Royce	Aslakson	Manager		Reservation Communications Coop.	P.O. Box 68	Parshall	ND	58770-0068				
60	COMMRCL	600	1		Mr.	Tim	Jarski	Construction Manager		Reservation Communications Coop.	P.O. Box 68	Parshall	ND	58770-0068				
61	COMMRCL	600	1					Manager		Lower Yellowstone Rural Electric	P.O. Box 1047	Sidney	MT	59270			12/27/13 1/2/14	
62	COMMRCL	600	1		Mr.	John	Skurupey	Manager		McKenzie Electric Coop.	908 4th Ave. NE	Watford City	ND	58854-0649				
63	COMMRCL	600	1		Mr.	Jacob	Zettel			Montana Dakota Utilities	P.O. Box 1407	Dickinson	ND	58602				
64	COMMRCL	600	1		Mr.	Jerry	Paulson			Western Power Administration	P.O. Box 1173	Bismarck	ND	58502-1173			12/13/13	
61	COMMRCL	600	1		Mr.	Keith	Siefert			WBI Pipeline Co.	2010 Montana Avenue	Glendive	MT	59330			12/19/13	
62	COMMRCL	600	1		Mr.	Jacob	Pennington			ONEOK Rockies Midstream	2700 Lincoln Ave SE	Sidney	MT	59270				
63	COMMRCL	600	1		Mr.	Ken	Miller	Land Department		Northern Border Pipeline	13710 FNB Pkwy, Suite 300	Omaha	NE	68154				
64	COMMRCL	600	1		Mr.	Cody	Dukat			Hess Corporation (Belle Fourche)	10892 Hwy 23	Newtown	ND	58763				
65	COMMRCL	600	1		Mr.	Rory	Nelson	Plant Manager	Tioga Gas Plant	Hess Corporation - Tesoro - Amerada Petroleum Corp - Aminoil USA	10384 68th St NW	Tioga	ND	58852				
64	COMMRCL	600	1							Phillips Petroleum Co	600 N DAIRY ASHFORD ST	Houston	TX	77079-1100				
65	COMMRCL	600	1							Texaco Pipeline, Inc.	3352 Highway 85 N	Fryburg	ND	58622-9504	701-575-8191			
62	COMMRCL	600	1							Shell Pipeline Co.	777 WALKER ST	Houston	TX	77002-5316				
63	COMMRCL	600	1		Mr.	Vernon	Klose			Klose Lands, LLP	3032 160th Ave NW	Fairview	MT	59221-9346			12/13/13	
62	COMMRCL	600	1		Mr.	Lane	Grady			Abraxas Petroleum	2519 Beaver Creek Rd	Watford City	ND	58854				
63	COMMRCL	600	1							Oasis Petroleum	5437 137th Avenue NW	Williston	ND	58801				
64	COMMRCL	600	1		Mr.	Randy	Stinner			Brigham Oil & Gas LP	P.O. Box 1395	Bismarck	ND	58502-1395				
66	COMMRCL	600	1		Mr.	Christopher	Hofland			Whiting Oil & Gas Corporation	1700 Broadway, Suite 2300	Denver	CO	80290-2300				

CIVIL SCIENCE
ENGINEERS - SURVEYORS - PLANNERS - SCIENTISTS
222 Airport Road
Williston, ND 58801
Telephone: 701-774-8200
Facsimile: 701-774-8201

December 3, 2013

«CTitle» «First» «Last»
«Title»
«Department»
«Agency»
«Address»
«City», «State» «Zip»

PROJECT NO. 7-200(014)000, PCN 17861
STATE LINE E TO YELLOWSTONE BRIDGE

7-200(015)003, PCN 20294
BRIDGE REPLACEMENT SEGMWENT

7-200(016)004, PCN 20295
YELLOWSTONE BRIDGE TO JCT US 85
MCKENZIE COUNTY

The North Dakota Department of Transportation, in cooperation with the Federal Highway Administration, is proposing a roadway improvement along ND-200 from the North Dakota state line (Montana) to US-85 (18.7 miles).

The project consists of three segments, which include:

- State Line E to Yellowstone Bridge (RP 0.000 to RP 3.004, 3.004 miles)
- Bridge Replacement Segment (RP 3.004 to 4.440, 1.436 miles), and
- Yellowstone Bridge to JCT US-85 (RP 4.440 to RP 18.684, 14.284 miles).

The Department will look at a range of pavement rehabilitation options including: rehabilitating the pavement section with potential asphalt widening to bring the highway up to an acceptable condition to extend the highway service life and provide operational improvements. Major Rehabilitation would require pavement widening and inslope flattening extending the slope toes. This would require the extension of utilities and adjustment of objects within a newly defined clear zone. The project may require permanent and/or temporary right-of-way. Improvements to the intersection of ND-58 and ND-200 will be evaluated including turning lanes and a potential roundabout

This project is expected to be constructed during the 2015 or 2016 construction season.

Permanent and temporary right of way may be needed for the ND-200 project depending on the inslope repairs and pipe extensions required. Also, right of way may be needed at the intersection of ND-58 & ND-0200 depending on the intersection improvement option alternative selected.

To ensure that all social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed projects pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We are particularly interested in any property which your department may own or have an interest in and which would be adjacent to the proposed roadway improvement. We would also appreciate being made aware of any proposed developments your department may be contemplating in the areas under consideration for the proposed roadway facility. Any information that might help us in our studies would be appreciated.

Information or comments relating to environmental or other matters that you might furnish will be used in determining if this project is a "categorical exclusion" or whether an "Environmental Assessment" or a "Draft Environmental Impact Statement" will be prepared.

It is requested that any comments or information be forwarded to our office on or before January 6, 2014. If no reply is received by this date, it will be assumed that you have no comment on this project.

If further information is desired regarding the proposed roadway improvement, please contact Jay Meacham, Consultant Project Manager at (701) 774-8200 ext. 133 in Williston, North Dakota.

JAY F. MEACHAM
Consultant Project Manager

jfm/jk

Enclosure

North Dakota Department of Transportation

Grant Levi, P.E.
Director

Jack Dalrymple
Governor

March 6, 2014

Merl Paaverud
ND State Historic Preservation Officer
ND Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830

Attn: Lisa Steckler, Project Review Coordinator

NDDOT PROJECTS 7-200(014)000 PCN 17861, 7-200(015)003 PCN 20294, 7-200(016)004 PCN 20295 Minor Rehab, Major Rehab and/or Structural Improvement

Project Type: Original Scope: Minor Rehabilitation Mill and HBP Overlay with foreslope flattening
Option 1: Structural Improvement Mill and HBP Overlay with foreslope flattening
Option 2: Major Rehabilitation Mine and Blend with Widening and HBP Surfacing
NDDOT Project #:7-200(014)000, 7-200(015)003, 7-200(016)004 **PCN:** 17861, 20294, 20295
Project Legal Location: McKenzie County
Sections 19, 30 T151N R101W, Sections 19-30 T151N R102W, Sections 21-31 T151N R103W, Sections 27-36 T151N R104W
This project will include fill for the widening from approved sources.
Purpose and Need: The IRI score is in the fair range. The distress score is in the poor range. There are numerous longitudinal and tranverse cracks along with patching and rutting.
Project Description:

Original Scope: Option 1: A minor rehabilitation mill and HBP overlay project with possible inslope flattening is proposed to extend the useful life of the roadway by restoring the pavement structure. If this is a minor rehabilitation project the only safety items that will be addressed are safety hardware that does not meet NCHRP 230 standards or better (guardrail extensions). All other safety items will be addressed if needed as part of the Statewide Safety Program. This option would result in a project with minimal potential to affect cultural resources with material from an approved source.

Addendum Option 1: A Structural Improvement (SI) HBP Overlay is proposed to extend the useful life of the highway by restoring the pavement structure. Based on the existing typical section shown in the Scoping Report, an additional 5" of new HBP could be added to the existing HBP, or the existing HBP could be milled and removed and a total of 8" of new HBP could fit the minimum 28' roadway width without requiring widening. Cross slopes would be corrected to 2.1%, a 20' clear zone would be used, foreslopes steeper than 3:1 would be flattened if cost effect. This project would have potential to affect cultural resources.

Addendum Option 2: A Major Rehabilitation (MaR) Mine & Blend with Widening and HBP Surfacing is proposed to bring the highway up to an acceptable condition to extend the service life and to provide operational improvement. The roadway would be widened and paved to the minimum width of 36' A 4:1 foreslope is recommended for AADT over 2,000. An AASHTO clear zone would be used (a 42' clear zone is recommended for AADT 1500-6000 and a 46' clear zone is recommended for AADT>6000). Pipes and structures may need to be replaced or widened to meet the clear zone. Superelevations and vertical and horizontal curves would be corrected to meet standards if needed. This option would likely require right of way and would require significant coordination to address the irrigation channels through the project. This project would have potential to affect 32MZ1174, the Lower Yellowstone Irrigation and Canal System. If this Option is selected, and the NDDOT cannot avoid the site we will have an adverse effect and need to revisit consultation with SHPO.

APE: The area of potential effect (APE) is the footprint of the project.

Justification: The project is work to an existing highway.

Archaeological Consultant: KLJ

Report Title: North Dakota Highway 200, NDDOT 7-200(014)000 PCN 17861, 7-200(015)003 PCN 20294, 7-200(016)0014 PCN 20295: A Class III Cultural Resource Inventory in McKenzie County, North Dakota.

Results and Recommendations: Two newly recorded site and five previously recorded sites, and one previously recorded site lead were encountered during fieldwork.

32MZ1019, a previously recorded site, is a sparse historic CMS, it is recommended Not Eligible for the NRHP due lacking integrity and potential for intact buried cultural deposits. No avoidance is necessary.

32MZ1174, a previously recorded site, is the Lower Yellowstone Irrigation and Canal System. This historic property is Eligible for the NRHP, avoidance is recommended.

32MZ1556 is a newly recorded segment of the Burlington Northern Santa Fe (BNSF) railway. The newly recorded segment is recommended eligible for the NRHP under Criterion A. Avoidance was recommended by the contractor. The NDDOT will maintain the existing crossing and will not affect the integrity of the railroad.

32MZ2643 is a newly recorded historic CMS is recommended Not Eligible due to a lack of integrity, no further work is recommended.

32MZ1529 is a church located 30 feet outside of the project area. Avoidance is recommended.

32MZ1561 is the WAPA transmission line. The transmission line is recommended Not Eligible for the NRHP.

32MZ1704 is a sparse lithic scatter. It is recommended eligible for the NRHP, and avoidance is recommended.

32MZx108 is recorded as "Nameless Post Office". It was not identified by the contractor within the NDDOT project area, and is unevaluated.

Work within the ROW will not impact the integrity of the railroad segment. It is too early to determine whether, or not we will be able to avoid impacting the Yellowstone Irrigation and Canal System. This will remain unknown until an Option in the Scope of Work is selected.

Agency Determination: No Historic Properties Affected

We request your consideration of this project, and your concurrence with the above determination.

Valerie J. Barbie-Bluemle
Cultural Resources Section, ETS, NDDOT

Enclosure

CIVIL SCIENCE
ENGINEERS - SURVEYORS - PLANNERS - SCIENTISTS
222 Airport Road
Williston, ND 58801
Telephone: 701-774-8200
Facsimile: 701-774-8201

December 3, 2013

Ms. Mary E. Podoll, State Conservationist
U.S. Department of Agriculture - NRCS
P.O. Box 1458
Bismarck, ND 58502-1458

PROJECT NO. 7-200(014)000, PCN 17861
STATE LINE E TO YELLOWSTONE BRIDGE

7-200(015)003, PCN 20294
BRIDGE REPLACEMENT SEGMWENT

7-200(016)004, PCN 20295
YELLOWSTONE BRIDGE TO JCT US 85
MCKENZIE COUNTY

The North Dakota Department of Transportation, in cooperation with the Federal Highway Administration, is proposing a roadway improvement along ND-200 from the North Dakota state line (Montana) to US-85 (18.7 miles).

The project consists of three segments, which include:

- State Line E to Yellowstone Bridge (RP 0.000 to RP 3.004, 3.004 miles)
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- Yellowstone Bridge to JCT US-85 (RP 4.440 to RP 18.684, 14.284 miles).

The Department will look at a range of pavement rehabilitation options including: rehabilitating the pavement section with potential asphalt widening to bring the highway up to an acceptable condition to extend the highway service life and provide operational improvements. Major Rehabilitation would require pavement widening and inslope flattening extending the slope toes. This would require the extension of utilities and adjustment of objects within a newly defined clear zone. The project may require permanent and/or temporary right-of-way. Improvements to the intersection of ND-58 and ND-200 will be evaluated including turning lanes and a potential roundabout

Permanent and temporary right of way may be needed for the ND-200 project depending on the inslope repairs and pipe extensions required. Also, right of way may be needed at the intersection of ND-58 & ND-0200 depending on the intersection improvement option alternative

selected. The proposed project may disturb 10 acres of more per linear mile outside of the existing right-of-way, or 3 acres per existing bridge or interchange outside of the existing right-of-way. Acreage includes both direct and indirect conversion.

This project is expected to be constructed during the 2015 or 2016 construction season.

To ensure that all social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed project pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We are particularly interested in any property which your department may own or have an interest in and which would be adjacent to the proposed roadway improvement. We would also appreciate being made aware of any proposed developments your department may be contemplating in the areas under consideration for the proposed roadway facility. Any information that might help us in our studies would be appreciated.

Please identify any prime farmland in the area. In addition, we request your comments on any effect this project will have on prime farmland. If there is prime or unique farmland within the project area, the information you provide will be used to fill out the Site Assessment portion of the Farmland Conversion Impact Rating Sheet for each alternative under consideration, as required by the Farmland Protection Policy Act (FPPA).

The Federal Highway Administration's Guidelines for Implementing the Final Rule of the Farmland Protection Policy Act for Highway Projects states that if all project alternatives receive a site assessment rating of less than 60 (and, therefore, a maximum overall rating of less than 160), the rating sheet does not have to be sent to the NRCS but will be placed in the project file. Under FPPA, projects with scores of less than 160 are given a minimum level of consideration for protection and no further sites would need to be evaluated.

Information or comments relating to environmental or other matters that you might furnish will be used in determining if this project is a "categorical exclusion" or whether an "Environmental Assessment" or a "Draft Environmental Impact Statement" will be prepared.

It is requested that any comments or information be forwarded to our office on or before January 6, 2014. If no reply is received by this date, it will be assumed that you have no comment on this project.

If further information is desired regarding the proposed roadway improvement, please contact Jay Meacham, Consultant Project Manager at (701) 774-8200 ext. 133 in Williston, North Dakota.

JAY F. MEACHAM
Consultant Project Manager

jfm/jk

Enclosure

CIVIL SCIENCE
ENGINEERS - SURVEYORS - PLANNERS - SCIENTISTS
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Williston, ND 58801
Telephone: 701-774-8200
Facsimile: 701-774-8201

December 3, 2013

Mr. David Glatt
Chief
Environmental Health Section
ND Department of Health
918 E. Divide Ave., 4th floor
Bismarck, ND 58501-1947

PROJECT NO. 7-200(014)000, PCN 17861
STATE LINE E TO YELLOWSTONE BRIDGE

7-200(015)003, PCN 20294
BRIDGE REPLACEMENT SEGMWENT

7-200(016)004, PCN 20295
YELLOWSTONE BRIDGE TO JCT US 85
MCKENZIE COUNTY

The North Dakota Department of Transportation, in cooperation with the Federal Highway Administration, is proposing a roadway improvement along ND-200 from the North Dakota state line (Montana) to US-85 (18.7 miles).

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- State Line E to Yellowstone Bridge (RP 0.000 to RP 3.004, 3.004 miles)
- Bridge Replacement Segment (RP 3.004 to 4.440, 1.436 miles), and
- Yellowstone Bridge to JCT US-85 (RP 4.440 to RP 18.684, 14.284 miles).

The Department will look at a range of pavement rehabilitation options including: rehabilitating the pavement section with potential asphalt widening to bring the highway up to an acceptable condition to extend the highway service life and provide operational improvements. Major Rehabilitation would require pavement widening and inslope flattening extending the slope toes. This would require the extension of utilities and adjustment of objects within a newly defined clear zone. The project may require permanent and/or temporary right-of-way. Improvements to the intersection of ND-58 and ND-200 will be evaluated including turning lanes and a potential roundabout

This project is expected to be constructed during the 2015 or 2016 construction season.

Permanent and temporary right of way may be needed for the ND-200 project depending on the inslope repairs and pipe extensions required. Also, right of way may be needed at the intersection of ND-58 & ND-0200 depending on the intersection improvement option alternative selected.

The following tabulation shows the average daily traffic volumes (ADT) once the new facility is completed and the expected ADT in 20 years after completion.

LOCATION	ADT Upon Completion of Improvement (2015)	Forecasted ADT (2035)
RP 0.000 to RP 0.378	7,819	11,703
RP 0.378 to RP 3.004	3,647	5,670
RP 3.004 to RP 18.684	4,253	7,260

We believe that these volumes are not of the magnitude that would result in the violation of any Air Quality Standards and the project is consistent with the State Implementation Plan for air quality.

Your concurrence in this determination is requested.

To ensure that all social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed project pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We are particularly interested in any issues pertaining to solid and hazardous waste, municipal wastewater, water quality, and the occurrence of past contamination along the project area.

Information or comments relating to environmental or other matters that you might furnish will be used in determining if this project is a "categorical exclusion" or whether an "Environmental Assessment" or a "Draft Environmental Impact Statement" will be prepared.

It is requested that any comments or information be forwarded to our office on or before January 6, 2014. If no reply is received by this date, it will be assumed that you have no comment on this project.

If further information is desired regarding the proposed roadway improvement, please contact Jay Meacham, Consultant Project Manager at (701) 774-8200 ext. 133 in Williston, North Dakota.

JAY F. MEACHAM
Consultant Project Manager

jfm/jk

Enclosure

CIVIL SCIENCE
ENGINEERS - SURVEYORS - PLANNERS - SCIENTISTS
222 Airport Road
Williston, ND 58801
Telephone: 701-774-8200
Facsimile: 701-774-8201

December 3, 2013

Mr. Todd Sando
State Engineer
ND State Water Commission
900 E. Boulevard Avenue
Bismarck, ND 58505-0850

PROJECT NO. 7-200(014)000, PCN 17861
STATE LINE E TO YELLOWSTONE BRIDGE

7-200(015)003, PCN 20294
BRIDGE REPLACEMENT SEGMWENT

7-200(016)004, PCN 20295
YELLOWSTONE BRIDGE TO JCT US 85
MCKENZIE COUNTY

The North Dakota Department of Transportation, in cooperation with the Federal Highway Administration, is proposing a roadway improvement along ND-200 from the North Dakota state line (Montana) to US-85 (18.7 miles).

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- Yellowstone Bridge to JCT US-85 (RP 4.440 to RP 18.684, 14.284 miles).

The Department will look at a range of pavement rehabilitation options including: rehabilitating the pavement section with potential asphalt widening to bring the highway up to an acceptable condition to extend the highway service life and provide operational improvements. Major Rehabilitation would require pavement widening and inslope flattening extending the slope toes. This would require the extension of utilities and adjustment of objects within a newly defined clear zone. The project may require permanent and/or temporary right-of-way. Improvements to the intersection of ND-58 and ND-200 will be evaluated including turning lanes and a potential roundabout

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To ensure that all social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed project pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We are particularly interested in any property which your department may own or have an interest in and which would be adjacent to the proposed roadway improvement. We would also appreciate being made aware of any proposed developments your department may be contemplating in the areas under consideration for the proposed roadway facility. Any information that might help us in our studies would be appreciated. Information or comments relating to environmental or other matters that you might furnish will be used in determining if this project is a "categorical exclusion" or whether an "Environmental Assessment" or a "Draft Environmental Impact Statement" will be prepared.

Please provide information on necessary permits required such as whether the project lies within a floodway or floodplain, lies within “Sovereign Lands”, or could affect a dam, dike, or other device. It is requested that any comments or information be forwarded to our office on or before January 6, 2014.

If further information is desired regarding the proposed roadway improvement, please contact Jay Meacham, Consultant Project Manager at (701) 774-8200 ext. 133 in Williston, North Dakota.

JAY F. MEACHAM
Consultant Project Manager

jfm/jk

Enclosure

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Williston, ND 58801
Telephone: 701-774-8200
Facsimile: 701-774-8201

December 3, 2013

Sir or Madam Manager
Lostwood Complex
8315 Hwy 8
Kenmare, ND 58746-9046

PROJECT NO. 7-200(014)000, PCN 17861
STATE LINE E TO YELLOWSTONE BRIDGE

7-200(015)003, PCN 20294
BRIDGE REPLACEMENT SEGMWENT

7-200(016)004, PCN 20295
YELLOWSTONE BRIDGE TO JCT US 85
MCKENZIE COUNTY

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intersection of ND-58 & ND-0200 depending on the intersection improvement option alternative selected.

To ensure that all social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed project pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We are particularly interested in any Service Interest property within a ½ mile of either side of the proposed roadway improvement. Any information that might help us in our studies would be appreciated.

It is requested that any comments or information be forwarded to our office on or before January 6, 2014. If no reply is received by this date, it will be assumed that you have no comment on this project.

If further information is desired regarding the proposed roadway improvement, please contact Jay Meacham, Consultant Project Manager at (701) 774-8200 ext. 133 in Williston, North Dakota.

JAY F. MEACHAM
Consultant Project Manager

jfm/jk

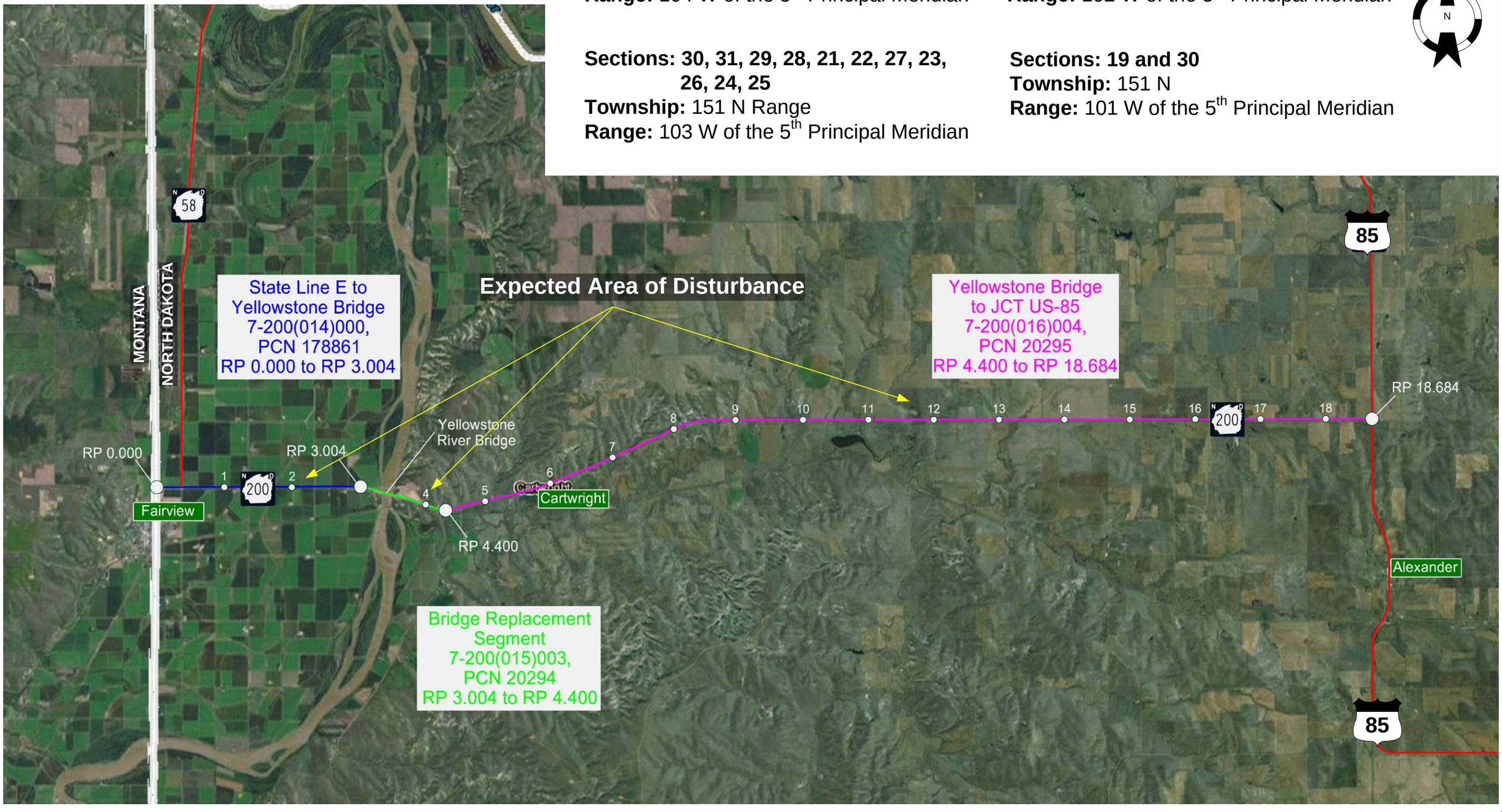
Enclosure

Sections: 30, 29, 28, 27, 26, 25, 32, 33, 34, 35, 36
Township: 151 N
Range: 104 W of the 5th Principal Meridian

Sections: 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30
Township: 151 N
Range: 102 W of the 5th Principal Meridian

Sections: 30, 31, 29, 28, 21, 22, 27, 23, 26, 24, 25
Township: 151 N Range
Range: 103 W of the 5th Principal Meridian

Sections: 19 and 30
Township: 151 N
Range: 101 W of the 5th Principal Meridian



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH AIR BASE WING (AMC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

MEMORANDUM FOR Civil Science Engineers
222 Airport Road
Williston ND 58801

DEC 16 2013

FROM: 319 CES/CEA
525 Tuskegee Airmen Boulevard
Grand Forks AFB, ND 58205-6434

SUBJECT: Scoping Letters Addressed to Grand Forks Air Force Base (AFB), North Dakota

Your firm addresses scoping letters for proposed roadway projects, soliciting views and comments pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We appreciate the inclusion of our agency.

You are particularly interested in any property we may own or have an interest in or propose to develop. Since we often have no such property in the project area, we send no reply and you correctly assume we have no comment. Such is the case of the three projects along ND Hwy 200 from the state line to US Hwy 85, #7-200(014)000, 7-200(015)003 and 7-200(016)004.

If members of your staff have any questions, our point-of-contact for NEPA is Ms. Diane Strom, 319th CES/CEAO, who can be reached at 701-747-6394 or by email at diane.strom@us.af.mil. Thank you for your assistance.

DAVID D. MCCULLOUGH
Asset Management Flight Chief

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH AIR BASE WING (AMC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

MEMORANDUM FOR Civil Science Engineers
222 Airport Road
Williston ND 58801

DEC 16 2013

FROM: 319 CES/CEA
525 Tuskegee Airmen Boulevard
Grand Forks AFB, ND 58205-6434

SUBJECT: Scoping Letters Addressed to Grand Forks Air Force Base (AFB), North Dakota

Your firm addresses scoping letters for proposed roadway projects, soliciting views and comments pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We appreciate the inclusion of our agency.

You are particularly interested in any property we may own or have an interest in or propose to develop. Since we often have no such property in the project area, we send no reply and you correctly assume we have no comment. Such is the case of the three projects along ND Hwy 200 from the state line to US Hwy 85, #7-200(014)000, 7-200(015)003 and 7-200(016)004.

If members of your staff have any questions, our point-of-contact for NEPA is Ms. Diane Strom, 319th CES/CEAO, who can be reached at 701-747-6394 or by email at diane.strom@us.af.mil. Thank you for your assistance.

DAVID D. MCCULLOUGH
Asset Management Flight Chief

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E., Suite 400
Aberdeen, South Dakota 57401

IN REPLY REFER TO:
DESCRM
MC-208

DEC 3 1 2013

Jay F. Meacham
Consultant Project Manager
222 Airport Road
Williston, North Dakota 58801

Dear Mr. Meacham:

We received your letter regarding the proposed roadway improvement project along ND-200 from the North Dakota state line (Montana) to US-85 (18.7 miles) in McKenzie County, North Dakota. We have considered the potential for both environmental damage and impacts to archaeological and Native American religious sites on lands held in trust by the Bureau of Indian Affairs, Great Plains Region. You should be aware, however, that Tribes or Tribal members may have land in fee status near the site of interest. These lands would not necessarily be in our databases, and the Tribes should be contacted directly to ensure all concerns are recognized. The actions considered have the following notification date and project location:

- December 3, 2013 Project No. 7-200(014)000, PCN 17861
  State Line E to Yellowstone Bridge

  7-200(015)003, PCN 20294
  Bridge Replacement Segment

  7-200(016)004, PCN 20295
  Yellowstone Bridge to Jct US 85
  McKenzie County

We have no environmental objection to this action as long as the project complies with all pertinent laws and regulations. Questions regarding environmental opinions and conditions can be addressed to Jeffrey Davis, Environmental Protection Specialist, at (605) 226-7656.

We also find that the listed action will not affect cultural resources on Tribal or individual landholdings for which we are responsible. Methodologies for the treatment of cultural resources now known or yet to be discovered – particularly human remains – must nevertheless utilize the best available science in accordance with provisions of the Native American Graves Protection and Repatriation Act, the Archaeological Resources Protection Act of 1979 (as amended), and all other pertinent legislation and implementing regulations. Archaeological concerns can be addressed to Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

Deputy Regional Director – Indian Services

Department of Energy
Western Area Power Administration
North Dakota Maintenance Office
P.O. Box 1173
Bismarck, ND 58502-1173

December 13, 2013

Mr. Jay Meacham
Civil Science Engineers
222 Airport Road
Williston, ND 58801

Dear Mr. Meacham:

We received your letter dated December 3, 2013, regarding the proposed Highway 200 projects located between the North Dakota state line (Montana) and Highway 85 (Your Project Nos. 7-200(014)000, PCN 17861, 7-200(015)003, PCN 20294, and 7-200(016)004, PCN 20295).

Western Area Power Administration's Watford City-Williston 230-kV transmission line crosses Highway 200 just west of the intersection of Highway 85 and Highway 200, as shown on the enclosed drawing. Our easement is 125 feet wide; 62. 5 feet on each side of the centerline. The minimum approach distance to our conductor for non-electrical workers is 13 feet.

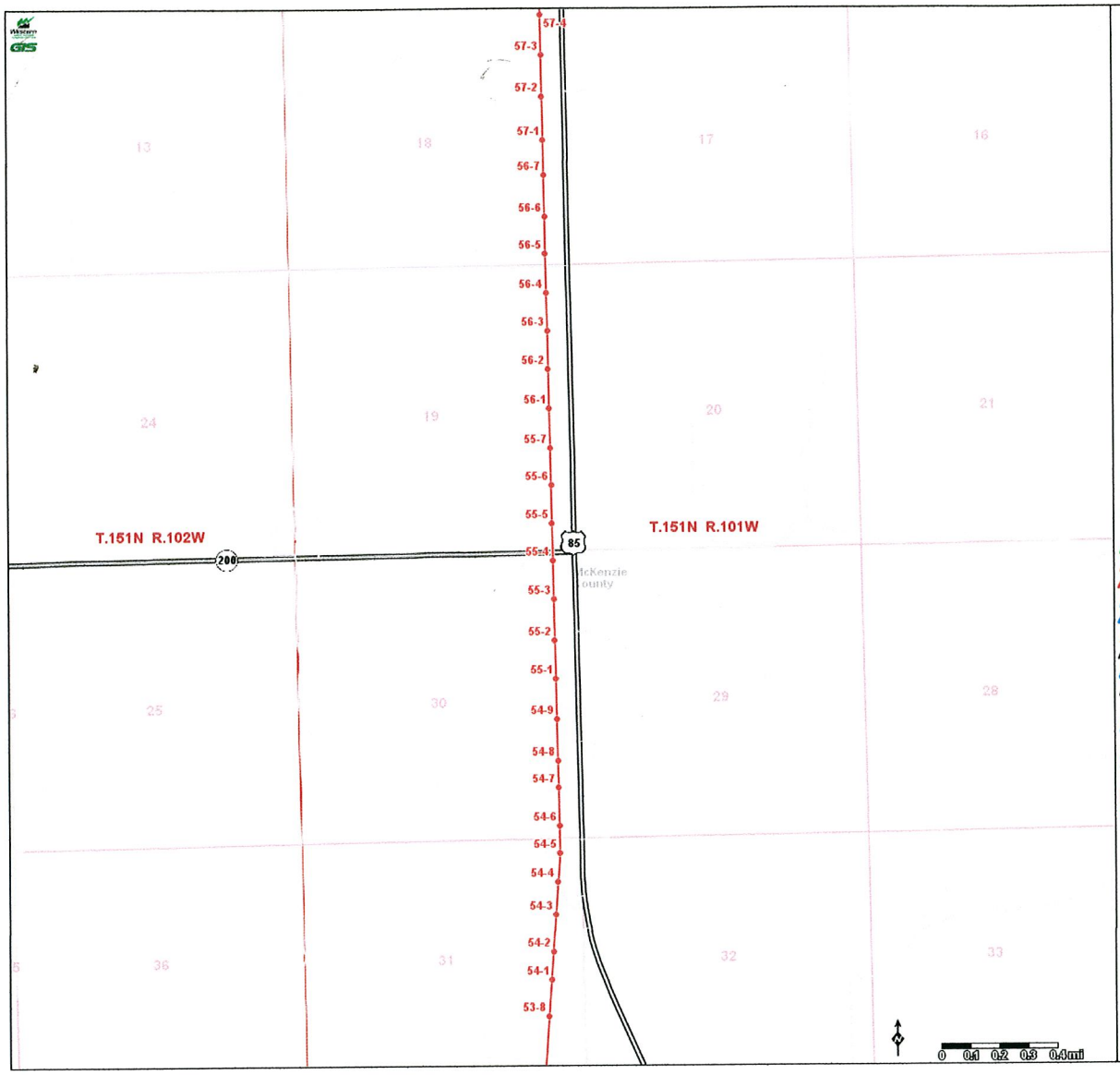
We would like to continue to utilize the existing approaches on both the north and south side of Highway 200 for access to our transmission line. As long as the existing Highway 200 grade/elevation will not be increased within our right-of-way and we can still utilize the existing approaches there should not be any negative impact to our transmission line facilities.

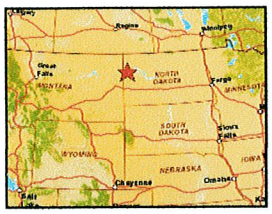
However, if you are planning to raise the existing grade of the highway under our transmission line crossing please provide us with your design information so we can determine any impacts that may have on our transmission line. Thank you for allowing us to comment on your project. If you have any questions please call me at (701) 221-4500.

Sincerely,

L. Alan Wood
Realty Specialist

Enclosure





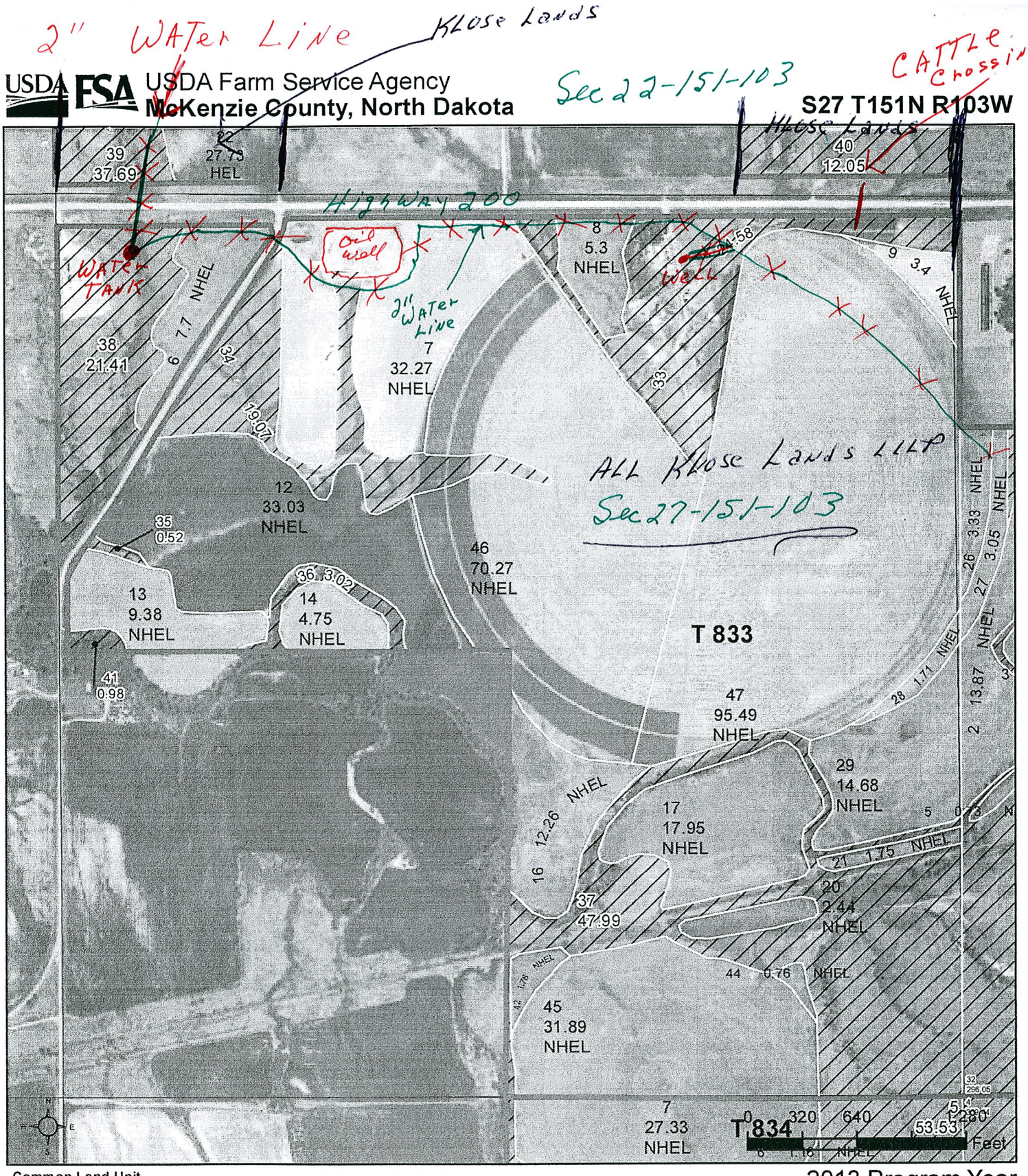
Upper Great Plains Region

Western Area Power Administration
An agency of the U.S. Department of Energy

Map Parameters

UTM ZONE 13, NAD83
Scale 1:21,908
12/13/2013 3:06 P.M.

- Proposed and Re-route Structure
- Complete Structure
- Incomplete Structure
- Distribution Structure
- Proposed or Re-route T-Line
- Complete T-Line
- Complete T-Line DC
- Incomplete T-Line
- Incomplete T-Line DC
- Distribution Line
- Underground T-Line
- INTERSTATE HIGHWAY
- MAJOR HIGHWAY (US/STATE)
- RESIDENTIAL ROAD
- RAMP
- UNPAVED ROAD
- Township & Range
- Sections
- Facility / Substation / Switchyard
- Proposed Facilities
- States
- Counties



Common Land Unit
Cropland / / Non-cropland
Conservation Reserve Program

Wetland Determination Identifiers
Restricted Use
Limited Restrictions
Exempt from Conservation Compliance Provisions

Tract Boundary | Section Line

2013 Program Year

Map Created March 13, 2013

Vernon Klose
Klose Farms
3032 160th Ave NW
Fairview, MT 59221

Farm **5289**

Water Pipeline

Cattle Crossing

33rd St NW

151104

21151103

22151103

WATer pipe LINe

23151103

24151103

19151102

9

10

11

ND-200

200

8

30151103

29151103

7

28151103

27151103

26151103

25151103

30151102

OIL WELL

200

ND-200

6

Dartwright

36151104

31151103

31st St NW

7

150104

15 0102

Jay Meacham

From: Jay Meacham
Sent: Thursday, January 02, 2014 10:30 AM
To: Jay Meacham
Subject: Phone Conversation RE SOV

Project Name: ND 200
Project Number: 13175.00

Monday, December 30, 2013 – 3:54 pm
Received a voice message from:
Jason Brozen (?)
Lower Yellowstone Electric
406-488-1602
701-609-2111 (cell)

They service a piece of North Dakota from the State Line to the River with a distribution line.
There doesn't appear to be anything in the way (unless widening). All of the distribution lines are on private right-of-way.

Jay Meacham, PE
Civil Science, Inc.
222 Airport Road | Williston, ND 58801
Office 701.774.8200 x133 | Fax 701.774.8201
Cell 801.367-4257

CIVIL SCIENCE
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

Jay Meacham

From: Chris Hillesland <chrisjhill@usa.net>
Sent: Friday, December 27, 2013 2:07 PM
To: Jay Meacham
Subject: map
Attachments: Highway 200 NDDOT.pdf

406 480 2187 cell

Jay,

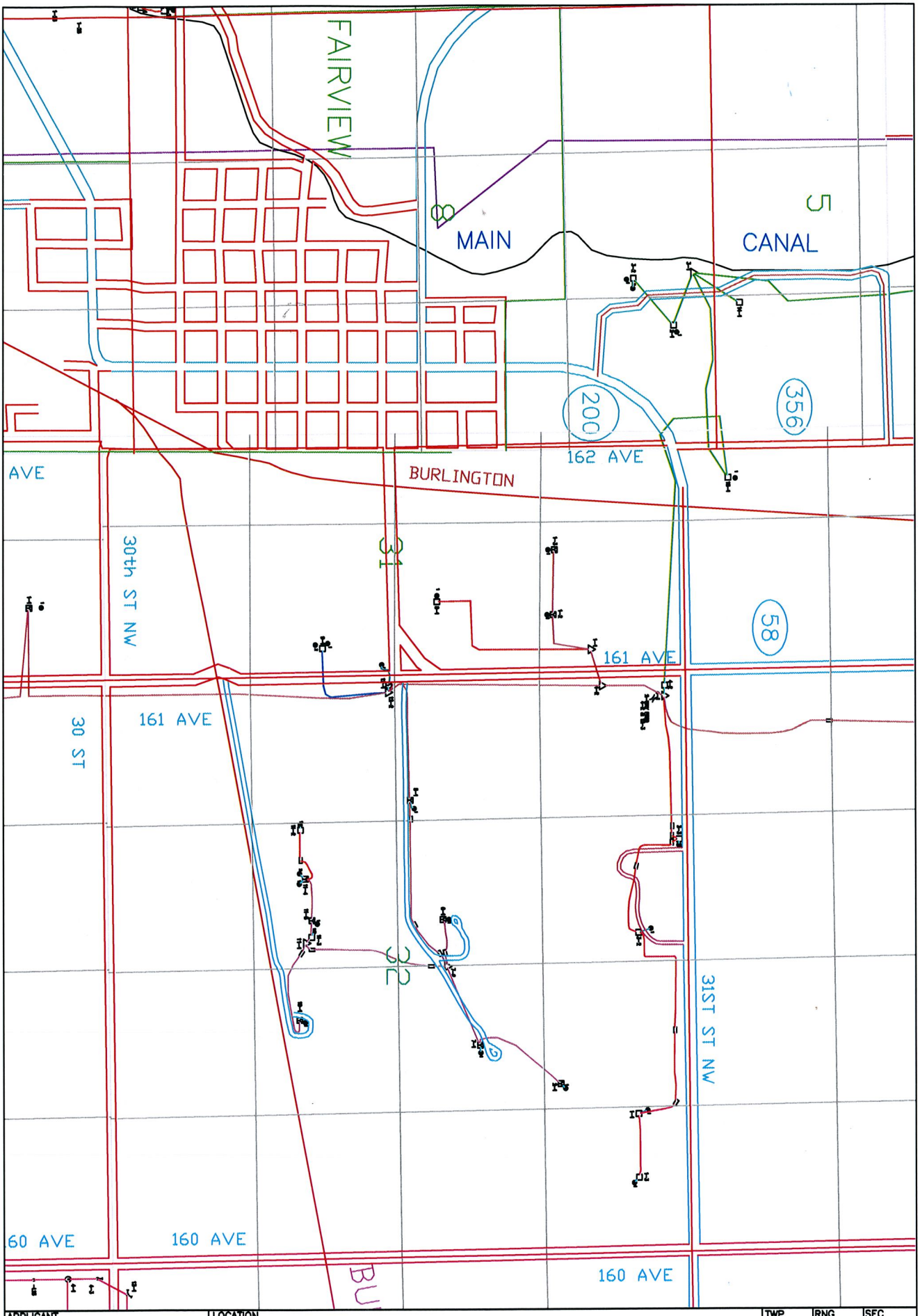
I've attached a map showing our underground electric facilities east of Fairview.

Let me know if you have any questions.

Thanks,

Chris Hillesland
Operations Manager
Lower Yellowstone REA
3200 W. Holly St.
PO Box 1047
Sidney, MT 59270
Office 406-488-1602
Cell 406-480-2187

Email sent following a phone conversation
- Round about caught his attention
  - personally would prefer a stop light for all 4 directions
  - The roadabout, due to the size would have major impacts to the utilities.



APPLICANT	LOCATION			TWP	RNG	SEC
				151	104	31
STATUS:	STAKED BY:	Ruling Span	WO NO.	APP NO.		

NORTH DAKOTA
DEPARTMENT *of* HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

December 18, 2013

Mr. Jay F. Meacham
Consultant Project Manager
Civil Science
222 Airport Road
Williston, ND 58801

Project Nos. 7-200(014)000, PCN 17861
State Line East to Yellowstone Bridge

7-200(015)003, PCN 20294
Bridge Replacement Segment

7-200(016)004, PCN 20295
Yellowstone Bridge to Jct. U.S. 85
McKenzie County

Dear Mr. Meacham:

This department has reviewed the information concerning the above-referenced project submitted under date of December 3, 2013, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further

information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

January 6, 2014

Jay Meacham
Civil Science
222 Airport Road
Williston, ND 58801

Dear Mr.Meacham:

Re: Highway 200 Improvements

The North Dakota Game and Fish Department has received notification of North Dakota Department of Transportation's proposal to conduct pavement rehabilitation options on ND-200 from the North Dakota state line to US-85. The proposed project includes potential asphalt widening, flattening inslopes extending the slope toes, extension of utilities and adjusting objects within the new clear zone. The intersection of ND-58 and ND-200 will be evaluated for turning lanes and potentially a roundabout.

The Department recommends planning around wetlands when possible; however, when these areas cannot be avoided, we suggest contacting the Corps of Engineers' North Dakota Regulatory Office due to probable impacts to wetland acres. The Department recommends a mitigation plan be submitted with any necessary permit applications to facilitate the review process. We also request that the potential for sedimentation entering the receiving water body during the construction be minimized with the use of erosion control measures. Any unavoidable losses of native forest or riparian forest shall be replaced with similar species on a 2:1 basis by incorporating a mitigation planting into the impacted forest to complement the existing woody vegetation.

Increased traffic on our highways has resulted in an upward trend in wildlife-vehicle collisions resulting in vehicle repair costs, human injuries and fatalities, animal loss and numerous other secondary impacts. Nationally, and internationally, there has been increased emphasis on providing wildlife crossings for numerous species ranging from large mammals to amphibians. These crossings not only facilitate wildlife movements across highways reducing human injury and economic loss from vehicle repairs, it also provides habitat connectivity by developing a safe corridor for migrating animals. The Department encourages the project sponsor to look for ways to modify the proposed project to facilitate wildlife crossings and reduce collisions.

Aquatic Nuisance Species (ANS) rules were enacted by the North Dakota Game and Fish Department in 2008. These new regulations are to prevent the introduction of undesirable species of plants and animals. Preventive measures are now required to bring equipment into the state. State law allows for fines up to $1,000 and the confiscation of equipment.

Required measures include removing any and all aquatic vegetation from vessels, motors, trailers, or construction equipment; all water shall be drained from bilge(s) or confined spaces on vessels, boat motors or construction equipment; all species of ANS (this list can be found on the North Dakota Game and Fish Department website) must be removed from vessels, motors, trailers or construction equipment; and water must be drained from confined spaces on vessels, boat motors or construction equipment. These ANS preventative measures extend to any and all vehicles, vessels, trailers, pumps and such equipment that will be used in the project or any/all construction efforts connected with this project in or on the waters of the State. This requirement should be included if occurring during the open water season or if the operation proceeds on the ice pack.

The contractor or his agents or subcontractors must provide the Department a reasonable opportunity to inspect any and all vehicles, vessels, pumps and equipment that will be used in the project in or on the waters of the state prior to those items being launched or placed in the waters of the state. A minimum of 72 hours notice must be provided to the Department for scheduling an inspection. The Department's ANS Biologist, Mr. Fred Ryckman, is to be contacted at the Riverdale Office (701-770-0920) for equipment inspections or any additional information regarding ANS prevention protocols.

Sincerely,

(for) Greg Link
Chief
Conservation & Communication Division

blk

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: http://swc.nd.gov

January 3, 2013

Jay Meacham
Civil Science
222 Airport Road
Williston, ND 58801

Dear Mr. Meacham:

This is in response to your request for review of environmental impacts associated with the Project No. 7-200(014)000,PCN 17861, State Line E to Yellowstone Bridge; 7-200(015)003,PCN 20294, Bridge Replacement Segmwent; and 7-200(016)004, PCN 20295, Yellowstone Bridge to Jct US 85, located in McKenzie County, ND.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- There are no floodplains identified and/or mapped where this proposed project is to take place. The project takes place in an unmapped county. No floodplain permits are necessary from McKenzie County relative to the National Flood Insurance Program.

- A Sovereign Land Permit is needed for this project from the State Engineer. Please contact Jerry Heiser at 701-328-4935, regarding information involving the permit. For your convenience a permit application form is enclosed.

- The ND State Water Commission (Commission) maintains a network of observation/monitor water wells throughout the state, and many are located in public right-of-ways. The well location information can be obtained from the Commission's website at: http://swc.nd.gov.; then click on "Map and Data Resources"; and then click on "Map Services". If water wells may be affected by your project or accidently damaged, please contact the Water Appropriations Division of the Commission at 701-328-2754. Maps are enclosed.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 701-328-4967.

Sincerely,

Linda Weispfenning
Water Resource Planner

LW:dp/1570
Encl.

APPLICATION FOR AUTHORIZATION TO CONSTRUCT A PROJECT WITHIN ISLANDS AND BEDS OF NAVIGABLE STREAMS AND WATERS

Office of the State Engineer
900 East Boulevard
Bismarck, ND 58505-0850

Permit No. _____

Project No. 1625

Date
Received Stamp
Location

SWC USE ONLY

I, the undersigned, do hereby submit the following information to the Office of the State Engineer as an application to construct a project that may impact islands and beds of navigable streams and waters of North Dakota under NDCC Chapter 61-33.

GENERAL INFORMATION:

This Application must include a map from an actual survey, aerial photo or topographic map and plot map (if a development). The size of the map shall be 8½ by 11 inches. The map shall have a north arrow and approximate scale. Indicate the existing or proposed work on the drawing. Plans and specifications must be submitted if project includes construction work.

(1) Project will be located in the: _____ Water Resource District

(2) Legal description to the nearest 40 acre tract: _____ ¼ _____ ¼ Section _____ Township _____ Range _____

(3) Is this application for modification of an existing project ❒Yes ❒No If so, what year was project constructed: _____

By whom: _____

(4) Proposed project involves ❒ water crossing, type _____ ❒ boat dock, ❒ boat ramp, ❒ water intake, ❒dredge, volume _____ cu. yds. ❒ filling, volume _____cu. yds. , type _____,

❒other (explain) _____

(5) Water body on which project will be located: _____

(6) Purpose: _____

(7) Project Description: _____

_____

_____

(8) Contractor, if known: _____

(9) Anticipated construction start date: _____ Completion date: _____

The filing of this application and its approval in no way relieves the applicant or riparian landowner from any responsibility or liability resulting from the construction, operation or failure of the project.

Riparian Land Owner or Organization Sponsor: (Print) _____

Applicant: (Print)_____

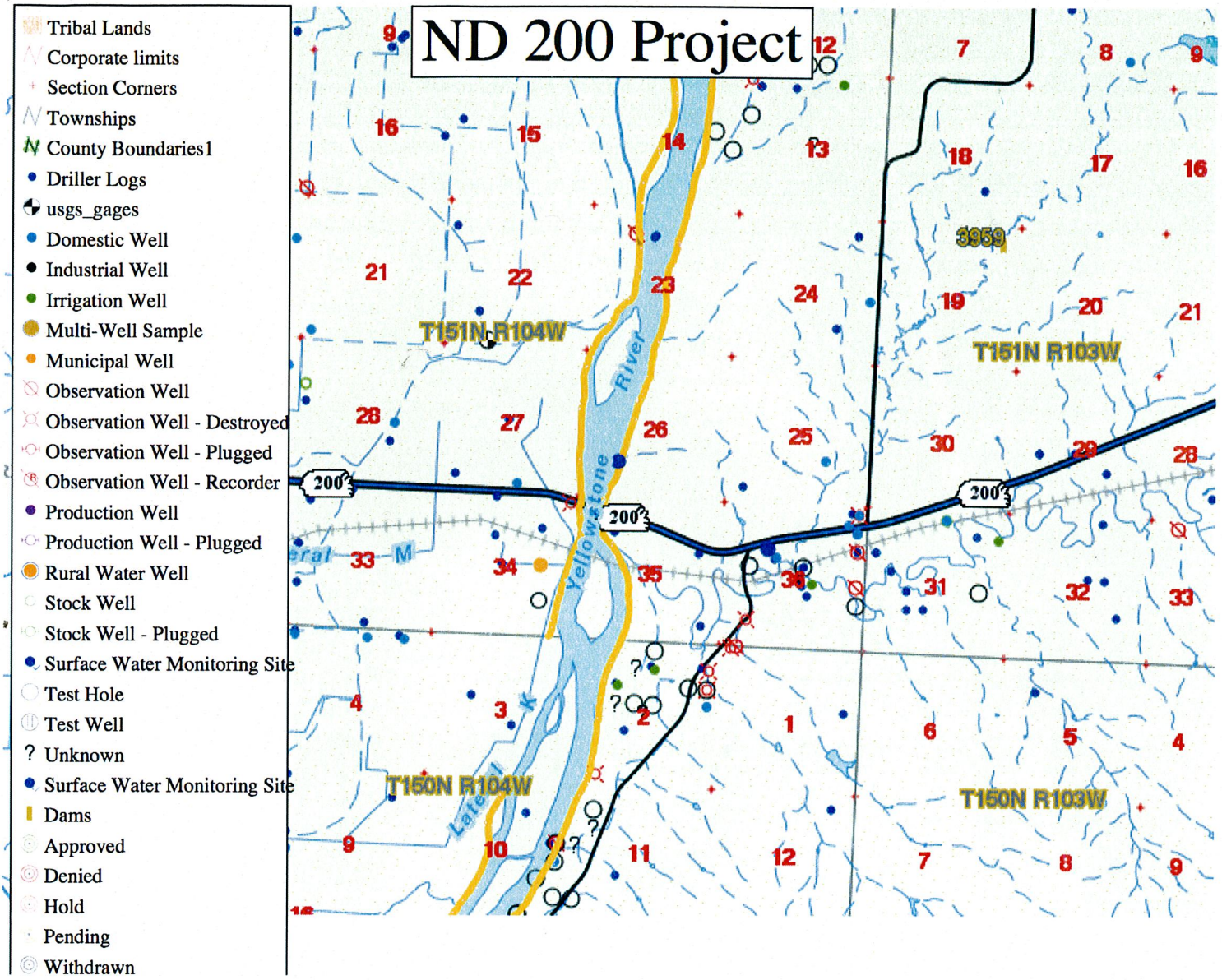
Address: _____

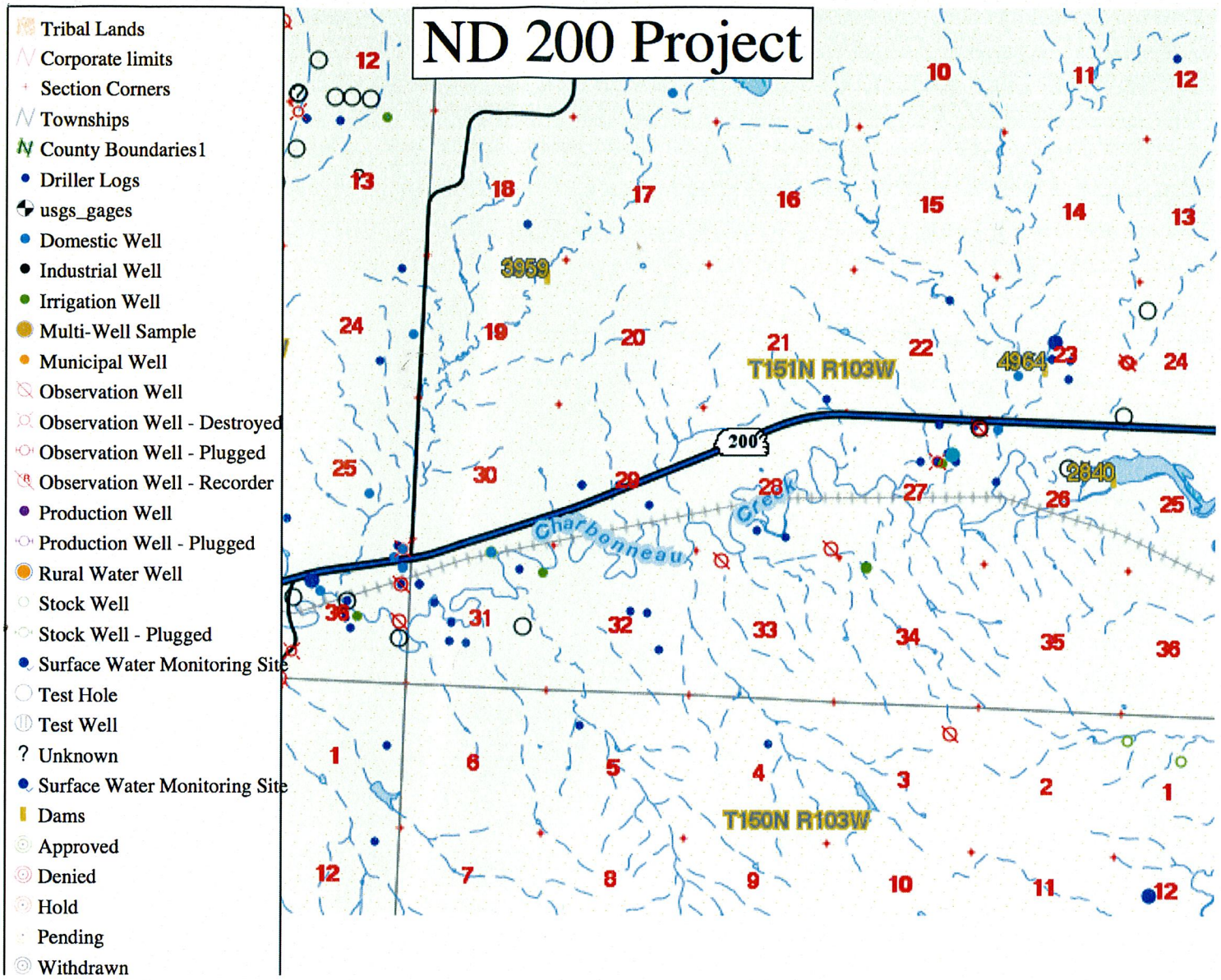
_____

Phone: (H) _____

(W) _____

Signature:_____ Date Submitted: _____
(Riparian landowner or Organization Sponsoring the project)


ND 200 Project
Tribal Lands
Corporate limits
Section Corners
Townships
County Boundaries1
Driller Logs
usgs_gages
Domestic Well
Industrial Well
Irrigation Well
Multi-Well Sample
Municipal Well
Observation Well
Observation Well - Destroyed
Observation Well - Plugged
Observation Well - Recorder
Production Well
Production Well - Plugged
Rural Water Well
Stock Well
Stock Well - Plugged
Surface Water Monitoring Site
Test Hole
Test Well
Unknown
Surface Water Monitoring Site
Dams
Approved
Denied
Hold
Pending
Withdrawn
T151N R104W
T151N R103W
T150N R104W
T150N R103W
Yellowstone River
Lateral K
200
3959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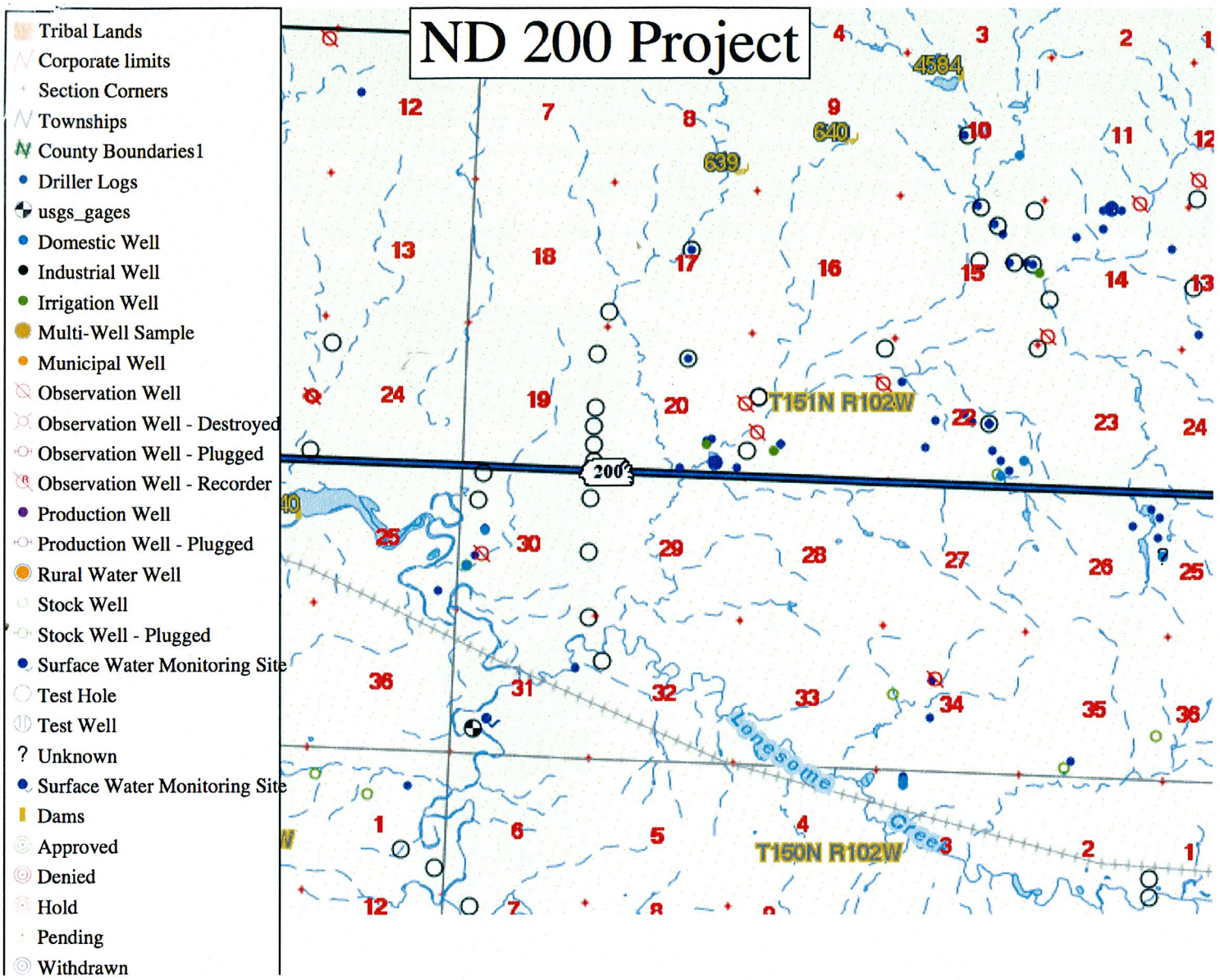
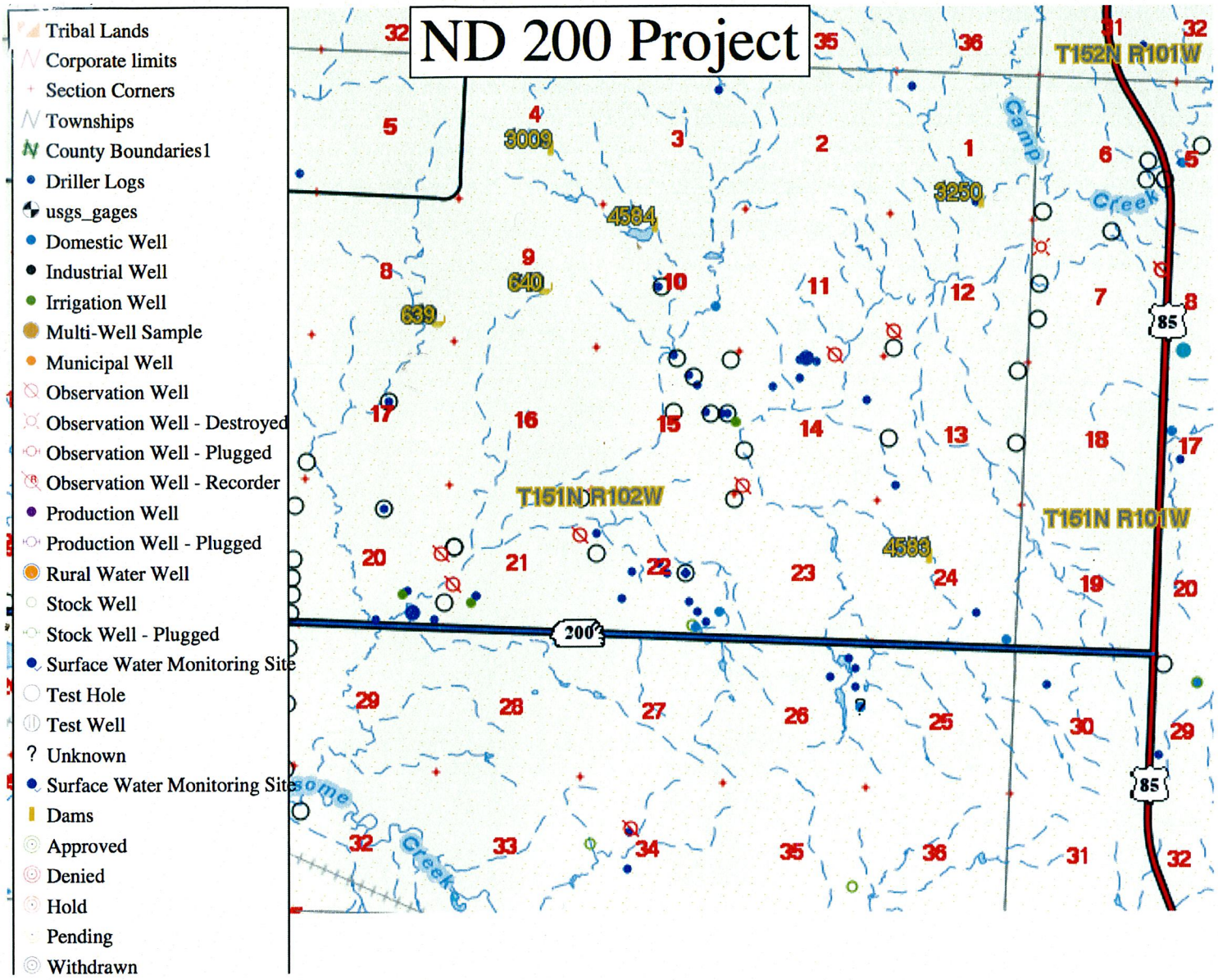
Denied
Hold
Pending
Withdrawn
T151N R103W
T150N R103W
200
Charbonneau
Creek
3959
4964
2340

ND 200 Project

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Test Well
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Surface Water Monitoring Site
Dams
Approved
Denied
Hold
Pending
Withdrawn
T152N R101W
T151N R102W
T151N R101W
Camp Creek
Creek
3009
4564
3250
640
639
4588
200
85
85

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
PO Box 1458
Bismarck, ND 58502-1458

December 18, 2013

Jay F. Meacham
Consultant Project Manager
Civil Science
222 Airport Road
Williston, North Dakota 58801

PROJECT NO. 7-200(014)000, PCN 17861
STATE LINE E TO YELLOWSTONE BRIDGE

7-200(015)003, PCN 20294
BRIDGE REPLACEMENT SEGMENT

7-200(016)004, PCN 20295
YELLOWSTONE BRIDGE TO JCT US 85
MCKENZIE COUNTY

Dear Mr. Meacham:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated December 3, 2013, concerning a proposed roadway improvement along ND-200 from the North Dakota state line (Montana) to US-85 (18.7 miles), and acknowledge your request to determine whether your project affects farmland as defined in Sec. (658.2 a) of the Code of Federal Regulations (CFR) dealing with the Farmland Protection Policy Act (FPPA). NRCS has a major responsibility with the FPPA in documenting conversion of farmland (i.e., prime, statewide importance) to non-agriculture use when the project utilizes federal funds. FPPA may apply to your project. Below are instructions for completing the first step in the FPPA process.

Farmland Protection Policy Act

Enclosed is a Farmland Conversion Impact Rating Form AD-1006 or you may utilize a web based format http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/alphabetical/fppa to record the following. Please complete Parts I and III for those areas outside the current road right-of-way and return to Jon Stika, Dickinson AO. If applicable, you may email the above information to jon.stika@nd.usda.gov We will also need a map of the site(s) where the project will be outside the current road right-of-way so we can accurately assess the area (e.g., 1:20,000 or 1:24,000). If the farmland (i.e., Prime Farmland, Statewide Importance, Local Importance) is determined to be subject to the FPPA, we will then complete Parts II and IV. NRCS will

measure the relative value of the site as farmland on a scale of 0 to 100 according to the information sources listed in CFR 658.5(a). If FPPA applies to this site, Form AD-1006 will be returned to your agency for completion of Part VI, Site Assessment Criteria.

NRCS is continuing to monitor Farmland Conversion Impact Ratings (form AD-1006, form AD-106) and are concerned with how some of the forms are being completed, particularly Part IV - Site Assessment Criteria, which is being scored below 60 points. As a general rule, if FPPA applies and the site is in agricultural production, rarely would it be appropriate for it to have a score of less than 60 points. If you have question concerning the Farmland Conversion Impact Ratings or assessment factors, please contact Steve Sieler, State Soil Liaison, NRCS, Bismarck, ND, at (701) 530-2019.

Wetlands

The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose, or to have the effect of making agricultural production possible, loss of USDA benefits could occur. You are anticipating construction outside the right-of-way where wetland impacts may occur that could make production possible. The NRCS has developed the following guidelines to help avoid impacts to wetlands and possible loss of USDA benefits for producers. If these guidelines are followed, the impacts to the wetland will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements:

- Disturbance to the wetland must be temporary.
- No drainage of wetland is allowed (temporary or permanent).
- Mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained.
- Temporary side cast material must be placed in such a manner not to be dispersed in the wetland.
- All trenches in a wetland must be backfilled to the original elevation.

NRCS would recommend that impacts to wetland be avoided.

Sincerely,

WADE D. BOTT
State Soil Scientist

cc:
Jon Stika, ARSS, NRCS, Dickinson, ND
Kyle Hartel, DC, NRCS, Watford City, ND

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request May 23, 2014
Name of Project ND 200, Montana State Line to Jct US 85	Federal Agency Involved FHWA
Proposed Land Use Roadway overlay and widening Improvements	County and State McKenzie County, North Dakota
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 6-9-14 / Person Completing Form: STIKA

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☒ NO ☐	Acres Irrigated 0	Average Farm Size 1888
Major Crop(s) WHEAT	Farmable Land In Govt. Jurisdiction Acres: 192999 % 67	Amount of Farmland As Defined in FPPA Acres: 192999 % 67	
Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 6-9-14	

PART III *(To be completed by Federal Agency)* Site A is combined length of project(s) (all 3)	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	0.04			
B. Total Acres To Be Converted Indirectly	0.00			
C. Total Acres In Site	0.04			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0			
B. Total Acres Statewide Important or Local Important Farmland	.04			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	.01			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	14			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	88			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160				
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or local site assessment)*	160				
TOTAL POINTS ***(Total of above 2 lines)***	260				

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐
Reason For Selection:		
Name of Federal agency representative completing this form:		Date:

(See Instructions on reverse side)

Form AD-1006 (03-02)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

WBI ENERGY TRANSMISSION, INC.
2010 Montana Avenue
Glendive, MT 59330
(406) 359-7200
www.wbienergy.com

December 19, 2013

Jay F. Meacham
Civil Science
222 Airport Road
Williston, ND 58801

PROJECT NO. 7-200(014)000, PCN 17861
STATE LINE E TO YELLOWSTONE BRIDGE

7-200(05)003, PCN 20294
BRIDGE REPLACEMENT SEGMENT

7-200(06)004, PCN 20295
YELLOWSTONE BRIDGE TO JCT US 85
MCKENZIE COUNTY

Dear Jay,

Thank you for reaching out to WBI Energy regarding the proposed construction. We appreciate the early notice. WBI Energy does operate two natural gas pipelines in the proposed project area. The Cabin Creek to Williston pipeline crosses the road roughly 1100 feet east of the bridge center. This 12 inch high pressure gas pipeline crosses the river paralleling the railroad bridge and then crosses the road way heading northeast. The second pipeline our 6" Redwing Field to Alexander line that crosses the road about 400 feet east of 145th Ave NW and ND-200 intersection. This pipeline intersects ND-200 running in a southeast direction.

Both pipelines will be affected by the proposed work depending on the type of construction and WBI requests to be updated as more road design details are available, as the pipelines may need to be relocated, updated or modified as needed to facilitate the new road construction.

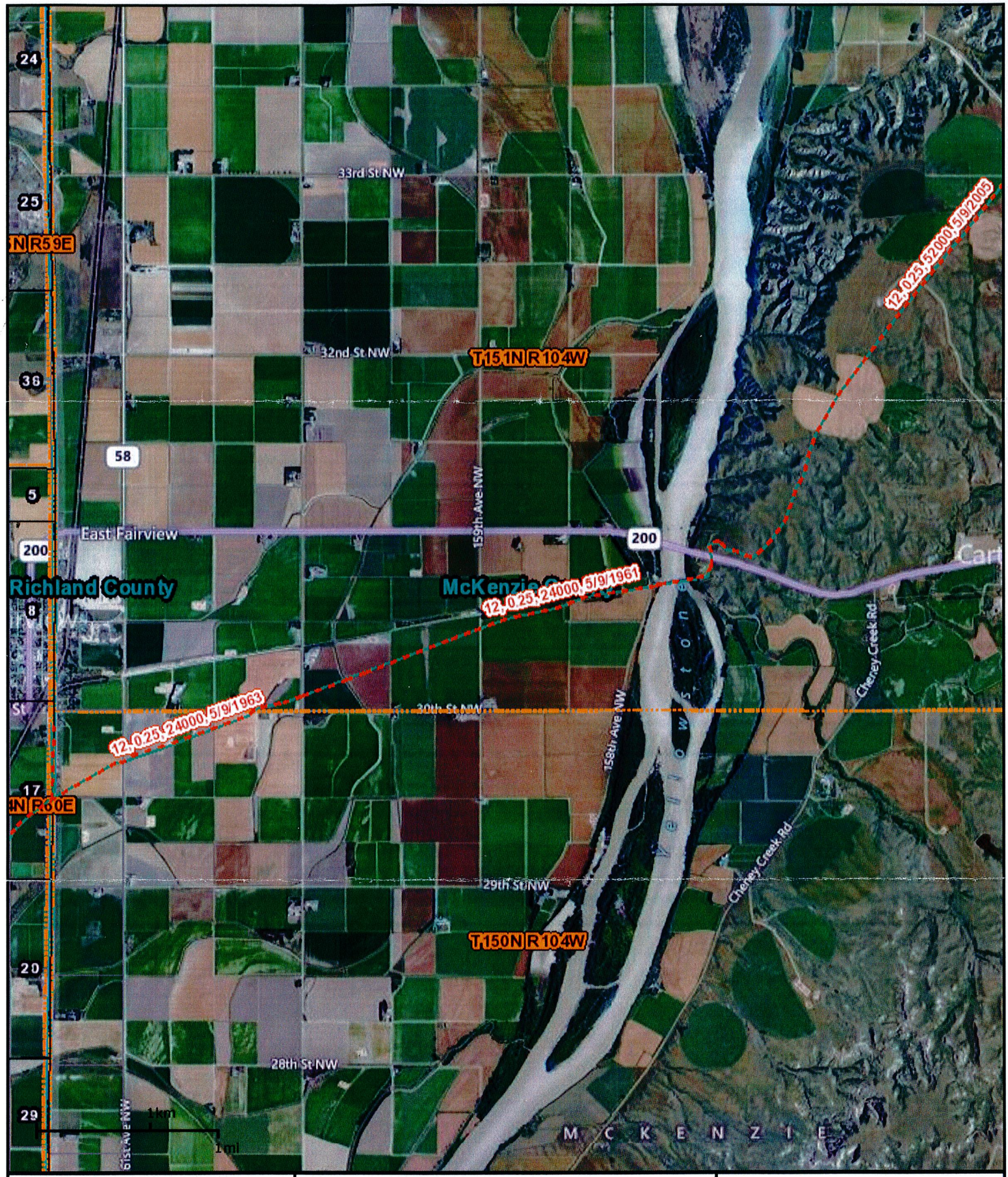
Enclosed are three maps showing the approximate location of our facilities.

Sincerely,

WBI ENERGY TRANSMISSION, INC.

Derek Scott
Staff Engineer

Enclosures



DISCLAIMER: The company makes no representations, warranties or guarantees as to the accuracy and completeness of the enclosed information or data, and is not responsible for any errors or omissions concerning the content and positional accuracy of such information and data.

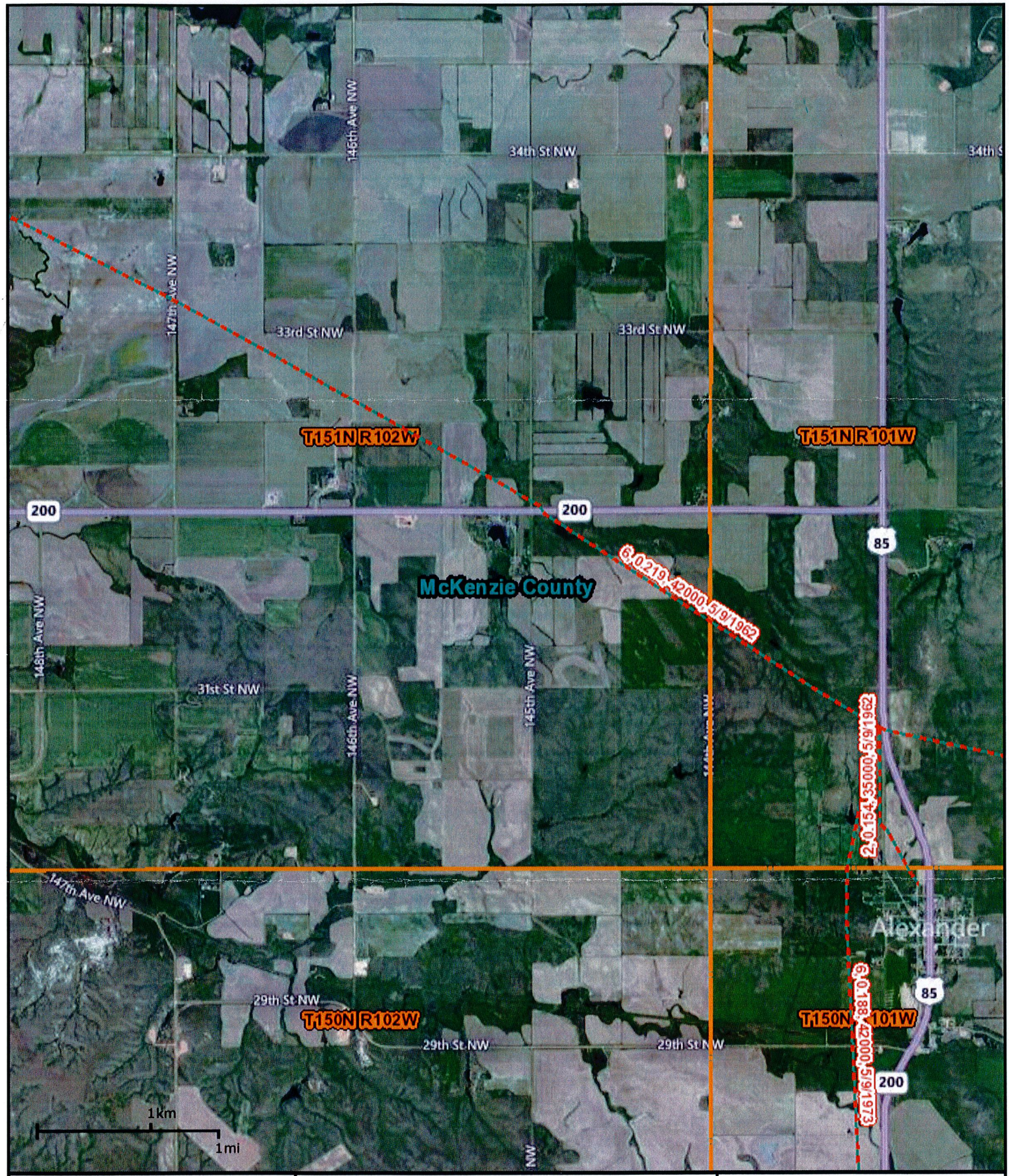
12" high pressure gas pipeline

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Cabin Creek to Williston

Printed: 12/18/2013

Scale: 1 : 44296



DISCLAIMER: The company makes no representations, warranties or guarantees as to the accuracy and completeness of the enclosed information or data, and is not responsible for any errors or omissions concerning the content and positional accuracy of such information and data.

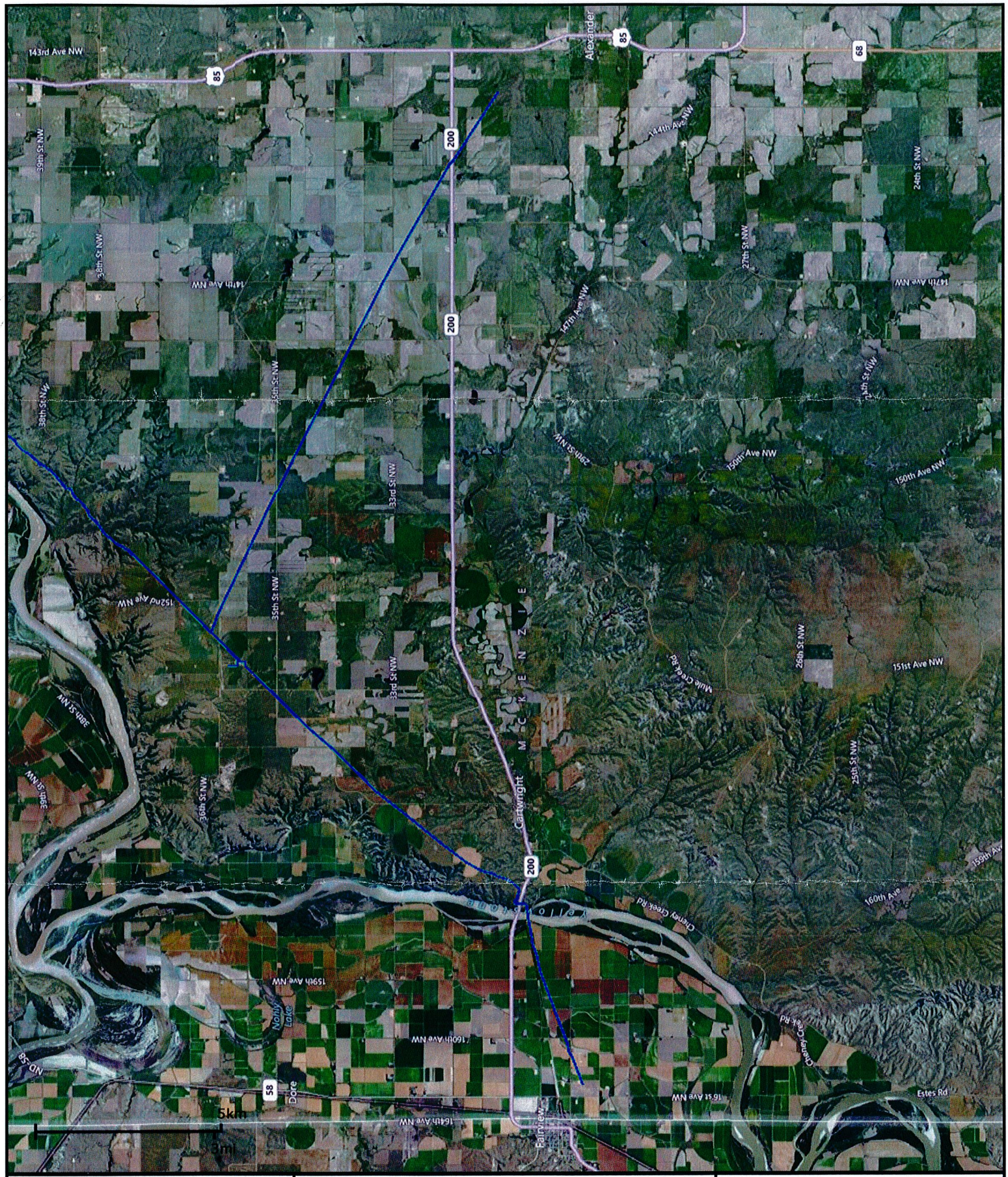
6" high pressure gas pipeline

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Redwing Field to Alexander

Printed: 12/18/2013

Scale: 1 : 44285



DISCLAIMER: The company makes no representations, warranties or guarantees as to the accuracy and completeness of the enclosed information or data, and is not responsible for any errors or omissions concerning the content and positional accuracy of such information and data.

Two pipelines are in the proposed project area, 12" and 6" high pressure lines.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Pipelines in project area

Printed: 12/18/2013

Scale: 1 : 135284

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

March 11, 2014

Ms. Valerie Barbie-Bluemle
Archaeologist, ETS Division
Dept of Transportation
608 East Boulevard Avenue
Bismarck, ND 58505-0700

ND SHPO Ref.: 14-5541 "North Dakota Highway 200, NDDOT 7-200(014)000 PCN 17861, 7-200(015)003 PCN 20294, 7-200(016)004 PCN 20295: A Class III Cultural Resources Inventory in McKenzie County, North Dakota" in portions of [T151N R101W Sections 19 & 30] [T151N R102W Sections 19-30] [T151N R103W Sections 21-31] & [T151N R104W Sections 27-36]

Dear Ms. Bluemle,

We reviewed ND SHPO Ref.: 14-5541 "North Dakota Highway 200, NDDOT 7-200(014)000 PCN 17861, 7-200(015)003 PCN 20294, 7-200(016)004 PCN 20295: A Class III Cultural Resources Inventory in McKenzie County, North Dakota" in portions of [T151N R101W Sections 19 & 30] [T151N R102W Sections 19-30] [T151N R103W Sections 21-31] & [T151N R104W Sections 27-36] and find the report by Duane Klinner acceptable. We concur with the determination of "No Historic Properties Affected" provided that this project takes place in the location and in the manner described in the documentation and that all borrow comes from an approved source.

Thank you for the opportunity to review this project. If you have any questions please contact Lisa Steckler, Preservation Planner at (701) 328-3577, e-mail lsteckler@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer
(North Dakota) and
Director State Historical Society of North Dakota

Jay Meacham

From: Jay Meacham
Sent: Wednesday, June 04, 2014 3:48 PM
To: Jay Meacham
Subject: FW: ND 200 project - FWS interests; cs#13175

From: Gallion, Todd [mailto:todd_gallion@fws.gov]
Sent: Wednesday, June 04, 2014 11:28 AM
To: Jay Meacham
Subject: Re: ND 200 project - FWS interests; cs#13175

Jay,
No FWS interests along HWY 200 between Alexander and Fairview.
Thanks again for calling.

On Wed, Jun 4, 2014 at 11:06 AM, Jay Meacham <jmeacham@civilscience.com> wrote:

Todd,
We just spoke on the phone. The project name and NDDOT project numbers (with PCN) are listed below.
SS-7-200(014)000, PCN 17861 - State Line E to Yellowstone Bridge
SS-7-200(015)003, PCN 20294 – Bridge Replacement Segment
SS-7-200(016)004, PCN 20295 – Yellowstone Bridge to JCT US 85
I have included a location map that may help.
I am just checking to make sure FWS does not have any interests.
Thanks,
Jay

Jay Meacham, PE
Civil Science, Inc.
222 Airport Road | Williston, ND 58801
Office 701.774.8200 x133 | Fax 701.774.8201
Cell 801.367-4257

--
Todd Gallion
Lake Ilo NWR
489 102nd Ave SW
Dunn Center, ND 58626
Email: todd_gallion@fws.gov
Phone: (701) 548-8110
Mobile: (701) 460-0610

Fax: (701) 548-8108

Initial Contact made to:
Cory Richardson
US Fish and Wildlife Service
Lostwood Refuge
Referred to Todd Gallion

Jay Meacham

From: Jay Meacham
Sent: Thursday, January 02, 2014 10:30 AM
To: Jay Meacham
Subject: Phone Conversation RE SOV

Project Name: ND 200
Project Number: 13175.00

Monday, December 30, 2013 – 3:54 pm
Received a voice message from:
Jason Brozen (?)
Lower Yellowstone Electric
406-488-1602
701-609-2111 (cell)

They service a piece of North Dakota from the State Line to the River with a distribution line.
There doesn't appear to be anything in the way (unless widening). All of the distribution lines are on private right-of-way.

Jay Meacham, PE
Civil Science, Inc.
222 Airport Road | Williston, ND 58801
Office 701.774.8200 x133 | Fax 701.774.8201
Cell 801.367-4257

CIVIL SCIENCE
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Appendix B
Endangered Species Affect Determination Table

NDDOT Threatened, Endangered, Proposed, Candidate Species and Critical Habitat Affect Determination Table

Project:	**PCN:**	**Location:**	**County:**
SS-7-200(014)000	17861	State Line E to Yellowstone Bridge	McKenzie
SS-7-200(015)003	20294	Yellowstone Bridge Segment	McKenzie
SS-7-200(016)004	20295	Yellowstrone Bridge to JCT US 85	McKenzie

Species	Listing	Guidance	FHWA Review Required?		Determination		Additional Documentation Included
			Yes	No	Not Present	No Effect	
Interior Least Tern	E	**FHWA Review required** for work in or along the shoreline of the Missouri River System including reservoirs from April 15 through August 1.		X		X	
Whooping Crane	E	**FHWA Review required** for work involving above ground utilities or towers, or new guy wires unless lines are buried.	X			X	X
Black-footed Ferret	E	**FHWA Review required** for ground disturbing activities within 100 feet of prairie dog towns of at least 80 acres in size. Projects within the existing right-of-way will not require FHWA review.		X		X	
Pallid Sturgeon	E	**FHWA Review required** for work in or along the shoreline of the Missouri River (including reservoirs) and Yellowstone River Systems.		X		X	
Gray Wolf	E	**Listed West of US 83; Delisted East of US 83**		X		X	
Poweshiek Skipperling	E	**FHWA Review required** for work occurring outside of the right of way in undisturbed native tall grass prairie and wet swales			X		
Piping Plover	T	**FHWA Review required** for ground disturbing activities within ½ mile of designated piping plover critical habitat or known nesting sites. See link for piping plover designated critical habitat maps: http://www.fws.gov/mountain-prairie/species/birds/pipingplover/		X		X	
Western Prairie Fringed Orchid	T	**FHWA Review required** for all ground disturbing activities on non-flooded, undisturbed ground, known habitat, and native prairie. High probability of species in or near the Sheyenne National Grassland.			X		
Dakota Skipper	T	**FHWA Review required** for work occurring outside of the right of way in high quality native prairie containing a high diversity of wildflowers and grasses.		X		X	
Northern Long-Eared Bat	P	**FHWA Review required** for work involving the removal of trees or buildings, ground disturbance in areas with caves, mines, and rock crevices, or work on structures. See NLEB Guidance for NDDOT Projects for further assistance.	X			X	X
Rufa Red Knot	P	**FHWA Review required** for work activities impacting Piping Plover Critical Habitat or sewage lagoons. See link for piping plover designated critical habitat maps: http://www.fws.gov/mountain-prairie/species/birds/pipingplover/		X		X	
Greater Sage Grouse	C	**FHWA Review Required** for work activities occurring outside the right of way in native sagebrush grasslands where big sagebrush (*Artemisia tridentata*) is present.			X		
Sprague's Pipit	C	**FHWA Review Required** for work activities occurring outside the right of way in large native short-to-mixed grass prairie patches of approximately 72 acres or greater.		X		X	
Piping Plover Critical Habitat	D	**FHWA Review required** for ground disturbing activities within ½ mile of designated piping plover critical habitat or known nesting sites. See link for piping plover designated critical habitat maps: http://www.fws.gov/mountain-prairie/species/birds/pipingplover/		X		X	
Poweshiek Skipperling Critical Habitat	P	**FHWA Review required** for ground disturbing activities within 0.6 mile of proposed Poweshiek Skipperling critical habitat. See link for Poweshiek Skipperling proposed critical habitat maps: https://www.fws.gov/midwest/endangered/insects/posk/poskPropCHMapUnitsND_SD.html			X		
Dakota Skipper Critical Habitat	P	**FHWA Review required** for ground disturbing activities within 0.6 mile of proposed Dakota Skipper critical habitat. See link for Dakota Skipper proposed critical habitat maps: http://www.fws.gov/midwest/endangered/insects/dask/CHmaps/daskNDCHmaps.pdf		X		X	

Listing Key: E – Endangered T – Threatened P – Proposed C – Candidate D – Designated Critical Habitat

January 7, 2015

North Dakota Highway 200 – Stateline East to JCT US 85
FHWA Affect Determination for Northern Long-Eared Bat

Project Number	PCN	Description
SS-7-200(014)000	17861	State Line East to Yellowstone Bridge
SS-7-200(015)003	20294	Yellowstone Bridge Segment
SS-7-200(016)004	20295	Yellowstone Bridge to Jct US 85

County
McKenzie
PCN 17861: T151N, R104W, Sec 31 to T151N, R104W, Sec 27
PCN 20294: T151N. R104W, Sec 34 to T151N, R104W, Sec 35
PCN 20295: TT151N, R104W, Sec 35 to T151N, R101W, Sec 19

The North Dakota Department of Transportation, in cooperation with the Federal Highway Administration, is proposing a roadway improvement on North Dakota Highway 200. Due to the type of work required on the major cross culverts, the effect to the Northern Long-Eared bat requires further review according to the Affect Determination Table. In the summer of 2014, an informal evaluation was conducted on the Whooping Crane for this project, and a No Effect determination for this species was recommended. FHWA concurred with this determination on July 1, 2014 (please see attached email documentation).

The three proposed projects are contiguous and cover highway ND 200 beginning at RP 0.00 on the Montana/North Dakota border near Fairview and extending eastward over the Yellowstone Bridge, through Cartwright and terminates at US Highway 85 (RP 18.68) north of Alexander. The combined length is approximately 18.7 miles.

ND 200 has numerous longitudinal and transverse cracks along with patching and rutting throughout the entire length of all three projects. The roadway within the project segments is expected to undergo increases in truck traffic due to the increase in oil/energy exploration in the vicinity. The proposed improvements are programmed to address the pavement deterioration and extend the lifetime of the pavement structure.

The proposed improvements include overlaying the existing pavement and roadway widening up to a total paved width of 36 feet (including shoulders). Widened areas will consist of fill slopes extending to within the right-of-way line. Some areas may include toes of slopes extending outside the existing right-of-way, however, these right-of-way impacts are expected to be minimal. There will be no impacts to the Yellowstone Bridge as construction work will not extend past the approach slabs. Cross drainage culverts will be extended as necessary to accommodate the widening. A larger footprint area will be necessary at the ND 58/ND 200 intersection where a roundabout is proposed.

It is anticipated that the contractor will use earth moving equipment, grading equipment, bituminous paving equipment, concrete paving equipment, compaction equipment and other equipment incidental to the scope of the project. Work Zone Traffic Control will be implemented with various methods at different locations along the corridor. While the roundabout (JCT ND 58) is under construction, a temporary bypass road will be in place. To construct the south leg of the roundabout a temporary detour will be in effect for a short duration. Between the State line and the roundabout a single lane of traffic will be open requiring flagging and a pilot car. From the roundabout to RP 3.004 a single lane in each direction will be provided with temporary gravel widening and bypasses along the roadside. From RP 3.004 to RP 4.250 a single lane of traffic will be open requiring flagging and a pilot car. From RP 4.250 to JCT US 85 a single lane in each direction will be provided with temporary gravel widening and bypasses along the roadside.

This project(s) are expected to be constructed during the 2015 (PCN 17861 & PCN 220294) and 2016 (PCN 20295) construction seasons.

We revisited the environmental document due to the proposed listing of the Northern Long-Eared Bat (NLEB). The NLEB Guidance for NDDOT Projects flowchart was used to assist in the determination. The project limits includes wooded riparian area along the banks of the Yellowstone River below the bridge; however, since construction activities will end at the approach slabs on either side of the bridge the trees will not be affected. Additionally, the project does not involve construction within three miles of one of the confirmed NLEB sighting areas (Turtle Mountains, Badlands, and Missouri River Valley).

The project includes NDDOT listed structures consisting of the following:

Reference	Project Stationing	Structure	Structure No.
RM 1.278	67+49	10’ X 10’ Concrete Box Culvert	200-001.278
RM 9.644	514+08	12’ Diameter Corrugated Steel Pipe Culvert	200-009.644
RM 10.568	553+37	9’ Diameter Corrugated Steel Pipe Culvert	200-010.568
RM 13.292	697+05	3 – 7’ X 5’ Concrete Box Culvert	200-013.292

A field visit was made to each of the above structures on December 5, 2014 to look for evidence of bat habitat. Evidence of habitat included; cracks or crevices with signs of occupancy, droppings in and around the structure, and dark stains on the walls due to body oils.

The inspection concluded that no evidence existed at any of the structures. Photographs were taken at each of the four locations and have been included.

We do not anticipate any impacts to trees and shrubs providing suitable habitat for the NLEB. Using aerial imagery a survey was conducted of trees along the project corridor. The aerial image and results of the survey have been included. Trees and shrubs along the project corridor were either undersized

(DBH less than 3"), Isolated (further than 1000 feet from forested area), or in the region below the Yellowstone Bridge which will not be affected.

The proposed project will require the removal of a few trees adjacent to the intersection of Highway 58 and Highway 200 (see attached map). Per USFWS Guidance (Northern Long Eared Bat Interim Conference and Planning Guidance - 2014), isolated trees are considered suitable habitat when they exhibit the characteristics of a suitable roost tree (i.e. cracks, crevices, loose bark, etc.), and are less than 1,000 feet from the nearest suitable roost tree. From the proposed tree removal area, the closest potentially suitable roosting trees are located on a residence 1,800 feet to the east. Therefore, the isolated trees to be removed would not be considered suitable roost locations for the Northern Long-Eared Bat.

Based on the projects lack of impact to trees and shrubs providing suitable habitat, distance from confirmed NLEB sighting areas, and the results of the field visit we recommend a "No Effect" determination for the Northern Long-Eared Bat.

Attached is a complete Section 7 Affect Determination Package which includes: this cover letter, NDDOT Threatened, Endangered, Proposed, Candidate Species and Critical Habitat Affect Determination Table; aerial location map; and a previously approved/submitted Section 7 Affect Determination Package with associated FHWA documentation.

SHERI G. LARES

Digitally signed by SHERI G. LARES
DN: c=US, o=U.S. Government, ou=DOT FHWABismarkND, ou=FHWA FHWABismarkND, cn=SHERI G. LARES
Date: 2015.01.07 17:11:03 -06'00'

Federal Highway Administration Representative

NDDOT Threatened, Endangered, Proposed, Candidate Species and Critical Habitat Affect Determination Table

Project:	**PCN:**	**Location:**	**County:**
SS-7-200(014)000	17861	State Line E to Yellowstone Bridge	McKenzie
SS-7-200(015)003	20294	Yellowstone Bridge Segment	McKenzie
SS-7-200(016)004	20295	Yellowstrone Bridge to JCT US 85	McKenzie

Species	Listing	Guidance	FHWA Review Required?		Determination		Additional Documentation Included
			Yes	No	Not Present	No Effect	
Interior Least Tern	E	**FHWA Review required** for work in or along the shoreline of the Missouri River System including reservoirs from April 15 through August 1.		X		X	
Whooping Crane	E	**FHWA Review required** for work involving above ground utilities or towers, or new guy wires unless lines are buried.	X			X	X
Black-footed Ferret	E	**FHWA Review required** for ground disturbing activities within 100 feet of prairie dog towns of at least 80 acres in size. Projects within the existing right-of-way will not require FHWA review.		X		X	
Pallid Sturgeon	E	**FHWA Review required** for work in or along the shoreline of the Missouri River (including reservoirs) and Yellowstone River Systems.		X		X	
Gray Wolf	E	**Listed West of US 83; Delisted East of US 83**		X		X	
Poweshiek Skipperling	E	**FHWA Review required** for work occurring outside of the right of way in undisturbed native tall grass prairie and wet swales			X		
Piping Plover	T	**FHWA Review required** for ground disturbing activities within ½ mile of designated piping plover critical habitat or known nesting sites. See link for piping plover designated critical habitat maps: http://www.fws.gov/mountain-prairie/species/birds/pipingplover/		X		X	
Western Prairie Fringed Orchid	T	**FHWA Review required** for all ground disturbing activities on non-flooded, undisturbed ground, known habitat, and native prairie. High probability of species in or near the Sheyenne National Grassland.			X		
Dakota Skipper	T	**FHWA Review required** for work occurring outside of the right of way in high quality native prairie containing a high diversity of wildflowers and grasses.		X		X	
Northern Long-Eared Bat	P	**FHWA Review required** for work involving the removal of trees or buildings, ground disturbance in areas with caves, mines, and rock crevices, or work on structures. See NLEB Guidance for NDDOT Projects for further assistance.	X			X	X
Rufa Red Knot	P	**FHWA Review required** for work activities impacting Piping Plover Critical Habitat or sewage lagoons. See link for piping plover designated critical habitat maps: http://www.fws.gov/mountain-prairie/species/birds/pipingplover/		X		X	
Greater Sage Grouse	C	**FHWA Review Required** for work activities occurring outside the right of way in native sagebrush grasslands where big sagebrush (*Artemisia tridentata*) is present.			X		
Sprague's Pipit	C	**FHWA Review Required** for work activities occurring outside the right of way in large native short-to-mixed grass prairie patches of approximately 72 acres or greater.		X		X	
Piping Plover Critical Habitat	D	**FHWA Review required** for ground disturbing activities within ½ mile of designated piping plover critical habitat or known nesting sites. See link for piping plover designated critical habitat maps: http://www.fws.gov/mountain-prairie/species/birds/pipingplover/		X		X	
Poweshiek Skipperling Critical Habitat	P	**FHWA Review required** for ground disturbing activities within 0.6 mile of proposed Poweshiek Skipperling critical habitat. See link for Poweshiek Skipperling proposed critical habitat maps: https://www.fws.gov/midwest/endangered/insects/posk/poskPropCHMapUnitsND_SD.html			X		
Dakota Skipper Critical Habitat	P	**FHWA Review required** for ground disturbing activities within 0.6 mile of proposed Dakota Skipper critical habitat. See link for Dakota Skipper proposed critical habitat maps: http://www.fws.gov/midwest/endangered/insects/dask/CHmaps/daskNDCHmaps.pdf		X		X	

Listing Key: E – Endangered T – Threatened P – Proposed C – Candidate D – Designated Critical Habitat

RM 1.278, Station 67+49
10 X 10 Box Culvert – North Side (Outlet)

RM 1.278, Station 67+49
10 X 10 Box Culvert – South Side (Inlet)

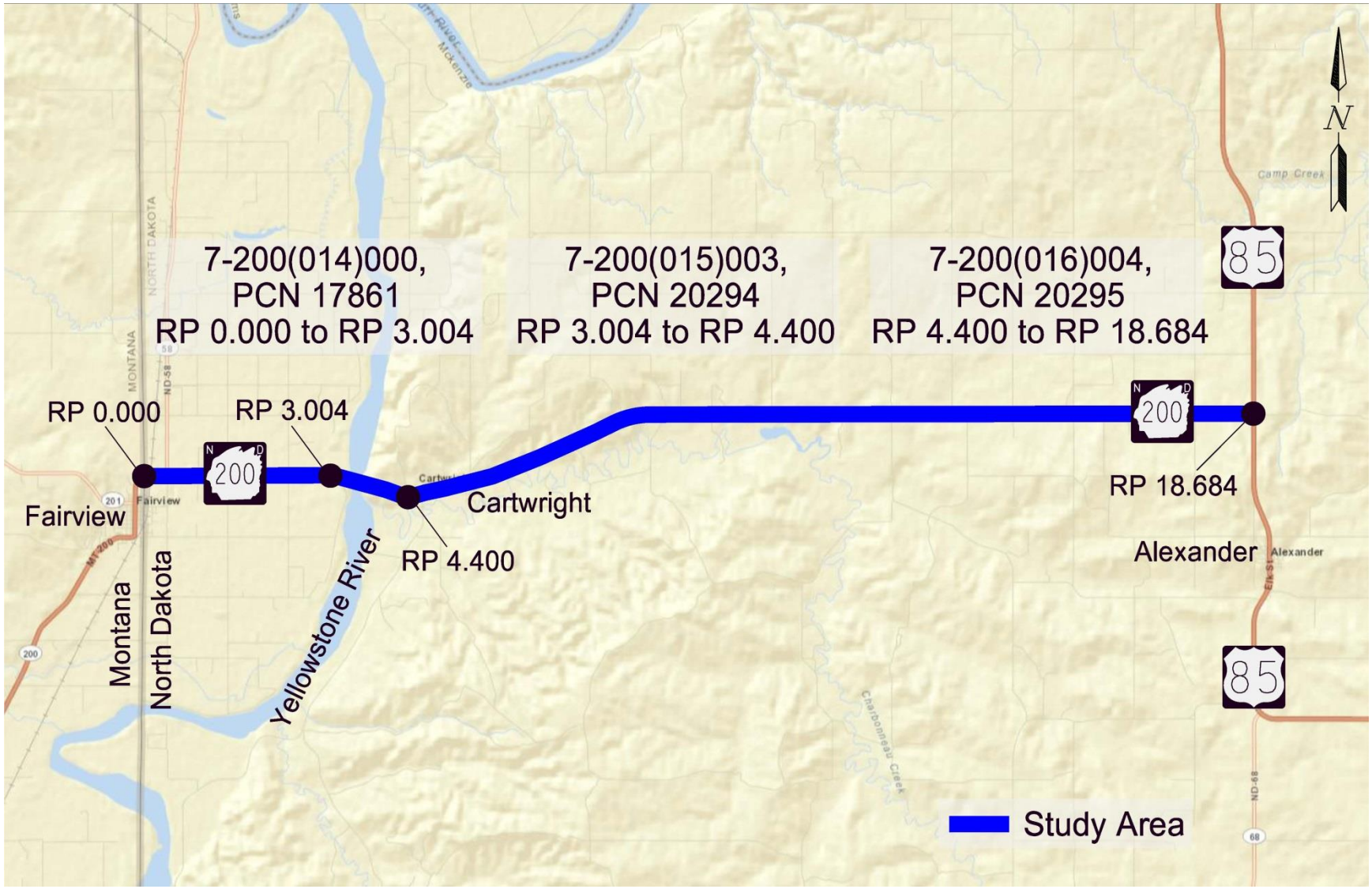
RM 9.644, Station 514+08
12’ Pipe, North side

RM 10+568, Station 553+37
9’ Pipe, Inside

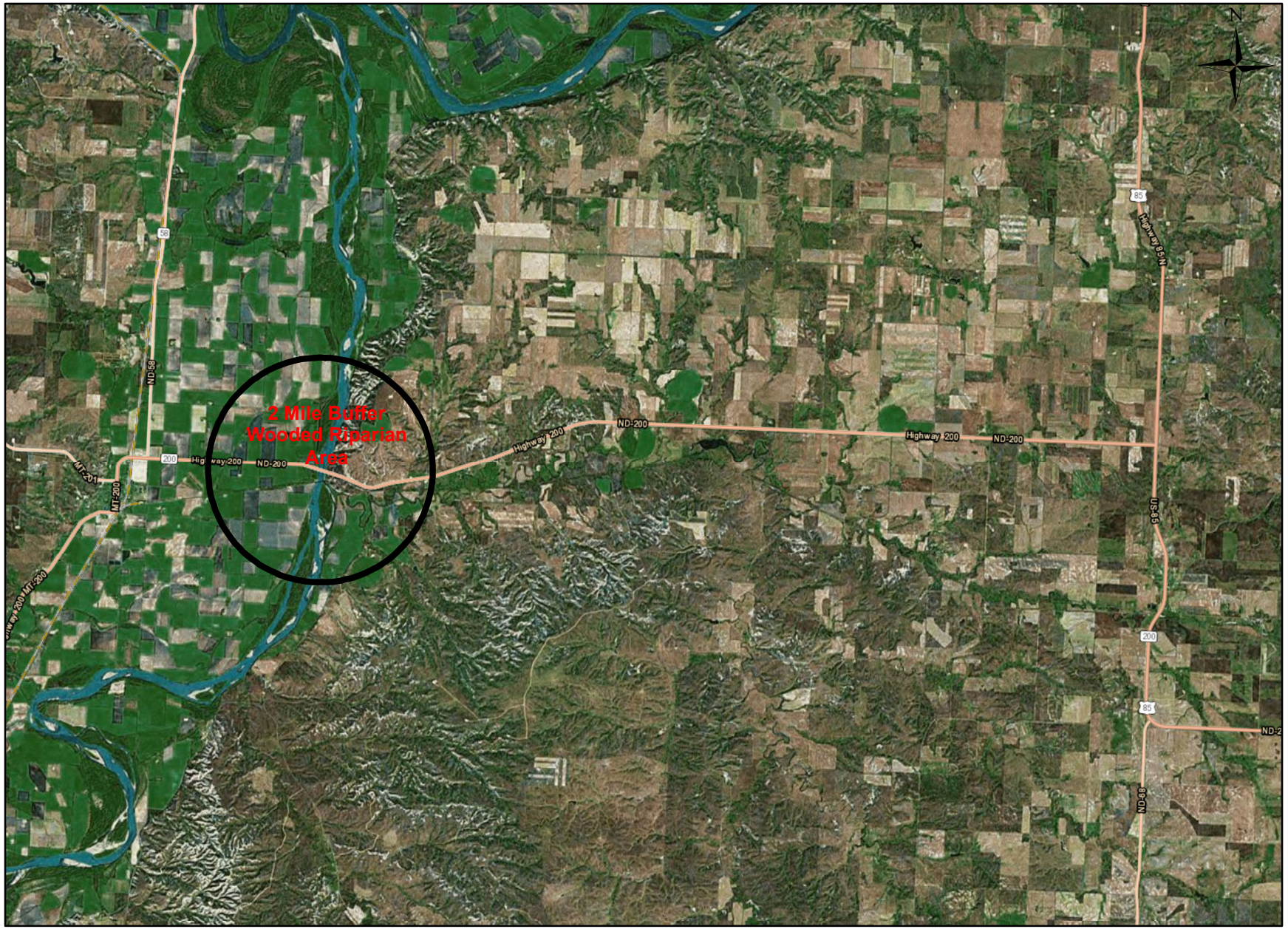
RM 13.292, Station 697+05
3-7 X 5, Box Culvert, North Side (Inlet)

RM 13.292, Station 697+05
3-7 X 5, Box Culvert, South Side (Outlet)

ND 200 Roadway Improvements – Montana / North Dakota State Line East to Jct US 85
SS-7-200(014)000, PCN 17861
SS-7-200(015)003, PCN 20294
SS-7-200(016)004, PCN 20295



Project Location Map



Wooded Riparian Area (2 Mile Radius)

Tree Removal Map

June 12, 2014

North Dakota Highway 200 – State Line East to Jct US 85
FHWA Affect Determination for the Whooping Crane

Project Number	PCN	Description
SS-7-200(014)000	17861	State Line East to Yellowstone Bridge
SS-7-200(015)003	20294	Yellowstone Bridge Segment
SS-7-200(016)004	20295	Yellowstone Bridge to Jct US 85

County
McKenzie
PCN 17861: T151N, R104W, Sec 31 to T151N, R104W, Sec 27
PCN 20294: T151N. R104W, Sec 34 to T151N, R104W, Sec 35
PCN 20295: TT151N, R104W, Sec 35 to T151N, R101W, Sec 19

The three proposed projects are contiguous and cover highway ND 200 beginning at RP 0.00 on the Montana/North Dakota border near Fairview and extending eastward over the Yellowstone Bridge, through Cartwright and terminates at US Highway 85 (RP 18.68) north of Alexander. The combined length is approximately 18.7 miles.

ND 200 has numerous longitudinal and transverse cracks along with patching and rutting throughout the entire length of all three projects. The roadway within the project segments is expected to undergo increases in truck traffic due to the increase in oil/energy exploration in the vicinity. The proposed improvements are programmed to address the pavement deterioration and extend the lifetime of the pavement structure.

The proposed improvements include overlaying the existing pavement and roadway widening up to a total paved width of 36 feet (including shoulders). Widened areas will consist of fill slopes extending to within the right-of-way line. Some areas may include toes of slopes extending outside the existing right-of-way, however, these right-of-way impacts are expected to be minimal. Cross drainage culverts will be extended as necessary to accommodate the widening. A larger footprint area will be necessary at the ND 58/ND 200 intersection where a roundabout is proposed.

This project(s) are expected to be constructed during the 2015 (PCN 17861 & PCN 220294) and 2016 (PCN 20295) construction seasons.

We are currently working on an environmental document for this project. Due to the type of work required (as described above), affects to the Whooping Crane are unknown. Working through the NDDOT Threatened, Endangered, Candidate Species and Critical Habitat Affect Determination Table (attached), this species was identified because of the overhead power lines adjacent to the project. As such, the table requires an FHWA review of the project to determine either “No Effect” or “USFWS Review Required”.

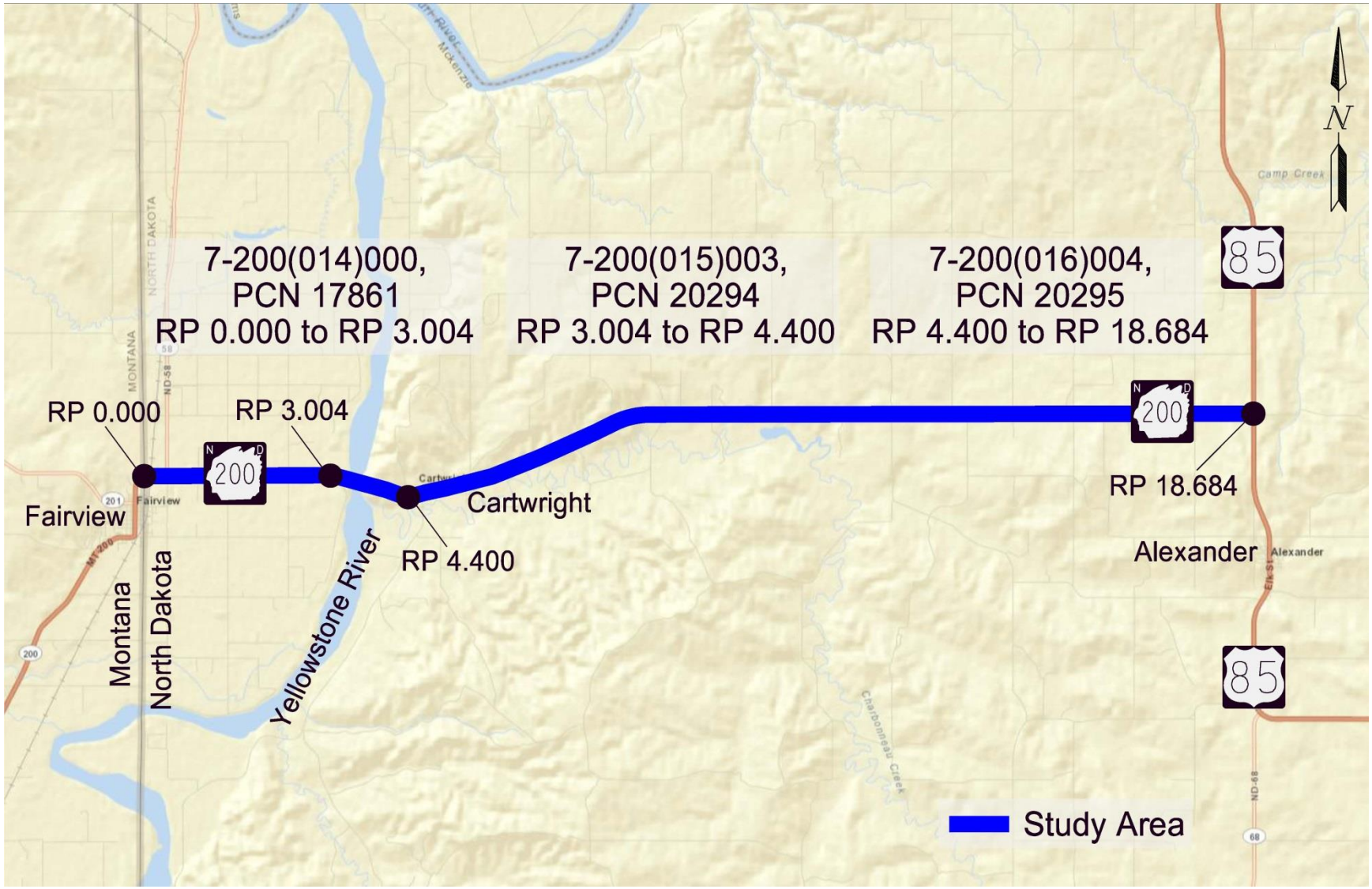
Because the projects are limited to pavement improvements and fill slopes (with no anticipated cuts), impacts to the existing utilities are not anticipated. Overhead power exists along the north and south side of the corridor but with most of the work occurring within the existing right-of-way, no changes to the overhead power are anticipated. Recommended improvements at the intersection of ND 200 and ND 58 include the installation of a roundabout. A figure showing the preliminary layout of the roundabout has been included. The roundabout will not impact the overhead transition lines but will require a modification to the existing signal and lighting system. The existing lighting poles (2) with diagonal wire and hanging flashing light will be removed and replaced with a light pole (with underground power) at each corner.

For reasons discussed above, the anticipated improvements for the projects do not require the relocation/change to overhead power lines or significant changes in the vicinity of the proposed roundabout intersection design. We request a 'no effect' determination for the Whooping Crane.

Attachments:

- Project Location Map
- Roundabout Impacts at the intersection of ND 58 and ND 200
- NDDOT Threatened, Endangered, Candidate Species and Critical Habitat Affect Determination Table

ND 200 Roadway Improvements – Montana / North Dakota State Line East to Jct US 85
SS-7-200(014)000, PCN 17861
SS-7-200(015)003, PCN 20294
SS-7-200(016)004, PCN 20295




SS-7-200(014)000
N
Remove/Replace
Light Pole
Protect in Place
Overhead Power Pole
Paving Work
Install Light Pole
Protect in Place
Overhead Power Pole
Remove/Replace
Light Pole
Install Light Pole
Utility Impacts
Intersection of ND200 & ND58

From: stephanie.hickman@dot.gov [mailto:stephanie.hickman@dot.gov]
Sent: Tuesday, July 01, 2014 7:43 AM
To: Lawson, Cory L.
Cc: Moch, Paul J.; hdand@dot.gov; kevin.brodie@dot.gov
Subject: RE: ND 200 (17861, 20294, 20295) FHWA Sect. 7 determination support

Cory: Based upon the most recent information submitted to us regarding this series of projects, I concur with your determination of "no effect" on the Whooping Crane. Please retain the submitted materials and this email as documentation of the decision.

Stephanie

Stephanie J. Hickman
Planning and Program Development Team Leader
Federal Highway Administration
North Dakota Division
1471 Interstate Loop
Bismarck, ND 58503
701-221-9462 (ph)
701-250-4395 (fax)

Appendix C
Wetland Impact Table

Wetland Impact Table; Project Number SS-7-200(014)000; PCN 17861; State Line East to Yellowstone Bridge; Alternative 1-B; Minor Rehabilitation																
							Wetland Impacts (acres)		USFWS Easement Impacts		Wetland MItigation					
											Mitigation Required					
Wetland Number	Location	Cowardin Class	Wetland Type	Wetland Size Ac.	Wetland Feature	USACE Jurisdictional Wetlands*	Temp. Ac.	Perm. Ac.	Temp.	Perm.	EO 11990	USACE	USFWS	Location; Acreage; Wetland#; Ratio	Onsite Mitigation Acres	
1	S30, T151N, R104W	N/A	Wet meadow	0.76	Artificial	Yes		0.20	N	N	N	Y	N	Onsite 0.20 at WL#1 (1:1);	0.20	
2	S29, T151N, R104W	N/A	Wet meadow	0.07	Artificial	Preamble		0.04	N	N	N	N	N	none		
3	S32, T151N, R104W	N/A	Wet meadow	0.06	Artificial	Preamble		0.03	N	N	N	N	N	none		
4	S29, T151N, R104W	N/A	Wet meadow	0.02	Artificial	Yes			N	N	N	N	N	none		
5	S28, T151N, R104W	N/A	Wet meadow	1.10	Artificial	Yes			N	N	N	N	N	none		
6	S33, T151N, R104W	N/A	Wet meadow	1.47	Artificial	Yes			N	N	N	N	N	none		
7	S34, T151N, R104W	N/A	Wet meadow	0.03	Artificial	Preamble			N	N	N	N	N	none		
			Totals	**3.51**			**0.00**	**0.27**	**0.00**	**0.00**	**0.00**	**0.00**			**0.20**	

**A wetland Jurisdictional Determination was issued by the USACE on 07/09/2014; NOW-2014-0327-BIS. An addendum to the USACE JD determination was issued for WL#18 on 07/29/2014*

***All Impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts of greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation*

****All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by USACE case by case), Preamble Wetlands, and temporary impacts do not require mitigation*

***** Wetland impacts for this aternative based on work option/s with greatest number of permament impacts (Free Right)*

Wetland Impact Table; Project Number SS-7-200(014)000; PCN 17861; State Line East to Yellowstone Bridge; Alternative 1-C, Structural Improvement																
							Wetland Impacts (acres)		USFWS Easement Impacts		Wetland MItigation					
											Mitigation Required			Location; Acreage; Wetland#; Ratio	Onsite Mitigation Acres
Wetland Number	Location	Cowardin Class	Wetland Type	Wetland Size Ac.	Wetland Feature	USACE Jurisdictional Wetlands*	Temp. Ac.	Perm. Ac.	Temp.	Perm.	EO 11990	USACE	USFWS		
1	S30, T151N, R104W	N/A	Wet meadow	0.76	Artificial	Yes		0.20	N	N	N	Y	N	Onsite 0.20 at WL#1 (1:1);	0.20
2	S29, T151N, R104W	N/A	Wet meadow	0.07	Artificial	Preamble		0.04	N	N	N	N	N	none	
3	S32, T151N, R104W	N/A	Wet meadow	0.06	Artificial	Preamble		0.04	N	N	N	N	N	none	
4	S29, T151N, R104W	N/A	Wet meadow	0.02	Artificial	Yes			N	N	N	N	N	none	
5	S28, T151N, R104W	N/A	Wet meadow	1.10	Artificial	Yes		0.10	N	N	N	Y	N	Onsite 0.10 at WL#5 (1:1);	0.10
6	S33, T151N, R104W	N/A	Wet meadow	1.47	Artificial	Yes		0.30	N	N	N	Y	N	Onsite 0.30 at WL#6 (1:1);	0.30
7	S34, T151N, R104W	N/A	Wet meadow	0.03	Artificial	Preamble			N	N	N	N	N	none	
			Totals	**3.51**			**0.00**	**0.68**	**0.00**	**0.00**	**0.00**	**0.00**			**0.60**

**A wetland Jurisdictional Determination was issued by the USACE on 07/09/2014; NOW-2014-0327-BIS. An addendum to the USACE JD determination was issued for WL#18 on 07/29/2014*

***All Impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts of greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation*

****All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by USACE case by case), Preamble Wetlands, and temporary impacts do not require mitigation*

***** Wetland impacts for this aternative based on work option/s with greatest number of permament impacts (Free Right)*

Wetland Impact Table; Project Number SS-7-200(014)000; PCN 17861; State Line East to Yellowstone Bridge; Alternative 1-D, Major Rehabilitation																
							Wetland Impacts (acres)		USFWS Easement Impacts		Wetland MItigation					
											Mitigation Required			Location; Acreage; Wetland#; Ratio	Onsite Mitigation Acres	
Wetland Number	Location	Cowardin Class	Wetland Type	Wetland Size Ac.	Wetland Feature	USACE Jurisdictional Wetlands*	Temp. Ac.	Perm. Ac.	Temp.	Perm.	EO 11990	USACE	USFWS			
1	S30, T151N, R104W	N/A	Wet meadow	0.76	Artificial	Yes		0.20	N	N	N	Y	N	Onsite 0.20 at WL#20 (1:1)	0.20	
2	S29, T151N, R104W	N/A	Wet meadow	0.07	Artificial	Preamble			N	N	N	N	N	none		
3	S32, T151N, R104W	N/A	Wet meadow	0.06	Artificial	Preamble			N	N	N	N	N	none		
4	S29, T151N, R104W	N/A	Wet meadow	0.02	Artificial	Yes			N	N	N	N	N	none		
5	S28, T151N, R104W	N/A	Wet meadow	1.10	Artificial	Yes	0.02	0.47	N	N	N	Y	N	Onsite 0.47 at WL#5 (1:1);	0.47	
6	S33, T151N, R104W	N/A	Wet meadow	1.47	Artificial	Yes	0.10	1.06	N	N	N	Y	N	Onsite 1.06 at WL#6 (1:1);	1.06	
7	S34, T151N, R104W	N/A	Wet meadow	0.03	Artificial	Preamble		0.02	N	N	N	N	N	none		
			Totals	**3.51**			**0.12**	**1.75**	**0.00**	**0.00**	**0.00**	**0.00**			**1.73**	

**A wetland Jurisdictional Determination was issued by the USACE on 07/09/2014; NOW-2014-0327-BIS. An addendum to the USACE JD determination was issued for WL#18 on 07/29/2014*

***All Impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts of greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation*

****All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by USACE case by case), Preamble Wetlands, and temporary impacts do not require mitigation*

***** Wetland impacts for this aternative based on work option/s with greatest number of permament impacts (Free Right)*

Wetland Impact Table; Project Number SS-7-200(015)003; PCN 17861; Bridge Replacement Segment; Alternative 2-B, Structural Improvement																
							Wetland Impacts (acres)		USFWS Easement Impacts		Wetland MItigation					
											Mitigation Required					
Wetland Number	Location	Cowardin Class	Wetland Type	Wetland Size Ac.	Wetland Feature	USACE Jurisdictional Wetlands*	Temp. Ac.	Perm. Ac.	Temp.	Perm.	EO 11990	USACE	USFWS	Location; Acreage; Wetland#; Ratio	Onsite Mitigation Acres	
8	S35, T151N, R104W	PSSA	Wet meadow	2.37	Natural	Yes			N	N	N	N	N	none		
9	S35, T151N, R104W	PSSA	Wet meadow	0.07	Natural	Yes			N	N	N	N	N	none		
10	S35, T151N, R104W	PSSA	Wet meadow	0.37	Natural	Yes			N	N	N	N	N	none		
			Totals	**0.37**			**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**0.00**	

**A wetland Jurisdictional Determination was issued by the USACE on 07/09/2014; NOW-2014-0327-BIS. An addendum to the USACE JD determination was issued for WL#18 on 07/29/2014*

***All Impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts of greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation*

****All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by USACE case by case), Preamble Wetlands, and temporary impacts do not require mitigation*

Wetland Impact Table; Project Number SS-7-200(016)004; PCN 20295; Yellowstone Bridge to JCT US 85; Alternative 3-B; Minor Rehabilitation																
							Wetland Impacts (acres)		USFWS Easement Impacts		Wetland MItigation					
											Mitigation Required			Location; Acreage; Wetland#; Ratio	Onsite Mitigation Acres	
Wetland Number	Location	Cowardin Class	Wetland Type	Wetland Size Ac.	Wetland Feature	USACE Jurisdictional Wetlands*	Temp. Ac.	Perm. Ac.	Temp.	Perm.	EO 11990	USACE	USFWS			
11	S29, T151N, R103W	N/A	Wet meadow	0.01	Artificial	Yes			N	N	N	N	N	none		
12	S29, T151N, R103W	N/A	Wet meadow	0.04	Natural	Yes			N	N	N	N	N	none		
13	S29, T151N, R103W	N/A	Wet meadow	0.09	Natural	Yes			N	N	N	N	N	none		
14	S21, T151N, R103W	N/A	Wet meadow	0.26	Natural	Yes			N	N	N	N	N	none		
15	S30, T151N, R102W	N/A	Wet meadow	0.02	Natural	Yes			N	N	N	N	N	none		
16	S29, T151N, R102W	N/A	Wet meadow	0.04	Natural	Yes			N	N	N	N	N	none		
17	S29, T151N, R102W	N/A	Wet meadow	0.01	Natural	Yes			N	N	N	N	N	none		
18	S23, T151N, R102W	N/A	Wet meadow	0.39	Natural	No			N	N	N	N	N	none		
			Totals	**0.86**			**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			**0.00**	

**A wetland Jurisdictional Determination was issued by the USACE on 07/09/2014; NOW-2014-0327-BIS. An addendum to the USACE JD determination was issued for WL#18 on 07/29/2014*

***All Impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts of greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation*

****All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by USACE case by case), Preamble Wetlands, and temporary impacts do not require mitigation*

Wetland Impact Table; Project Number SS-7-200(016)004; PCN 20295; Yellowstone Bridge to JCT US 85; Alternative 3-C; Structural Improvement																
							Wetland Impacts (acres)		USFWS Easement Impacts		Wetland MItigation					
											Mitigation Required					
Wetland Number	Location	Cowardin Class	Wetland Type	Wetland Size Ac.	Wetland Feature	USACE Jurisdictional Wetlands*	Temp. Ac.	Perm. Ac.	Temp.	Perm.	EO 11990	USACE	USFWS	Location; Acreage; Wetland#; Ratio	Onsite Mitigation Acres	
11	S29, T151N, R103W	N/A	Wet meadow	0.01	Artificial	Yes			N	N	N	N	N	none		
12	S29, T151N, R103W	N/A	Wet meadow	0.04	Natural	Yes			N	N	N	N	N	none		
13	S29, T151N, R103W	N/A	Wet meadow	0.09	Natural	Yes			N	N	N	N	N	none		
14	S21, T151N, R103W	N/A	Wet meadow	0.26	Natural	Yes			N	N	N	N	N	none		
15	S30, T151N, R102W	N/A	Wet meadow	0.02	Natural	Yes			N	N	N	N	N	none		
16	S29, T151N, R102W	N/A	Wet meadow	0.04	Natural	Yes			N	N	N	N	N	none		
17	S29, T151N, R102W	N/A	Wet meadow	0.01	Natural	Yes		0.01	N	N	Y	N	N	Vollrath 16/17 1190 NDDOT Mitigation Bank 0.01 (1:1)	0.01	
18	S23, T151N, R102W	N/A	Wet meadow	0.39	Natural	No			N	N	N	N	N	none		
			Totals	**0.86**			**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**			**0.01**	

**A wetland Jurisdictional Determination was issued by the USACE on 07/09/2014; NOW-2014-0327-BIS. An addendum to the USACE JD determination was issued for WL#18 on 07/29/2014*

***All Impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts of greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation*

****All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by USACE case by case), Preamble Wetlands, and temporary impacts do not require mitigation*

Wetland Impact Table; Project Number SS-7-200(016)004; PCN 20295; Yellowstone Bridge to JCT US 85; Alternative 3-D; Major Rehabilitation																
							Wetland Impacts (acres)		USFWS Easement Impacts		Wetland MItigation					
											Mitigation Required					
Wetland Number	Location	Cowardin Class	Wetland Type	Wetland Size Ac.	Wetland Feature	USACE Jurisdictional Wetlands*	Temp. Ac.	Perm. Ac.	Temp.	Perm.	EO 11990	USACE	USFWS	Location; Acreage; Wetland#; Ratio	Onsite Mitigation Acres	
11	S29, T151N, R103W	N/A	Wet meadow	0.01	Artificial	Yes		0.01	N	N	N	N	N	none		
12	S29, T151N, R103W	N/A	Wet meadow	0.04	Natural	Yes			N	N	N	N	N	none		
13	S29, T151N, R103W	N/A	Wet meadow	0.09	Natural	Yes			N	N	N	N	N	none		
14	S21, T151N, R103W	N/A	Wet meadow	0.26	Natural	Yes			N	N	N	N	N	none		
15	S30, T151N, R102W	N/A	Wet meadow	0.02	Natural	Yes			N	N	N	N	N	none		
16	S29, T151N, R102W	N/A	Wet meadow	0.04	Natural	Yes			N	N	N	N	N	none		
17	S29, T151N, R102W	N/A	Wet meadow	0.01	Natural	Yes		0.01	N	N	Y	N	N	Vollrath 16/17 1190 NDDOT Mitigation Bank 0.01 (1:1)	0.01	
18	S23, T151N, R102W	N/A	Wet meadow	0.39	Natural	No			N	N	N	N	N	none		
			Totals	**0.86**			**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**			**0.01**	

**A wetland Jurisdictional Determination was issued by the USACE on 07/09/2014; NOW-2014-0327-BIS. An addendum to the USACE JD determination was issued for WL#18 on 07/29/2014*

***All Impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts of greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation*

****All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by USACE case by case), Preamble Wetlands, and temporary impacts do not require mitigation*

ENVIRONMENTAL COMMITMENTS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SOIB-7-200(014)000	6	6
ND	SOIB-7-200(015)003		

Other Waters Impact Table

Other Waters											Other Water Mitigation				
			Size				Impacts to Other Waters				Mitigation Required				
							Acres		Linear Feet						
Number	Location	Type	Acres	Linear Feet	Feature	USACE Jurisdictional*	Temp	Perm	Temp	Perm	EO 11990	USACE	USFWS	Location	Method
OW1	Sec.29, T151N, R104W	Drain	0.01	123	Artificial	Preamble	0.00	0.01	0	40	N	N	N	---	---
OW2	Sec. 29, T151N, R104W	Drain	0.02	159	Artificial	Yes	0.00	0.02	0	60	N	N	N	---	---
OW3	Sec.33, T151N, R104W	Drain	0.02	146	Artificial	Yes	0.00	0.01	0	80	N	N	N	---	---
OW4	Sec.33, T151N, R104W	Drain	0.02	130	Artificial	Yes	0.00	0.02	0	65	N	N	N	---	---
OW5	Sec.33, T151N, R104W	Drain	0.06	321	Artificial	Preamble	0.00	0.06	0	321	N	N	N	---	---
OW6	Sec.33, T151N, R104W	Drain	0.02	147	Artificial	Preamble	0.00	0.02	0	80	N	N	N	---	---
OW7	Sec.34, T151N, R104W	Drain	0.01	299	Artificial	Yes	0.00	0.00	0	0	N	N	N	---	---
OW8	Sec.35, T151N, R104W	River	13.55	815	Natural	Yes	0.00	0.00	0	0	N	N	N	---	---
OW9	Sec.35, T151N, R104W	River Bank	0.58	944	Natural	Yes	0.00	0.00	0	0	N	N	N	---	---
		Totals	14.29	3,084			0.00	0.14	0	646					

* A wetland Jurisdictional Determination was issued by the USACE on 7/09/2014; NWO-2014-0327-BIS.

Summary Impact Table

Total Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	Total (Acres)	Wetland Type	Total (Acres/Lf)
Natural/JD	0.00	Temporary JD	0.49
Natural/Non-JD	0.00	Non-JD Temporary	0.07
Artificial/JD	1.15	Permanent JD > 0.10	0.00
Artificial /Non-JD	0.08	Permanent OW	0.14/620
Total	1.23	Temporary OW	0.00/0.26

Compensation Requirements by Agency and Water Type

Water Type	USACE Mitigation	EO 11990 Mitigation
Natural/JD Wetland	> 0.1 acre	All
Natural/Non-JD Wetland	No mitigation required	All
Artificial/JD Wetland	> 0.1 acre	No mitigation required
Artificial/Non-JD Wetland	No mitigation required	No mitigation required
Deep Water (> than 6.6 feet)	No mitigation required	No mitigation required
Other Water	> 300 linear feet	No mitigation required
Preamble	No mitigation required	No mitigation required

June 16, 2014

Conceptual Mitigation Plan

For Affected Wetlands

North Dakota Highway 200 – State Line East to Jct US 85

Project Number	**PCN**	**Description**
SS-7-200(014)000	17861	State Line East to Yellowstone Bridge
SS-7-200(015)003	20294	Yellowstone Bridge Replacement Segment
SS-7-200(016)004	20295	Yellowstone Bridge to Jct US 85

County

McKenzie

PCN 17861: T151N, R104W, Sec 31 to T151N, R104W, Sec 27

PCN 20294: T151N, R104W, Sec 34 to T151N, R104W, Sec 35

PCN 20295: T151N, R104W, Sec 35 to T151N, R101W, Sec 19

The three proposed roadway improvement projects are contiguous and cover Highway ND 200 beginning at RP 0.00 on the Montana/North Dakota border near Fairview and extending eastward over the Yellowstone Bridge through Cartwright and terminates at US Highway 85 (RP 18.68) north of Alexander. The combined length is approximately 18.7 miles. The purposed roadway improvements are programmed to address pavement deterioration to extend the lifetime of the pavement and include shoulder widening with slope flattening (where below standard).

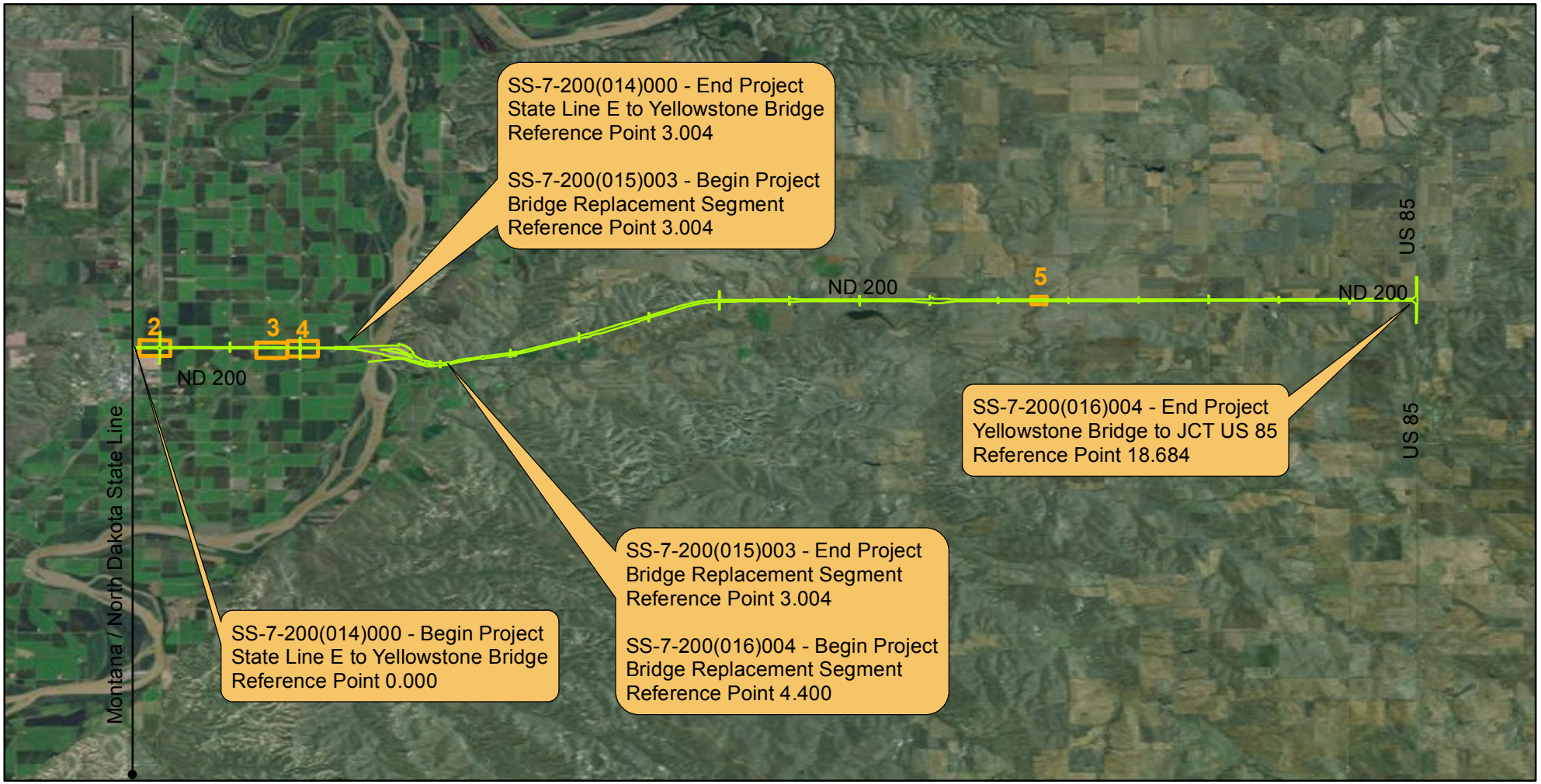
It is anticipated that the proposed roadway improvement projects could result in up to 1.22 acres of unavoidable and permanent wetland impacts. Because the affected wetlands will be mitigated onsite and in close proximity a 1:1 mitigation ratio has been used. Table 1 (Wetland Impact Table) summarizes the potentially affected wetlands and preliminary plans for their mitigation. Exhibit 1 shows the locations of defined existing wetlands. Exhibit 2 shows the location of potential mitigation sites. The following table summarizes the values from the table and the exhibits.

	Potential Impacted Wetland		**Potential Mitigation Area Available**	
Wetland No.	**Location**	**Area (acres)**	**Location**	**Area (acres)**
1	RP 0.25 (North)	0.20	RP 0.08 (North)	0.20
5 & 6	RP 2.25 (North/ South)	0.39(N) / 0.62(S)	RP 2.50 (North/South)	0.63(N) / 0.76(S)
17	RP 13.25 (South)	0.01	RP 2.50	0.02

The potential impacted wetland for No. 17 is small and considers mitigation at a higher ratio at location RP 2.50 (Wetland No. 5 or 6).

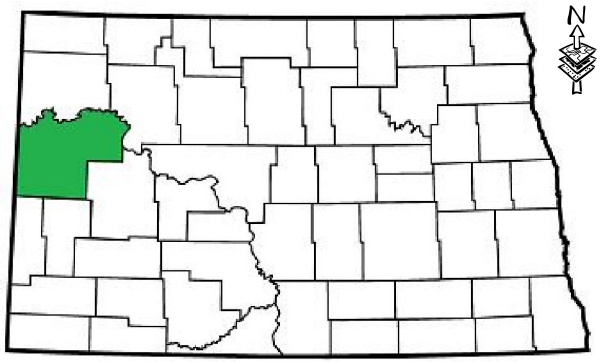
The objective is to extend existing wetlands into upland areas and establish seasonal palustrine emergent wetlands containing a prevalence of hydrophytic vegetation. This will be accomplished using standard wetland mitigation techniques with best management practices. The locations for mitigation were chosen based on their ability to provide sufficient water, potential for successful mitigation, and proximity to the existing wetlands that might be affected.

Table 1. Wetland Impact Table															
							Wetland Impacts (acres)		USFWS Easement Impacts		Wetland Mitigation				
											Mitigation Required			Location; Acreage; Wetland#; Ratio	Onsite Mitigation Acres
Wetland Number	Location	Cowardin Class.	Wetland Type	Wetland Size Ac.	Wetland Feature	USACE Jurisdictional Wetlands*	Temp. Ac.	Perm. Ac.	Temp.	Perm.	EO 11990	USACE	USFWS		
1	S30, T151N, R104W	N/A	Wet meadow	1.69	Artificial	Yes	0.00	0.20	N	N	N	Y	N	Onsite 0.20 at WL#1 (1:1);	0.20
5	S28, T151N, R104W	N/A	Wet meadow	2.44	Artificial	Yes	0.02	0.47	N	N	N	Y	N	Onsite 0.47 at WL#5 (1:1);	0.47
6	S33, T151N, R104W	N/A	Wet meadow	3.27	Artificial	Yes	0.10	1.06	N	N	N	Y	N	Onsite 1.06 at WL#6 (1:1)	1.06
17	S29, T151N, R102W	N/A	Wet meadow	0.03	Natural	Yes	---	0.01	N	N	Y	N	N	Volrath 16/17 11990 NDDOT Mitigation Bank 0.01 (1:1)	0.01



Orthophoto Source: National Geographic World Map
Photo's From: 2009
Accessed: June 16, 2014

0 5,500 11,000 22,000 33,000 44,000 Feet



Legend

Spot Locations with Potentially Impacted Wetlands

Right of Way

Exhibit 1
Potentially Impacted Wetlands

Drawn By:	Date:	Project ID:	PCN:	Sheet:
MAB	06/16/2014	SS-7-200(014)000	17861	1 of 5
		SS-7-200(015)003	20294	
		SS-7-200(016)004	20295	

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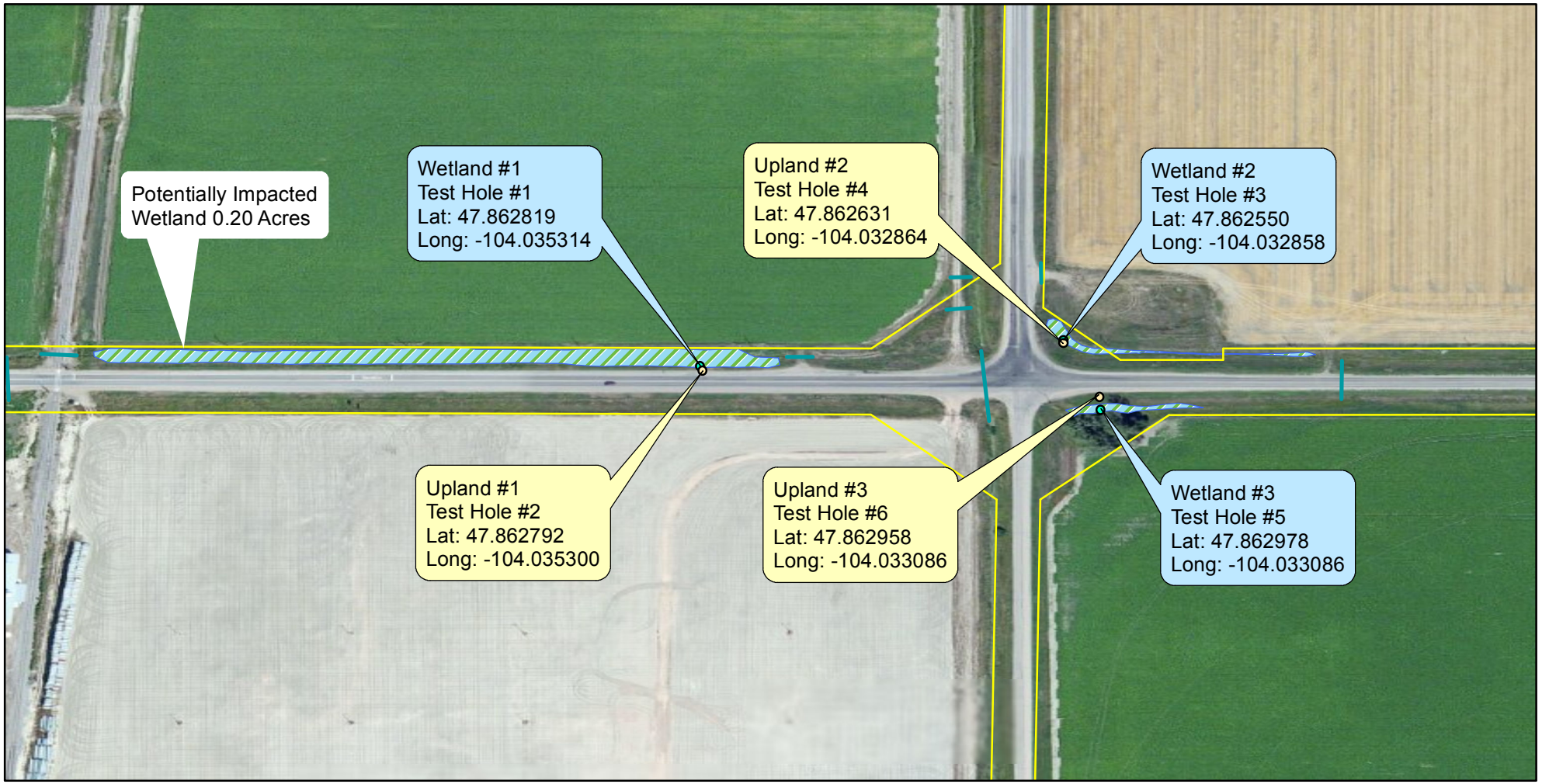
North Dakota
Department of Transportation



Orthophoto Source: National Geographic World Map
Photo's From 2009
Accessed June 16, 2014

0 112.5 225 450 675 900 Feet

Legend

- Other Water
- Upland
- Wetland
- Culvert
- Right of Way
- Delineated Wetlands

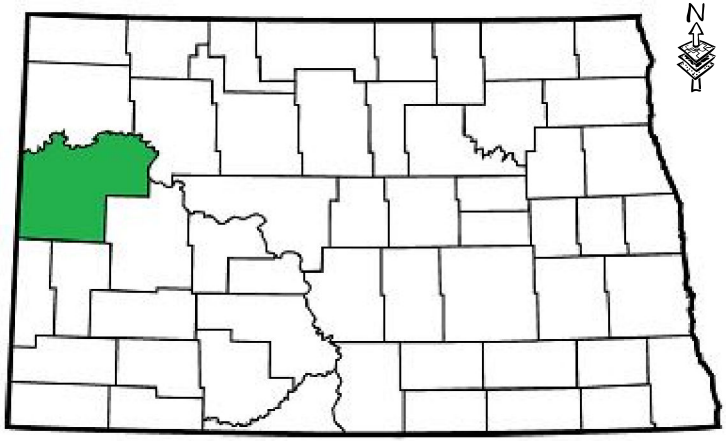


Exhibit 1
Potentially Impacted Wetlands

Drawn By:	Date:	Project ID:	PCN:	Sheet:
MAB	06/16/2014	SS-7-200(014)000	17861	2 of 5
		SS-7-200(015)003	20294	
		SS-7-200(016)004	20295	

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North Dakota
Department of Transportation

Orthophoto Source: National Geographic World Map
Photo's From 2009
Accessed June 16, 2014

0 112.5 225 450 675 900 Feet

Legend

- Other Water
- Upland
- Wetland
- Culvert
- Right of Way
- Potential Wetland Mitigation Sites
- Delineated Wetlands

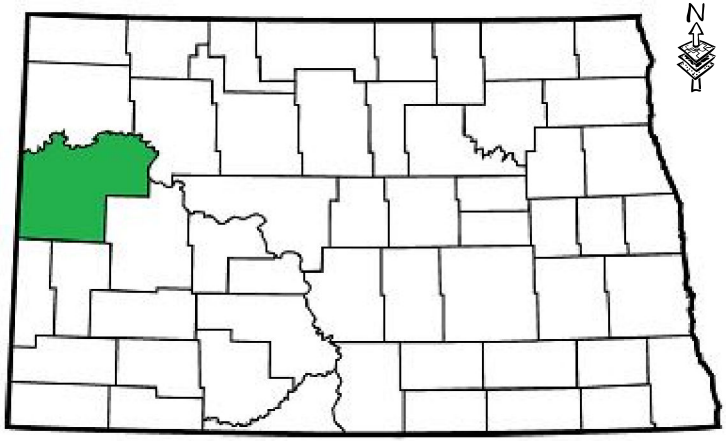

Exhibit 1
Potentially Impacted Wetlands

Drawn By:	Date:	Project ID:	PCN:	Sheet:
MAB	06/16/2014	SS-7-200(014)000	17861	3 of 5
		SS-7-200(015)003	20294	
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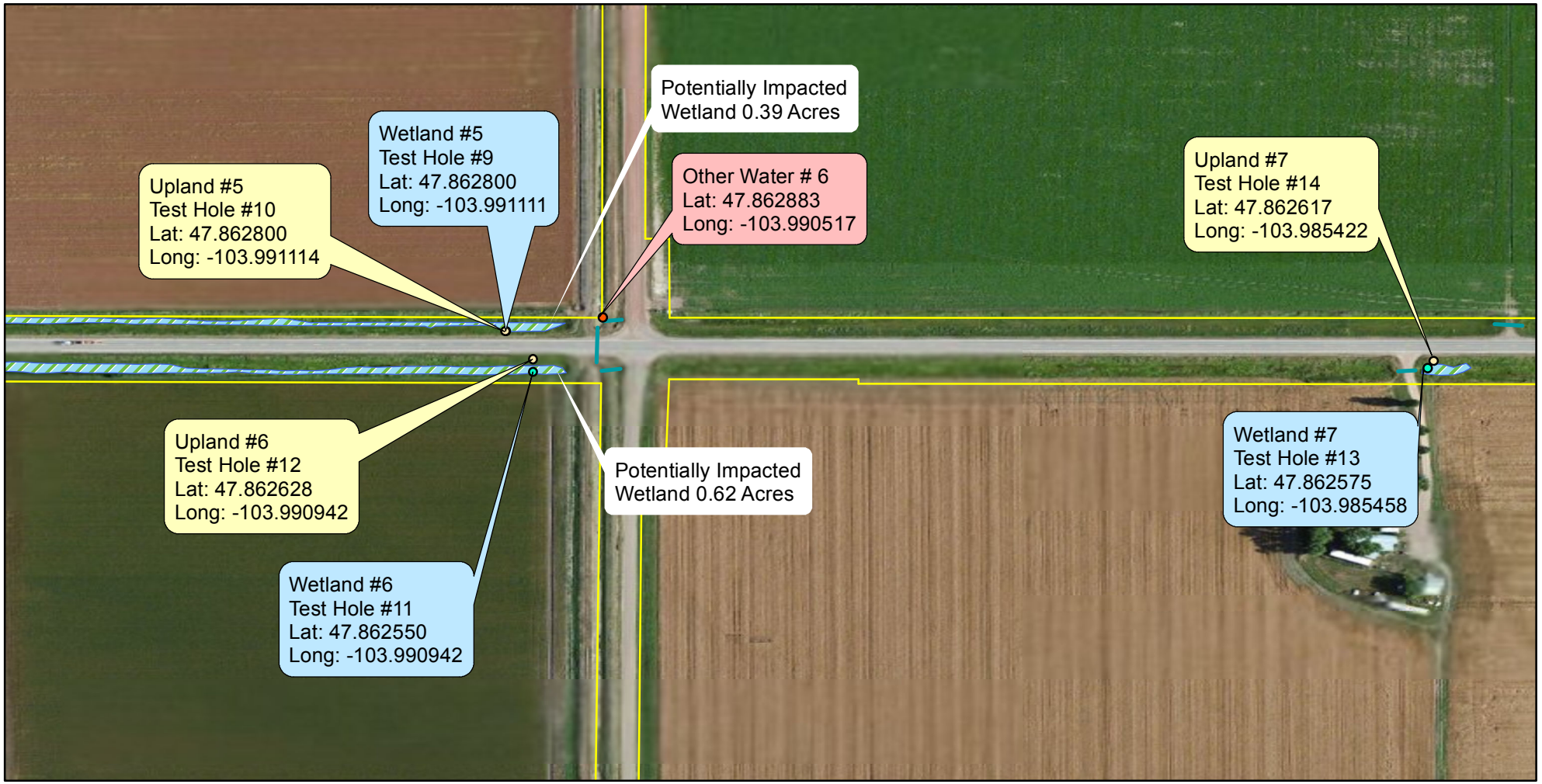
Department of Transportation



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Photo's From 2009
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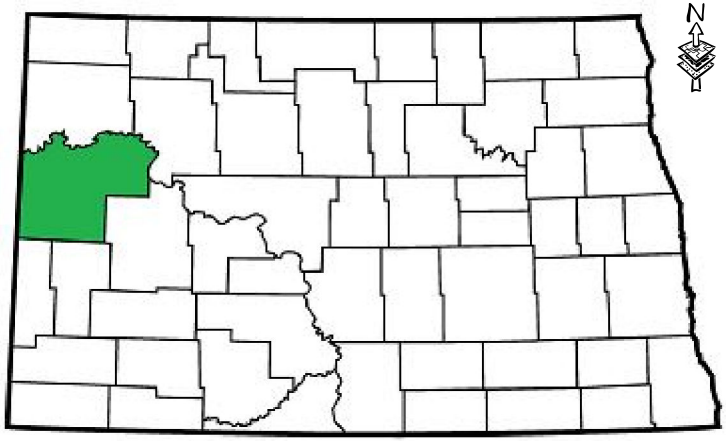

Exhibit 1
Potentially Impacted Wetlands

Drawn By:	Date:	Project ID:	PCN:	Sheet:
MAB	06/16/2014	SS-7-200(014)000	17861	4 of 5
		SS-7-200(015)003	20294	
		SS-7-200(016)004	20295	

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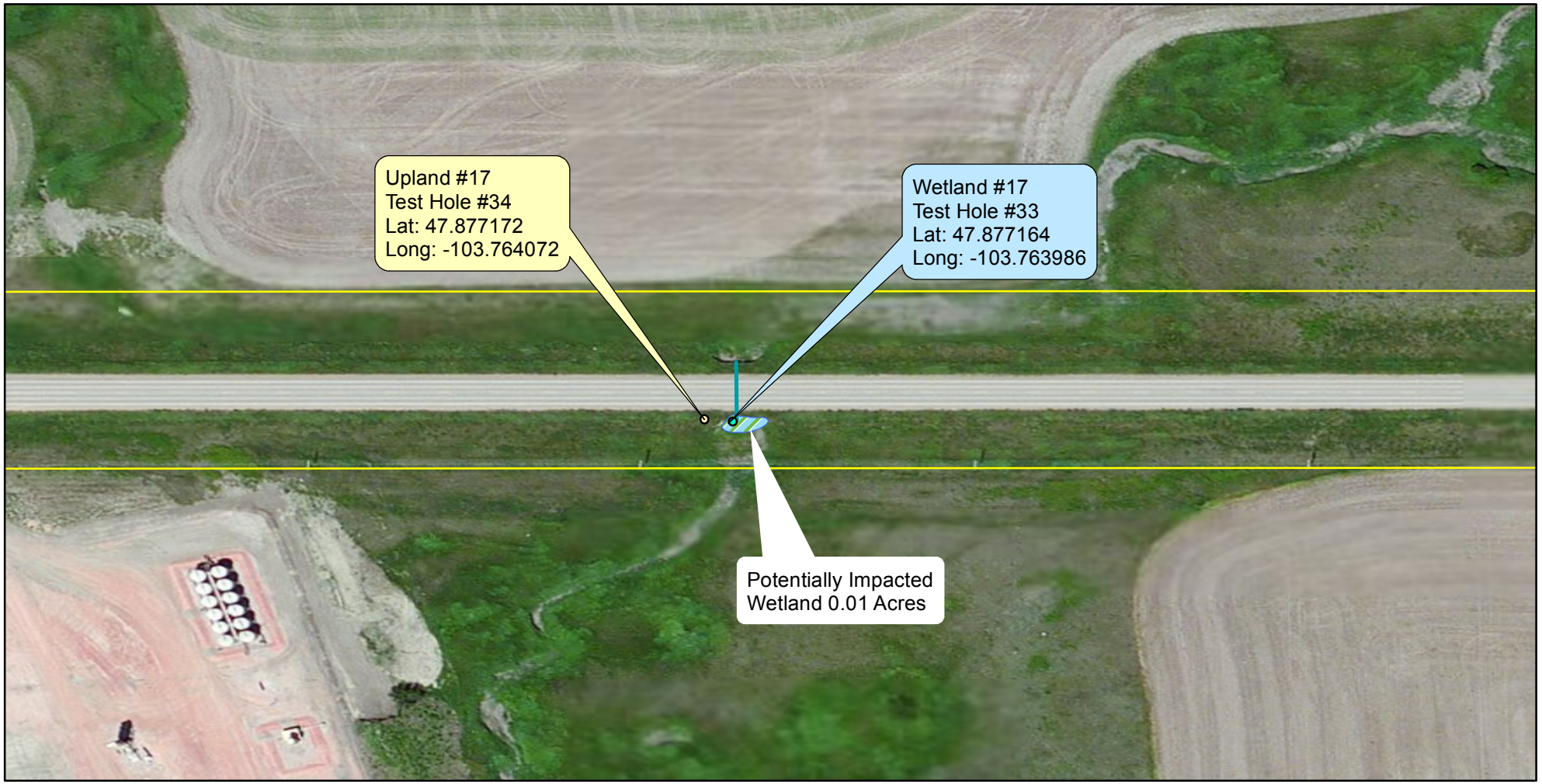
Department of Transportation



Orthophoto Source: National Geographic World Map
Photo's From 2009
Accessed June 16, 2014

0 55 110 220 330 440 Feet

Legend

- Other Water
- Upland
- Wetland
- Culvert
- Right of Way
- Delineated Wetlands

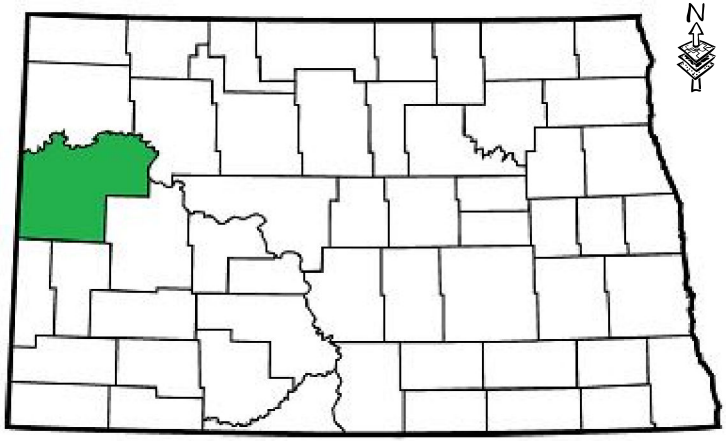


Exhibit 1
Potentially Impacted Wetlands

Drawn By:	Date:	Project ID:	PCN:	Sheet:
MAB	06/16/2014	SS-7-200(014)000	17861	5 of 5
		SS-7-200(015)003	20294	
		SS-7-200(016)004	20295	

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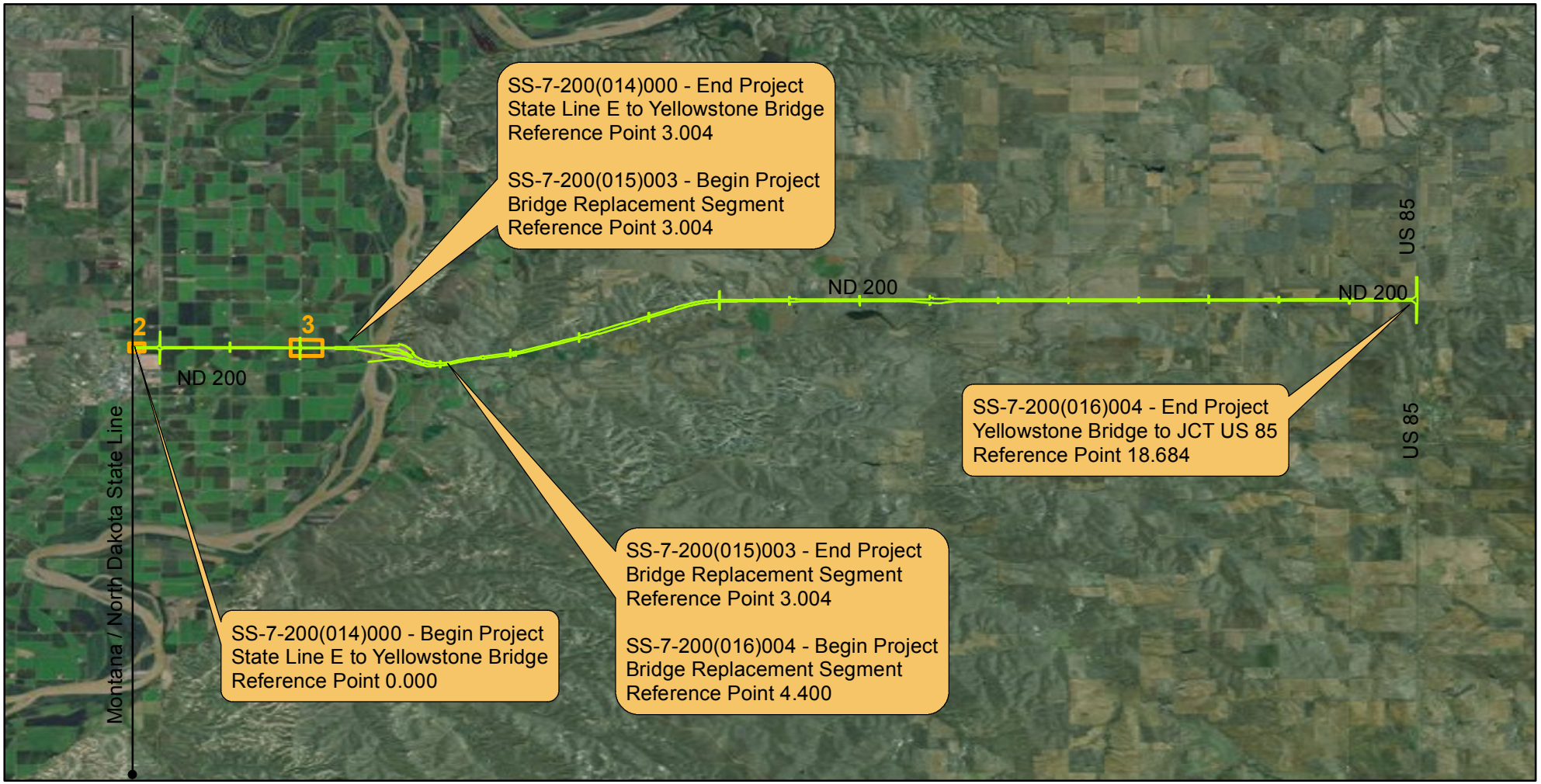
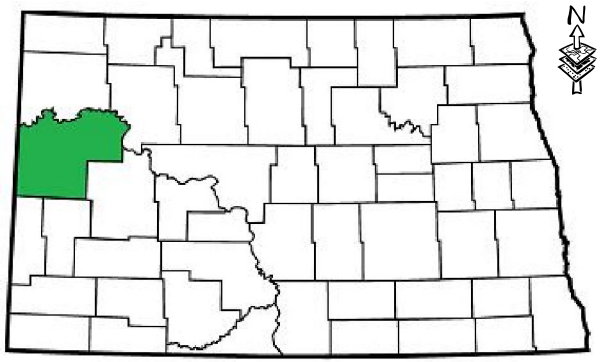


Orthophoto Source: National Geographic World Map
Photo's From: 2009
Accessed: June 19, 2014

0 5,500 11,000 22,000 33,000 44,000 Feet



Legend

Spot Locations with Potential Wetland Mitigation Sites

Right of Way

Exhibit 2

Potential Wetland Mitigation Sites

Drawn By:	Date:	Project ID:	PCN:	Sheet:
MAB	06/16/2014	SS-7-200(014)000	17861	1 of 3
		SS-7-200(015)003	20294	
		SS-7-200(016)004	20295	

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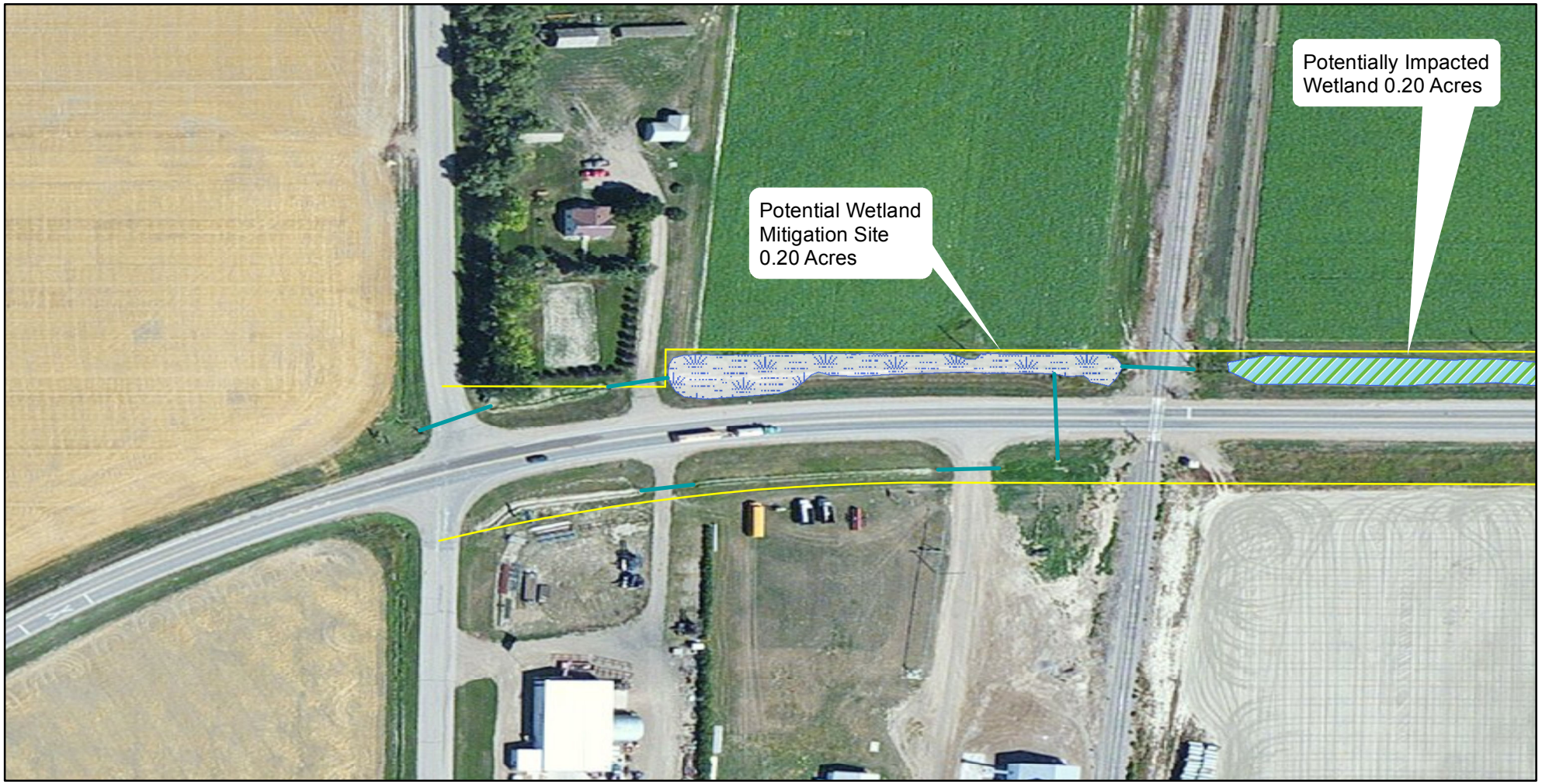

Orthophoto Source: National Geographic World Map
Photo's From 2009
Accessed June 19, 2014

0 55 110 220 330 440 Feet

Legend

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- Wetland
- Culvert
- Right of Way
- Potential Wetland Mitigation Sites
- Delineated Wetlands

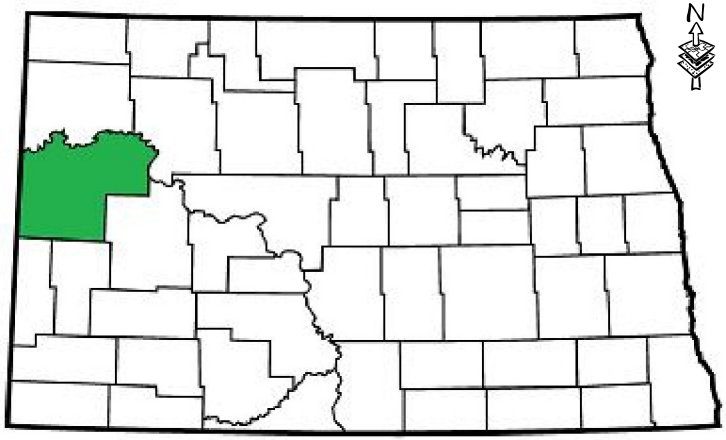

Exhibit 2
Potential Wetland Mitigation Sites

Drawn By:	Date:	Project ID:	PCN:	Sheet:
MAB	06/19/2014	SS-7-200(014)000	17861	2 of 3
		SS-7-200(015)003	20294	
		SS-7-200(016)004	20295	

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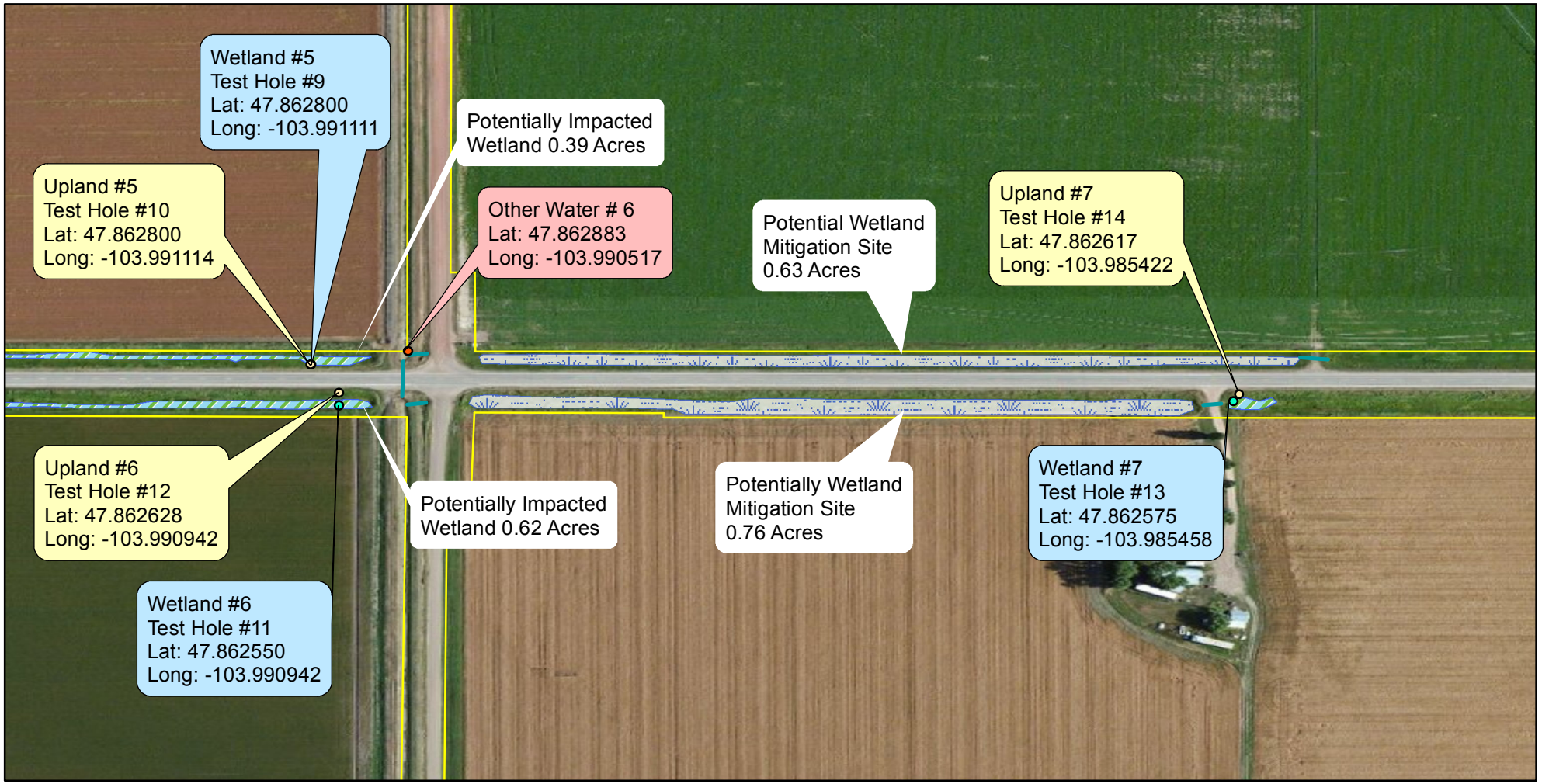
North Dakota
Department of Transportation



Orthophoto Source: National Geographic World Map
Photo's From 2009
Accessed June 19, 2014

0 112.5 225 450 675 900 Feet

Legend

- Other Water
- Upland
- Wetland
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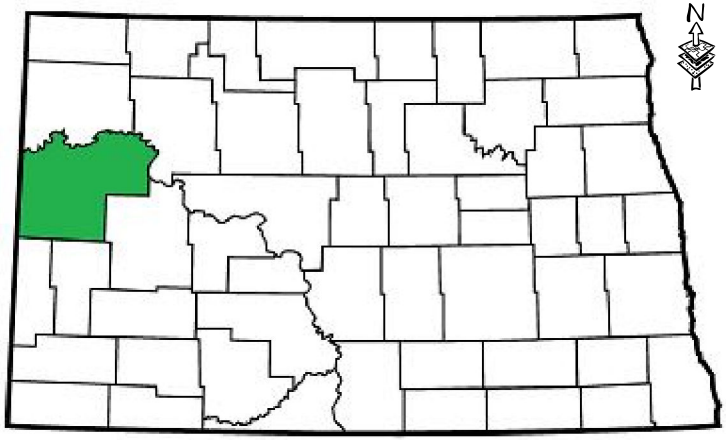

Exhibit 2
Potential Wetland Mitigation Sites

Drawn By:	Date:	Project ID:	PCN:	Sheet:
MAB	06/19/2014	SS-7-200(014)000	17861	3 of 3
		SS-7-200(015)003	20294	
		SS-7-200(016)004	20295	

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Department of Transportation

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

July 29, 2014

SH

North Dakota Regulatory Office

[NWO-2014-0327-BIS]
Hammond/255-0015

Ms. Cassandra Torstenson
North Dakota Department of Transportation
608 East Boulevard Avenue
Bismarck, North Dakota 58505-0700

Dear Ms. Torstenson:

We have reviewed your request for Department of the Army, US Army Corps of Engineers (Corps), jurisdictional determination (JD) for roadway improvements to ND 200 [PCN 17861, 20294, 20295]. The project will begin at the North Dakota state line and extend 18.7 miles to US-85 junction, in McKenzie County, North Dakota.

Based on the information that you provided, we have determined that waters identified in your request are not jurisdictional waters of the United States. (See attached table) Therefore, should the proposed project result in the placement of dredge or fill material in the identified jurisdictional waters, a Corps permit, pursuant to Section 404 of the Clean Water Act, will not be required prior to construction activities.

An approved (JD) has been completed for the wetland areas identified in your request and is enclosed for your information. The JD may also be viewed at our website located at: http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/NorthDakota.aspx. The JD will be available on the website within 30 days. You may also request copies of the supporting materials the Corps used in determining this JD. If you are not in agreement with the JD, you may request an administrative appeal under Corps regulations found at 33 CFR 331. The request for appeal must be received within 60 days from the date of this correspondence [September 29, 2014]. If you would like more information on the jurisdictional appeal process, contact this office. It is not necessary to submit a Request for Appeal if you do not object to the JD. The JD will be valid for a period of 5 years from the date of this letter.

This determination was conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenants are USDA program participants, or anticipate participation in the USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

The Omaha District, North Dakota Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

If you have any questions concerning this determination or jurisdiction, please feel free to contact Swade Hammond of this office at (701) 255-0015 and reference project number **NWO-2014-0327-BIS**.

Sincerely,

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): July 29, 2014

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:
Omaha District | McKenzie County; ND 200 Roadway Improvements; PCN 17861, 20294, 20295 | NWO-2014-0327-BIS |

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Isolated Wetlands & Preamble Waters (See attached table)
State: **North Dakota** County/parish/borough: **McKenzie** City: **N/A**
Center coordinates of site (lat/long in degree decimal format): Lat. **47.876615 N** Long.**-103.824668 W**
Universal Transverse Mercator: **13**
Name of nearest waterbody: **Charbonneau Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Wetland 18 None - Hydrologically Isolated; Wetland 2, 3, and 7 are hydrologically isolated preamble waters; OW- 1, 5, and 6 are preamble ditches that drain into the Yellowstone River.**
Name of watershed or Hydrologic Unit Code (HUC): **10100004**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: **June 10, 2014**
☒ Field Determination. Date(s): **Consultant conducted wetland delineation – April 2014**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are no** *"waters of the U.S."* within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **The JD review area contains one (1) isolated wetland (wetland 18) with no discernible connection to Waters of the US. Wetland 18 was delineated within NDDOT ROW and after reviewing the surrounding area, the drainage associated with Wetland 18 collects in an isolated depression located on a ranch. The review area also contains six (6) Preamble Waters. Wetlands 2, 3, and 7 are isolated preamble ditches excavated in uplands and drain only uplands. OW-1, 5, and 6 are drainage ditches which drain surrounding farm fields during short periods of high precipitation and do not have RPF. (See attached table)**

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW-

   Summarize rationale supporting determination:

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: **Pick List**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through **Pick List** tributaries before entering TNW.

[3] Supporting documentation is presented in Section III.F.
[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank
☐ changes in the character of soil
☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☐ water staining
☐ other (list):
☐ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

☐ other (list):

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .

Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☐ Habitat for:
- ☐ Federally Listed species. Explain findings: .
- ☐ Fish/spawn areas. Explain findings: .
- ☐ Other environmentally-sensitive species. Explain findings: .
- ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:
Wetland size: acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting
☐ Not directly abutting
- ☐ Discrete wetland hydrologic connection. Explain: .
- ☐ Ecological connection. Explain: .
- ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☐ Vegetation type/percent cover. Explain: .
☐ Habitat for:
- ☐ Federally Listed species. Explain findings: .
- ☐ Fish/spawn areas. Explain findings: .
- ☐ Other environmentally-sensitive species. Explain findings: .
- ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☐ Tributary waters: linear feet width (ft).
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☒ Other: (explain, if not covered above): **Wetlands 2,3, 7, and OW-1, 5, and 6 are preamble waters and not regulated by the USACE.**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☒ Wetlands: **0.87 acres.**

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:**Wetland Delineation Report – (April 2014)**.
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☒ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **USGS Map Viewer**.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☒ National wetlands inventory map(s). Cite name:**USFWS - NWI**.
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): **Google Earth Pro**
  or ☒ Other (Name & Date):**Onsite photographs within April 2014 delineation report.**.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: After reviewing the project area, it has been determined that Wetland 18 drains into a confined depression located on a ranch. There is no discernible connection with waters of the U.S. The six (6) preamble waters are not regulated under the U.S. Army Corps of Engineers.

Appendix D
Existing Vertical and Super

Horizontal Curves

Curve #	Station		$R_{Existing}$	$e_{existing}$	$e_{REQUIRED}$	Remarks
	From	To	(ft)	(%)	(%)	
1	0+00.00	3+83.30	1134.28	6.50	6.00	1146 ft radius is off the chart on table 3-9. Smallest radius on chart is 1660 ft
2	166+16.65	167+24.57	1897.86	5.34	5.87	
3	205+10.32	208+43.96	5717.58	2.70	3.00	
4	228+35.99	237+35.34	1897.85	6.81	5.83	
5	249+57.43	257+00.65	5717.57	2.70	3.00	
6	288+86.96	298+47.79	5717.60	2.90	3.00	
7	349+40.92	355+30.52	8582.42	0.58	2.12	
8	431+33.09	457+41.61	6126.90	3.36	2.83	

Vertical Curves											
(1) **Project Number**	*(2)* **PCN**	*(3)* **Design Speed (mph)**	*(4)* **Start Station**	*(5)* **End Station**	*(6)* **Grade_in (%)**	*(7)* **Grade_out (%)**	*(8)* **Length (ft)**	*(9)* **"K" value**	*(10)* **"L" value**	*(11)* **Type**	*(12)* **Meets Standard**
SS-7-200(014)000	17861	65	0+89.47	1+89.47	-0.40%	-0.90%	100.00	199.17	-	Crest	Yes
SS-7-200(014)000	17861	65	8+08.91	16+58.91	-0.90%	0.02%	850.00	916.66	83.59	Sag	Yes
SS-7-200(014)000	17861	65	20+37.66	21+37.66	0.02%	-0.41%	100.00	229.11	-	Crest	Yes
SS-7-200(014)000	17861	65	23+49.43	26+49.43	-0.41%	0.01%	300.00	703.53	38.16	Sag	Yes
SS-7-200(014)000	17861	65	41+63.70	49+63.70	0.01%	-0.28%	800.00	2691.27	-	Crest	Yes
SS-7-200(014)000	17861	65	61+23.04	66+23.04	-0.28%	0.10%	500.00	1307.81	34.53	Sag	Yes
SS-7-200(014)000	17861	65	73+62.00	83+62.00	0.10%	-0.12%	1000.00	4652.00	-	Crest	Yes
SS-7-200(014)000	17861	65	85+45.74	92+45.74	-0.12%	-0.73%	700.00	1135.97	-	Crest	Yes
SS-7-200(014)000	17861	65	97+76.20	101+76.20	-0.73%	-0.20%	400.00	759.42	48.16	Sag	Yes
SS-7-200(014)000	17861	65	104+04.48	113+04.48	-0.20%	0.10%	900.00	2926.39	27.26	Sag	Yes
SS-7-200(014)000	17861	65	123+87.42	125+87.42	0.10%	-0.12%	200.00	898.69	-	Crest	Yes
SS-7-200(014)000	17861	65	126+92.75	127+92.75	-0.12%	0.14%	100.00	389.71	23.62	Sag	Yes
SS-7-200(014)000	17861	65	132+62.13	134+62.13	0.14%	0.03%	200.00	1836.02	-	Crest	Yes
SS-7-200(014)000	17861	65	151+35.36	156+35.36	0.03%	0.18%	500.00	3321.09	13.63	Sag	Yes
SS-7-200(015)003	20294	65	162+57.10	170+57.10	0.18%	3.01%	800.00	282.13	257.13	Sag	Yes
SS-7-200(015)003	20294	65	197+58.95	212+58.95	3.01%	-3.88%	1500.00	217.45	-	Crest	Yes
SS-7-200(015)003	20294	65	224+48.48	232+98.48	-3.88%	-0.40%	850.00	244.04	316.19	Sag	Yes
SS-7-200(015)003	20294	65	241+73.27	243+23.27	-0.40%	-0.72%	150.00	465.98	-	Crest	Yes
SS-7-200(015)003	20294	65	243+97.97	244+97.97	-0.72%	0.07%	100.00	126.06	71.78	Sag	Yes
SS-7-200(016)004	20295	65	254+85.52	260+85.52	0.07%	0.22%	600.00	3937.81	13.63	Sag	Yes
SS-7-200(016)004	20295	65	273+39.85	279+39.85	0.22%	-0.31%	600.00	1134.79	-	Crest	Yes
SS-7-200(016)004	20295	65	283+07.16	288+07.16	-0.31%	0.22%	500.00	942.55	48.16	Sag	Yes
SS-7-200(016)004	20295	65	301+58.03	304+08.03	0.22%	0.02%	250.00	1196.05	-	Crest	Yes
SS-7-200(016)004	20295	65	312+25.77	319+25.77	0.02%	1.29%	700.00	547.93	115.39	Sag	Yes
SS-7-200(016)004	20295	65	320+69.90	329+69.90	1.29%	0.00%	900.00	696.03	-	Crest	Yes
SS-7-200(016)004	20295	65	335+30.94	342+30.94	0.00%	2.93%	700.00	238.59	266.22	Sag	Yes
SS-7-200(016)004	20295	65	352+44.66	363+44.66	2.93%	0.34%	1100.00	424.10	-	Crest	Yes
SS-7-200(016)004	20295	65	364+93.83	365+93.83	0.34%	2.26%	100.00	52.02	174.45	Sag	No
SS-7-200(016)004	20295	65	372+82.19	380+42.19	2.26%	-1.60%	760.00	196.86	-	Crest	Yes
SS-7-200(016)004	20295	65	385+29.57	387+79.57	-1.60%	2.67%	250.00	58.57	387.97	Sag	No
SS-7-200(016)004	20295	65	392+91.10	397+91.10	2.67%	1.37%	500.00	384.19	-	Crest	Yes
SS-7-200(016)004	20295	65	400+04.45	406+04.45	1.37%	3.11%	600.00	345.20	158.10	Sag	Yes
SS-7-200(016)004	20295	65	407+50.02	423+50.02	3.11%	-0.70%	1600.00	420.76	-	Crest	Yes
SS-7-200(016)004	20295	65	435+93.16	445+93.16	-0.70%	-3.71%	1000.00	332.00	-	Crest	Yes
SS-7-200(016)004	20295	65	448+95.23	454+95.23	-3.71%	0.89%	600.00	130.59	417.96	Sag	Yes
SS-7-200(016)004	20295	65	460+50.37	470+25.37	0.89%	-1.68%	975.00	379.38	-	Crest	Yes
SS-7-200(016)004	20295	65	472+05.70	478+05.70	-1.68%	-0.50%	600.00	508.38	107.22	Sag	Yes
SS-7-200(016)004	20295	65	489+27.24	509+27.24	-0.50%	-0.82%	2000.00	6328.17	-	Crest	Yes
SS-7-200(016)004	20295	65	511+70.03	517+20.03	-0.82%	1.89%	550.00	203.05	246.14	Sag	Yes
SS-7-200(016)004	20295	65	519+13.85	525+13.85	1.89%	-0.12%	600.00	299.15	-	Crest	Yes
SS-7-200(016)004	20295	65	551+96.48	556+96.48	-0.12%	1.58%	500.00	293.71	154.73	Sag	Yes
SS-7-200(016)004	20295	65	574+90.62	581+90.62	1.58%	0.10%	700.00	471.21	-	Crest	Yes
SS-7-200(016)004	20295	65	584+79.65	594+79.65	0.10%	1.31%	1000.00	822.15	110.49	Sag	Yes
SS-7-200(016)004	20295	65	598+54.78	607+54.78	1.31%	0.21%	900.00	813.58	-	Crest	Yes
SS-7-200(016)004	20295	65	613+99.32	618+99.32	0.21%	1.57%	500.00	366.66	123.93	Sag	Yes
SS-7-200(016)004	20295	65	619+57.87	628+57.87	1.57%	-0.90%	900.00	363.94	-	Crest	Yes
SS-7-200(016)004	20295	65	629+85.07	636+85.07	-0.90%	2.35%	700.00	215.31	295.39	Sag	Yes
SS-7-200(016)004	20295	65	645+57.98	656+57.98	2.35%	0.35%	1100.00	550.50	-	Crest	Yes
SS-7-200(016)004	20295	65	662+59.40	676+34.40	0.35%	-3.30%	1375.00	376.98	-	Crest	Yes
SS-7-200(016)004	20295	65	678+25.63	679+75.63	-3.30%	-3.82%	150.00	286.76	-	Crest	Yes
SS-7-200(016)004	20295	65	680+98.05	685+98.05	-3.82%	-0.60%	500.00	155.23	292.75	Sag	Yes
SS-7-200(016)004	20295	65	694+08.07	699+08.07	-0.60%	0.53%	500.00	442.43	102.67	Sag	Yes
SS-7-200(016)004	20295	65	708+28.82	715+28.82	0.53%	2.35%	700.00	384.96	165.18	Sag	Yes
SS-7-200(016)004	20295	65	719+30.71	727+30.71	2.35%	0.00%	800.00	340.27	-	Crest	Yes
SS-7-200(016)004	20295	65	731+15.29	746+15.29	0.00%	0.83%	1500.00	1812.66	75.23	Sag	Yes
SS-7-200(016)004	20295	65	763+82.21	772+82.21	0.83%	-0.11%	900.00	965.64	-	Crest	Yes
SS-7-200(016)004	20295	65	776+65.49	788+65.49	-0.11%	0.88%	1200.00	1218.94	89.50	Sag	Yes
SS-7-200(016)004	20295	65	792+08.00	795+08.00	0.88%	0.72%	300.00	1890.56	-	Crest	Yes
SS-7-200(016)004	20295	65	796+52.83	804+52.83	0.72%	0.92%	800.00	3953.76	18.44	Sag	Yes
SS-7-200(016)004	20295	65	826+06.10	831+06.10	0.92%	0.24%	500.00	728.70	-	Crest	Yes
SS-7-200(016)004	20295	65	831+33.97	836+33.97	0.24%	1.76%	500.00	328.91	138.20	Sag	Yes
SS-7-200(016)004	20295	65	841+46.56	856+46.56	1.76%	-1.07%	1500.00	531.35	-	Crest	Yes
SS-7-200(016)004	20295	65	858+99.70	862+99.70	-1.07%	-0.16%	400.00	443.49	81.96	Sag	Yes
SS-7-200(016)004	20295	65	875+25.62	882+75.62	-0.16%	3.60%	750.00	199.41	341.79	Sag	Yes
SS-7-200(016)004	20295	65	888+37.26	901+37.26	3.60%	-1.68%	1300.00	246.43	-	Crest	Yes
SS-7-200(016)004	20295	65	904+61.37	912+61.37	-1.68%	2.37%	800.00	197.87	367.53	Sag	Yes
SS-7-200(016)004	20295	65	928+12.80	939+12.80	2.37%	-2.18%	1100.00	241.99	-	Crest	Yes
SS-7-200(016)004	20295	65	942+97.84	946+97.84	-2.18%	-1.02%	400.00	345.48	105.22	Sag	Yes
SS-7-200(016)004	20295	65	963+13.61	971+13.61	-1.02%	3.87%	800.00	163.50	444.58	Sag	Yes
SS-7-200(016)004	20295	65	974+89.28	980+89.28	3.87%	0.01%	600.00	155.21	-	Crest	No

(1) Project Number as shown in scoping report
(2) PCN number as shown in scoping report
(3) Design speed limit in MPH
(4) Station of point of vertical curvature
(5) Station of point of vertical tangency
(6) Grade on PVC side of curve
(7) Grade on PVT side of curve
(8) Length of vertical curve, calculated as difference between PVT and PVC stationing
(9) K value determined by InRoads, K values greater than or equal to 193 are acceptable.
(10) L value used to determine comfort level of sag curve, The length of curve must exceed the L value to meet standards. L value calculated as follows: L = (G1%-G2%)*V^2/46.5
(11) Type of curve
(12) Meets standards or not as discussed in (9) and (10)?

Appendix E
Cost Estimates

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
ALTERNATIVE 1-b, MINOR REHABILITATION
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
203	140	BORROW - EXCAVATION	CY	$6.63	6425	$42,598.94
216	100	WATER	MGAL	$20.00	84	$1,680.80
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	16339	$65,354.34
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	3268	$10,554.73
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	1309	$43,116.47
410	215	SUPERPAVE FAA 45	TON	$44.00	14595	$642,182.21
410	445	PG 58-28 ASHPALT CEMENT	TON	$512.18	875.7	$448,517.57
706	300	FIELD LAB - TYPE C	EA	$3,000.00	1	$3,000.00
706	400	FIELD OFFICE	EA	$15,000.00	1	$15,000.00
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	$483.96	6.008	$2,907.61
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	$565.11	3.004	$1,697.58
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	63444	$19,667.64
772	9010	AUTOMATIC TRAFFIC RECORDER SYSTEM	EA	$94,000.00	1	$94,000.00
		Highway Patrol Turnaround	Lump	$50,000.00	1	$50,000.00

SUBTOTAL	$1,440,277.88
ESTIMATE CONTINGENCY (20%)	$288,055.58
ENGINEERING (20%)	$288,055.58
MOBILIZATION (10%)	$144,027.79
TRAFFIC CONTROL (5%)	$72,013.89
CONTRACT BOND (0.75%)	$10,802.08
TOTAL COST	$2,243,232.79

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
ALTERNATIVE 1-c, STRUCTURAL IMPROVEMENT
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
203	140	BORROW - EXCAVATION	CY	$6.63	16000	$106,080.00
203	207	APPROACH INSLOPE RECONSTRUCTION	EA	$3,886.00	22	$85,492.00
216	100	WATER	MGAL	$20.00	75	$1,502.00
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	14473	$57,892.38
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	2895	$9,349.62
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	145	$4,790.72
410	215	SUPERPAVE FAA 45	TON	$44.00	20447	$899,672.33
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	1226.8	$628,355.69
606	1008	10FT X 8FT PRECAST RCD CULVERT	FT	$1,110.00	12.4	$13,752.90
606	5008	10FT X 8FT PRECAST RCB END SECTION	EA	$30,000.00	2.0	$60,000.00
706	300	FIELD LAB - TYPE C	EA	$3,000.00	1	$3,000.00
706	400	FIELD OFFICE	EA	$15,000.00	1	$15,000.00
714	4100	PIPE CONDUIT 18 IN	LF	$50.00	69	$3,440.50
714	4110	PIPE CONDUIT 30 IN	LF	$156.53	30	$4,683.38
714	9656	INSTALL END SECTION - ALL TYPES & SIZES	EA	$1,099.00	9	$9,891.00
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	$483.96	6.008	$2,907.61
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	$565.11	3.004	$1,697.58
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	63444	$19,667.64
772	9010	AUTOMATIC TRAFFIC RECORDER SYSTEM	EA	$94,000.00	1	$94,000.00
		Highway Patrol Turnaround	Lump	$50,000.00	1	$50,000.00
		NEW SIGN ON NEW SUPPORT	EA	$441.38	4	$1,765.52

SUBTOTAL	$2,072,940.88
ESTIMATE CONTINGENCY (20%)	$414,588.18
ENGINEERING (20%)	$414,588.18
MOBILIZATION (10%)	$207,294.09
TRAFFIC CONTROL (5%)	$103,647.04
CONTRACT BOND (0.75%)	$15,547.06
TOTAL COST	**$3,228,605.41**

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
ALTERNATIVE 1-d, MAJOR REHABILITATION
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
201	300	CLEARING AND GRUBBING	ACRE	$3,000.00	28.958	$86,874.24
203	101	COMMON EXCAVATION - TYPE A	CY	$4.24	81.900	$347.26
203	119	TOPSOIL - IMPORTED	CY	$4.00	23360	$93,438.07
203	140	BORROW - EXCAVATION	CY	$6.63	38741	$256,852.83
203	207	APPROACH INSLOPE RECONSTRUCTION	EA	$3,886.00	22	$85,492.00
216	100	WATER	MGAL	$20.00	2608	$52,160.00
302	101	SALVAGED BASE COURSE	CY	$18.00	17361	$312,497.90
306	105	AGGREGATE CL 3M	TON	$14.61	16059	$234,621.16
306	300	BLENDED BASE COURSE	SY	$2.14	51390	$109,974.66
306	350	REMOVE AND RELAY BLENDED BASE COURSE	SY	$4.77	51390	$245,130.44
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	14438	$57,750.34
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	5775	$18,653.36
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	433	$14,271.55
410	215	SUPERPAVE FAA 45	TON	$44.00	19326	$850,339.32
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	1159.6	$593,900.17
606	1008	10FT X 10FT PRECAST RCB CULVERT	LUMP	$176,000.00	1.0	$176,000.00
706	300	FIELD LAB - TYPE C	EA	$3,000.00	1	$3,000.00
706	400	FIELD OFFICE	EA	$15,000.00	1	$15,000.00
708	550	MULCHING	ACRE	$434.74	28.958	$12,589.24
708	1029	REMOVAL RIPRAP - LOOSE ROCK	CY	$18.45	37	$686.89
708	2240	SEEDING - TYPE B CL II	ACRE	$643.28	28.958	$18,628.15
708	2260	SEEDING - TYPE B CL IV	ACRE	$76.80	28.958	$2,223.98
714	4100	PIPE CONDUIT 18 IN	LF	$50.00	49.56	$2,478.00
714	4105	PIPE CONDUIT 24 IN	LF	$95.95	93.97	$9,016.42
714	4110	PIPE CONDUIT 30 IN	LF	$156.53	22.52	$3,525.06
714	4115	PIPE CONDUIT 36 IN	LF	$170.87	44.24	$7,559.29
714	4145	PIPE CONDUIT 72 IN	LF	$579.80	6	$3,478.80
714	9656	INSTALL END SECTION - ALL TYPES & SIZES	EA	$1,099.00	21	$23,079.00
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	$483.96	6.008	$2,907.63
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	$565.11	3.004	$1,697.58
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	63444.48	$19,667.79
772	9010	AUTOMATIC TRAFFIC RECORDER SYSTEM	EA	$94,000.00	1	$94,000.00
		Highway Patrol Turnaround	Lump	$50,000.00	1	$50,000.00
		NEW SIGN ON NEW SUPPORT	EA	$206.00	40.00	$8,240.00
		VERTICAL GRADE FIX	LS	$1,680,632.40	1	$1,680,632.40

SUBTOTAL	$5,146,713.53
ESTIMATE CONTINGENCY (20%)	$1,029,342.71
ENGINEERING (20%)	$1,029,342.71
MOBILIZATION (10%)	$514,671.35
TRAFFIC CONTROL (5%)	$257,335.68
CONTRACT BOND (0.75%)	$38,600.35
TOTAL COST	**$8,016,006.32**

PROJECT NUMBER: SS-7-200(015)003 PCN: 20294
BRIDGE REPLACEMENT SEGMENT
ALTERNATIVE 1-d, HBP SHOULDERS
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
216	100	WATER	MGAL	$20.00	-96	-$1,920.00
302	101	SALVAGED BASE COURSE	CY	$18.00	-2546	-$45,828.00
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	3507.00	$14,028.00
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	1410	$4,553.90
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	106	$3,484.16
410	215	SUPERPAVE FAA 45	TON	$44.00	5091.5	$224,027.63
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	306.8	$157,136.82

SUBTOTAL	$355,482.52
ESTIMATE CONTINGENCY (20%)	$71,096.50
ENGINEERING (20%)	$71,096.50
MOBILIZATION (10%)	$35,548.25
TRAFFIC CONTROL (5%)	$17,774.13
CONTRACT BOND (0.75%)	$2,666.12
TOTAL COST	$553,664.02

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
OPTIONAL WORK ITEM B, ROUNDABOUT AT ND 200 / ND 58
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
201	300	CLEARING AND GRUBBING	ACRE	$3,000.00	2.241	$6,723.00
202	121	REMOVE & SALVAGE BITUMINOUS SURFACING	TON	$4.00	2745.360	$10,981.44
202	153	SAW BITUMINOUS SURFACING-FULL DEPTH	LF	$0.33	75	$24.75
202	170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	$30.00	75	$2,250.00
203	101	COMMON EXCAVATION-TYPE A	CY	$4.24	679	$2,880.57
203	109	TOPSOIL	CY	$4.00	796.94	$3,187.76
203	140	BORROW EXCAVATION	CY	$6.63	4883	$32,376.68
216	100	WATER	MGAL	$20.00	520	$10,393.25
230	330	SUBGRADE PREPARATION-TYPE C-18IN	STA	$1,000.00	17	$17,000.00
302	100	SALVAGED BASE COURSE	TON	$18.00	11188.720	$201,396.96
550	307	9.5IN NON REINF CONCRETE PVMT CL AE DOWELED	SY	$135.00	7246.556	$978,285.00
550	330	NON-REINFORCED CONCRETE PVMT CL AE-DOWELED-COLORED	SY	$90.00	738.270	$66,444.30
550	3005	CONCRETE MEDIAN PAVEMENT	SY	$50.00	1010.3	$50,516.67
708	1200	SMALL ROCK COVER	TON	$50.00	663.6	$33,182.29
708	2240	SEEDING-TYPE B-CL II	ACRE	$643.28	2.241	$1,441.59
708	2260	SEEDING-TYPE B-CL IV	ACRE	$76.80	2.241	$172.11
708	5500	MULCHING	ACRE	$434.74	2.241	$974.25
714	4105	PIPE CONDUIT 24IN	LF	$350.00	300.0	$105,000.00
748	140	CURB & GUTTER-TYPE I SEC B	LF	$30.00	2536.0	$76,080.00
748	151	MOUNTABLE CURB & GUTTER-TYPE 1 SEC B	LF	$30.00	490.0	$14,700.00
754	117	FLAT SHEET FOR SIGNS-TYPE 3A REFL SHEETING	SF	$25.00	545.0	$13,625.00
754	206	STEEL GALV POSTS-TELESCOPING PREFORATED TUBE	LF	$18.00	800.0	$14,400.00
754	532	PANEL FOR SIGNS-TYPE 3A REFLECTIVE SHEETING	SF	$35.00	105.0	$3,675.00
762	1104	PVMT MK PAINTED 4IN	LF	$0.06	4000.0	$240.00
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	$4.00	8209	$32,836.00
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	$8.00	230	$1,840.00

SUBTOTAL	$1,680,626.62
ESTIMATE CONTINGENCY (20%)	$336,125.32
ENGINEERING (20%)	$336,125.32
MOBILIZATION (10%)	$168,062.66
TRAFFIC CONTROL (15%)	$252,093.99
CONTRACT BOND (0.75%)	$12,604.70
TOTAL COST	$2,785,638.63

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
OPTIONAL WORK ITEM C, TURN LANES AT ND 200 / ND 58
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
201	300	CLEARING AND GRUBBING	ACRE	$3,000.00	0.788	$2,363.28
203	101	COMMON EXCAVATION - TYPE A	CY	$4.24	1094.000	$4,638.56
203	119	TOPSOIL - IMPORTED	CY	$4.00	1431	$5,725.27
203	140	BORROW - EXCAVATION	CY	$6.63	8108	$53,757.37
203	207	APPROACH INSLOPE RECONSTRUCTION	EA	$2,261.38	3	$6,784.14
216	100	WATER	MGAL	$20.00	730	$14,597.58
302	100	SALVAGED BASE COURSE	CY	$18.00	12993	$233,879.65
306	105	AGGREGATE CL 3M	TON	$14.61	1949	$28,478.72
306	300	BLENDED BASE COURSE	SY	$2.14	7485	$16,018.26
306	350	REMOVE AND RELAY BLENDED BASE COURSE	SY	$4.77	7485	$35,704.25
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	5336	$21,344.70
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	2134	$6,894.34
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	160	$5,274.81
405	107	REMOVE BITUMINOUS SURFACE	SY	$10.00	6723	$67,228.67
410	215	SUPERPAVE FAA 45	TON	$44.00	7708	$339,143.61
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	462.5	$236,867.15
708	550	MULCHING	ACRE	$434.74	0.788	$342.47
708	2240	SEEDING - TYPE B CL II	ACRE	$643.28	0.788	$506.75
708	2260	SEEDING - TYPE B CL IV	ACRE	$76.80	0.788	$60.50
714	4105	PIPE CONDUIT 24 IN	LF	$95.95	208	$19,957.60
714	9656	INSTALL END SECTION - ALL TYPES & SIZES	EA	$1,099.00	5	$5,495.00
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	11498	$3,564.25

SUBTOTAL	$1,108,626.93
ESTIMATE CONTINGENCY (20%)	$221,725.39
ENGINEERING (20%)	$221,725.39
MOBILIZATION (10%)	$110,862.69
TRAFFIC CONTROL (5%)	$55,431.35
CONTRACT BOND (0.75%)	$8,314.70
TOTAL COST	$1,726,686.44

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
OPTIONAL WORK ITEM D, FREE RIGHT INTERSECTION FROM SB 58 TO WB ND 200
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
201	300	CLEARING AND GRUBBING	SY	$3,000.00	2.200	6600
203	101	COMMON EXCAVATION - TYPE A	CY	$4.24	832.560	$3,530.05
203	119	TOPSOIL - IMPORTED	CY	$4.00	280	$1,120.98
203	140	BORROW - EXCAVATION	CY	$6.63	2428	$16,100.56
203	207	APPROACH INSLOPE RECONSTRUCTION	EA	$2,261.38	8	$18,091.04
216	100	WATER	MGAL	$20.00	277	$5,541.53
302	100	SALVAGED BASE COURSE	CY	$18.00	4964	$89,358.18
306	105	AGGREGATE CL 3M	TON	$14.61	1982	$28,963.58
306	300	BLENDED BASE COURSE	SY	$2.14	7613	$16,290.97
306	350	REMOVE AND RELAY BLENDED BASE COURSE	SY	$4.77	7613	$36,312.12
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$3.52	4386	$15,438.11
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	877	$2,833.24
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	132	$4,335.39
405	107	REMOVE BITUMINOUS SURFACING	SY	$10.00	4731	$47,313.64
410	215	SUPERPAVE FAA 45	TON	$44.00	6335	$278,743.72
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	380.1	$194,682.21
708	550	MULCHING	ACRE	$434.74	2.200	$956.43
708	2240	SEEDING - TYPE B CL II	ACRE	$643.28	2.200	$1,415.22
708	2260	SEEDING - TYPE B CL IV	ACRE	$76.80	2.200	$168.96
714	4105	PIPE CONDUIT 24 IN	LF	$95.95	120	$11,514.00
714	9656	INSTALL END SECTION - ALL TYPES & SIZES	EA	$1,099.00	4	$4,396.00
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	20000.00	$6,200.00

SUBTOTAL	$789,905.93
ESTIMATE CONTINGENCY (20%)	$157,981.19
ENGINEERING (20%)	$157,981.19
MOBILIZATION (10%)	$78,990.59
TRAFFIC CONTROL (5%)	$39,495.30
CONTRACT BOND (0.75%)	$5,924.29
TOTAL COST	$1,230,278.49

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
OPTIONAL WORK ITEM E, ALL WAY STOP AT ND 200 / ND 58
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
		NEW SIGN ON NEW SUPPORT	EA	$500.00	4.000	$2,000.00

SUBTOTAL	$2,000.00
ESTIMATE CONTINGENCY (20%)	$400.00
ENGINEERING (20%)	$400.00
MOBILIZATION (10%)	$200.00
TRAFFIC CONTROL (5%)	$100.00
CONTRACT BOND (0.75%)	$15.00
TOTAL COST	$3,115.00

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
OPTIONAL WORK ITEM F, TRAFFIC SIGNAL AT ND 200 / ND 58
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
772	1	TRAFFIC SIGNALS SYSTEM	EA	$215,000.00	1.000	$215,000.00

SUBTOTAL	$215,000.00
ESTIMATE CONTINGENCY (20%)	$43,000.00
ENGINEERING (20%)	$43,000.00
MOBILIZATION (10%)	$21,500.00
TRAFFIC CONTROL (5%)	$10,750.00
CONTRACT BOND (0.75%)	$1,612.50
TOTAL COST	$334,862.50

PROJECT NUMBER: SS-7-200(014)000 PCN: 17861
STATE LINE E TO YELLOWSTONE BRIDGE
OPTIONAL WORK ITEM G, TRAFFIC SIGNAL WITH TURN LANES AT ND 200 / ND 58
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
201	300	CLEARING AND GRUBBING	ACRE	$3,000.00	0.788	$2,364.00
203	101	COMMON EXCAVATION - TYPE A	CY	$4.24	1094	$4,637.29
203	119	TOPSOIL - IMPORTED	CY	$4.00	1431	$5,724.00
203	140	BORROW - EXCAVATION	CY	$6.63	8109	$53,759.36
203	207	APPROACH INSLOPE RECONSTRUCTION	EA	$2,261.38	3	$6,784.14
216	100	WATER	MGAL	$20.00	746	$14,910.07
302	100	SALVAGED BASE COURSE	CY	$18.00	12996	$233,932.51
306	105	AGGREGATE CL 3M	TON	$14.61	2257	$32,980.20
306	300	BLENDED BASE COURSE	SY	$2.14	8668	$18,550.18
306	350	REMOVE AND RELAY BLENDED BASE COURSE	SY	$4.77	8668	$41,347.82
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	5955	$23,821.32
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	1191	$3,847.14
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	179	$5,886.84
405	107	REMOVE BITUMINOUS SURFACE	SY	$10.00	6871	$68,706.73
410	215	SUPERPAVE FAA 45	TON	$44.00	8602	$378,494.25
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	516.1	$264,350.71
708	550	MULCHING	ACRE	$434.74	0.788	$342.58
708	2240	SEEDING - TYPE B CL II	ACRE	$643.28	0.788	$506.90
708	2260	SEEDING - TYPE B CL IV	ACRE	$76.80	0.788	$60.52
714	4105	PIPE CONDUIT 24 IN	LF	$95.95	208	$19,957.60
714	9656	INSTALL END SECTION - ALL TYPES & SIZES	EA	$1,099.00	5	$5,495.00
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	11498	$3,564.38
772	1	TRAFFIC SIGNALS SYSTEM	EA	$215,000.00	1.00	$215,000.00

SUBTOTAL	$1,405,023.54
ESTIMATE CONTINGENCY (20%)	$281,004.71
ENGINEERING (20%)	$281,004.71
MOBILIZATION (10%)	$140,502.35
TRAFFIC CONTROL (5%)	$70,251.18
CONTRACT BOND (0.75%)	$10,537.68
TOTAL COST	$2,188,324.16

PROJECT NUMBER: SS-7-200(015)003 PCN: 20294
BRIDGE REPLACEMENT SEGMENT
ALTERNATIVE 2-b, STRUCTURAL IMPROVEMENT
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
203	101	COMMON EXCAVATION - TYPE A	CY	$4.24	46	$194.19
203	140	BORROW - EXCAVATION	CY	$6.63	51150	$339,121.19
216	100	WATER	MGAL	$20.00	986	$19,728.43
302	100	SALVAGED BASE COURSE	CY	$18.00	1375	$24,750.00
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	1004	$3,243.92
410	215	SUPERPAVE FAA 45	TON	$44.00	5150	$226,615.38
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	309.0	$158,274.36
411	105	MILLING PAVEMENT SURFACE - 3 INCH	SY	$5.42	1384	$7,499.98
706	300	FIELD LAB - TYPE C	EA	$3,000.00	1	$5,000.00
706	400	FIELD OFFICE	EA	$15,255.22	1	$15,255.22
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	$483.96	2.189	$1,059.61
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	$565.11	1.095	$618.64
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	23121	$7,167.40
		NEW SIGN ON NEW SUPPORT	EA	$225.00	8.00	$1,800.00

SUBTOTAL	$810,328.30
ESTIMATE CONTINGENCY (20%)	$162,065.66
ENGINEERING (20%)	$162,065.66
MOBILIZATION (10%)	$81,032.83
TRAFFIC CONTROL (5%)	$40,516.42
CONTRACT BOND (0.75%)	$6,077.46
TOTAL COST	$1,262,086.33

PROJECT NUMBER: SS-7-200(015)003 PCN: 20294
BRIDGE REPLACEMENT SEGMENT
OPTIONAL WORK ITEM B, HBP SHOULDERS
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
216	100	WATER	MGAL	$20.00	-515.7	-$10,314.00
302	100	SALVAGED BASE COURSE	CY	$18.00	-1375	-$24,750.00
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	3621.3	$14,485.20
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	1004	$3,243.92
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	109	$3,579.66
410	215	SUPERPAVE FAA 45	TON	$44.00	2751	$121,044.00
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	165.1	$84,540.43

SUBTOTAL	$191,829.20
ESTIMATE CONTINGENCY (20%)	$38,365.84
ENGINEERING (20%)	$38,365.84
MOBILIZATION (10%)	$19,182.92
TRAFFIC CONTROL (5%)	$9,591.46
CONTRACT BOND (0.75%)	$1,438.72
TOTAL COST	$298,773.98

PROJECT NUMBER: SS-7-200(016)004 PCN: 20295
YELLOWSTONE BRIDGE TO JCT US 85
ALTERNATIVE 3-b, MINOR REHABILITATION
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
216	100	WATER	MGAL	$20.00	1576	$31,511.16
302	100	SALVAGED BASE COURSE	CY	$18.00	32492	$584,859.79
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	72559	$290,234.03
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	22279	$71,961.42
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	666	$21,946.22
410	215	SUPERPAVE FAA 45	TON	$44.00	57153	$2,514,750.34
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	3429.2	$1,756,370.22
706	300	FIELD LAB - TYPE C	EA	$3,000.00	1	$5,000.00
706	400	FIELD OFFICE	EA	$15,255.22	1	$15,255.22
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	$483.96	28.568	$13,825.77
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	$565.11	14.284	$8,072.03
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	301678.08	$93,520.20
		NEW SIGN ON NEW SUPPORT	EA	$237.00	101.00	$23,937.00

SUBTOTAL	$5,431,243.41
ESTIMATE CONTINGENCY (20%)	$1,086,248.68
ENGINEERING (20%)	$1,086,248.68
MOBILIZATION (10%)	$543,124.34
TRAFFIC CONTROL (5%)	$271,562.17
CONTRACT BOND (0.75%)	$40,734.33
TOTAL COST	$8,459,161.62

PROJECT NUMBER: SS-7-200(016)004 PCN: 20295
YELLOWSTONE BRIDGE TO JCT US 85
ALTERNATIVE 3-c, STRUCTURAL IMPROVEMENT
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
203	207	APPROACH INSLOPE RECONSTRUCTION	EA	$2,261.38	13	$29,397.94
216	100	WATER	MGAL	$20.00	1576	$31,511.16
302	100	SALVAGED BASE COURSE	CY	$18.00	32492	$584,859.79
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	71204	$284,816.12
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	31085	$100,405.56
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	279	$9,203.33
410	215	SUPERPAVE FAA 45	TON	$44.00	62220	$2,737,691.47
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	3733.2	$1,912,078.39
706	300	FIELD LAB - TYPE C	EA	$3,000.00	1	$3,000.00
706	400	FIELD OFFICE	EA	$15,255.22	1	$15,255.22
714	4100	PIPE CONDUIT 18 IN	LF	$50.00	144.2	$7,210.00
714	4105	PIPE CONDUIT 24 IN	LF	$95.95	52.1	$4,999.00
714	4110	PIPE CONDUIT 30 IN	LF	$156.53	37	$5,791.61
714	4125	PIPE CONDUIT 48 IN	LF	$303.91	21	$6,382.11
714	4135	PIPE CONDUIT 60 IN	LF	$244.62	17.7	$4,329.77
714	9656	INSTALL END SECTION - ALL TYPES & SIZES	EA	$1,099.00	32	$35,168.00
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	$483.96	28.568	$13,825.77
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	$565.11	14.284	$8,072.03
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	301678.08	$93,520.20
764	131	W-BEAM GUARDRAIL	LF	$40.52	790.00	$32,010.80
765	145	W-BEAM GAURDRAIL END TERMINAL	EA	$2,131.82	4.00	$8,527.28
		NEW SIGN ON NEW SUPPORT	EA	$237.00	101.00	$23,937.00

SUBTOTAL	$5,951,992.56
ESTIMATE CONTINGENCY (20%)	$1,190,398.51
ENGINEERING (20%)	$1,190,398.51
MOBILIZATION (10%)	$595,199.26
TRAFFIC CONTROL (5%)	$297,599.63
CONTRACT BOND (0.75%)	$44,639.94
TOTAL COST	$9,270,228.41

PROJECT NUMBER: SS-7-200(016)004 PCN: 20295
YELLOWSTONE BRIDGE TO JCT US 85
ALTERNATIVE 3-C, STRUCTURAL IMPROVEMENT, WORK OPTION II, SUPERELEVATION CORRECTION
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
230	110	RESHAPING INSLOPE	LS	$8,800.00	1.0	$8,800.00
410	215	SUPERPAVE FAA 45	TON	$44.00	1122.9	$49,407.60
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	67.5	$34,572.15

SUBTOTAL	$92,779.75
ESTIMATE CONTINGENCY (20%)	$18,555.95
ENGINEERING (20%)	$18,555.95
MOBILIZATION (10%)	$9,277.98
TRAFFIC CONTROL (5%)	$4,638.99
CONTRACT BOND (0.75%)	$695.85
TOTAL COST	$144,504.46

PROJECT NUMBER: SS-7-200(016)004 PCN: 20295
YELLOWSTONE BRIDGE TO JCT US 85
ALTERNATIVE 3-d, MAJOR REHABILITATION
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
201	300	CLEARING AND GRUBBING	ACRE	$3,000.00	62.333	$186,999.00
202	132	REMOVAL OF BITUMINOUS SURFACING	SY	$4.82	89711	$432,409.41
202	153	SAW BITUMINOUS SURFACE-FULL DEPTH	LF	$2.00	134070	$268,139.52
203	101	COMMON EXCAVATION - TYPE A	CY	$4.24	487.000	$2,064.88
203	119	TOPSOIL - IMPORTED	CY	$4.00	50282	$201,127.81
203	140	BORROW - EXCAVATION	CY	$6.63	154617	$1,025,112.70
203	207	APPROACH INSLOPE RECONSTRUCTION	EA	$2,261.38	13	$29,397.94
216	100	WATER	MGAL	$20.00	6063	$121,264.57
302	100	SALVAGED BASE COURSE	CY	$18.00	74855	$1,347,386.02
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	59539	$238,154.35
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	25898	$83,651.82
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	629	$20,739.48
410	215	SUPERPAVE FAA 45	TON	$44.00	88484	$3,893,297.33
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	5309.0	$2,719,185.03
606		7x5x66" PRECAST RCB CULVERT	LUMP	$160,500.00	1	$160,500.00
706	300	FIELD LAB - TYPE C	EA	$3,000.00	1	$3,000.00
706	400	FIELD OFFICE	EA	$15,255.22	1	$15,255.22
708	550	MULCHING	ACRE	$434.74	62.333	$27,098.65
708	2240	SEEDING - TYPE B CL II	ACRE	$643.28	62.333	$40,097.57
708	2260	SEEDING - TYPE B CL IV	ACREA	$76.80	62.333	$8,332.80
714	4100	PIPE CONDUIT 18 IN	LF	$50.00	108.500	$24,344.00
714	4105	PIPE CONDUIT 24 IN	LF	$95.95	486.88	$11,357.60
714	4110	PIPE CONDUIT 30 IN	LF	$156.53	118.37	$2,629.70
714	4115	PIPE CONDUIT 36 IN	LF	$170.87	16.80	$3,340.51
714	4125	PIPE CONDUIT 48 IN	LF	$303.91	19.55	$34,463.39
714	4135	PIPE CONDUIT 60 IN	LF	$244.62	113.40	$4,317.54
714	4145	PIPE CONDUIT 72 IN	LF	$579.80	17.65	$10,233.47
714	9656	INSTALL END SECTION - ALL TYPES & SIZES	EA	$1,099.00	59.00	$64,841.00
760	5	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	$483.96	28.568	$13,825.77
760	7	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	$565.11	14.284	$8,072.03
762	113	EPOXY PVMT MK 4IN LINE	LF	$0.31	301678.08	$93,520.20
764	131	W-BEAM GUARDRAIL	LF	$40.52	790.00	$32,010.80
765	145	W-BEAM GAURDRAIL END TERMINAL	EA	$2,131.82	4.00	$8,527.28
		NEW SIGN ON NEW SUPPORT	EA	$237.00	101.00	$23,937.00
		VERTICAL GRADE FIX	LS	$4,116,234.85	1.00	$4,116,234.85
		SUPERELEVATION CORRECTION	LS	$63,789.15	1.00	$63,789.15

SUBTOTAL	$15,338,658.41
ESTIMATE CONTINGENCY (20%)	$3,067,731.68
ENGINEERING (20%)	$3,067,731.68
MOBILIZATION (10%)	$1,533,865.84
TRAFFIC CONTROL (5%)	$766,932.92
CONTRACT BOND (0.75%)	$115,039.94
TOTAL COST	$23,889,960.47

PROJECT NUMBER: SS-7-200(016)004 PCN: 20295
YELLOWSTONE BRIDGE TO JCT US 85
MAJOR REHAB OPTIONAL WORK ITEM II, HBP SHOULDERS
DECISION DOCUMENT PRELIMINARY ESTIMATE
FEBRUARY 19, 2014

SPEC	CODE	ITEM DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
216	100	WATER	MGAL	$20.00	*-580*	-$11,606.23
302	100	SALVAGED BASE COURSE	CY	$18.00	*-15475*	-$278,549.43
401	100	MC70 OR 250 LIQUID ASPHALT	GAL	$4.00	16760	$67,039.57
401	150	SS1H OF CSS1H OR MS1 EMULSIFIED ASPHALT	GAL	$3.23	3352	$10,826.89
401	160	BLOTTER MATERIAL CL 44	TON	$32.95	503	$16,567.15
410	215	SUPERPAVE FAA 45	TON	$44.00	30950	$1,361,797.20
410	445	PG 58-28 ASPHALT CEMENT	TON	$512.18	1857	$951,116.30

SUBTOTAL	$2,117,191.47
ESTIMATE CONTINGENCY (20%)	$423,438.29
ENGINEERING (20%)	$423,438.29
MOBILIZATION (10%)	$211,719.15
TRAFFIC CONTROL (5%)	$105,859.57
CONTRACT BOND (0.75%)	$15,878.94
TOTAL COST	$3,297,525.71

Appendix F
Additional Draft Documented CAT EX Comments

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
1	Cover	Cover	Paul Moch	NDDOT Nepa Reviewer	Add Paul J Moch, ETS Division as Environmental Reviewer.	Name and Division will be added	JM - 5/8/2014
2	2	Project Description	Paul Moch	NDDOT Nepa Reviewer	Reference the Traffic Operations Report which is appended by reference as the source of the traffic volumes.	Source reference will be added. The traffic data were not obtained from the Traffic Operations Report but were given directly from NDDOT to include in the Documented CatEx Document.	JM - 5/8/2014
3	3	Purpose of Project	Paul Moch	NDDOT Nepa Reviewer	Expand this section according to FHWA Purpose and Need guidance to include correction of Roadway Deficiencies and improve Safety. Transportation Demand may also be evaluated due to sub-standard LOS at intersection of 200/58. Safety — Explain if the proposed action is necessary to correct an existing or potential safety hazard. In addition, explain if the existing accident rate is excessively high and why, and how the proposed action will improve safety. Roadway Deficiencies — Explain if and how the proposed action is necessary to correct existing roadway deficiencies (e.g., substandard geometrics, load limits on structures, inadequate cross-section, high maintenance costs, etc.) In addition, explain how the proposed action will correct these deficiencies. Source : http://environment.fhwa.dot.gov/projdev/tdmelements.asp	This section will be expanded as commented. Substandard LOS will be added to P&N The safety issue will be expounded upon as commented. Additional discussion will be included on geometric deficiencies and how the improvements will address these deficiencies.	JM - 5/8/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
4	5	Irrigation	Paul Moch	NDDOT Nepa Reviewer	The document could do a better job evaluating and disclosing impacts associated with the box culvert extensions/modifications for applicable alternatives.	More information on the box culverts will be included.	JM - 5/8/2014
5	8	Scope of Work	Paul Moch	NDDOT Nepa Reviewer	Will the Federal Cost Share account for the difference between cost allocated in STIP and actual cost?	Question is noted. Determination by NDDOT	JM - 5/8/2014
6	8	Description of Alternatives	Paul Moch	NDDOT Nepa Reviewer	Add to all No Build alternatives that they do not meet the Purpose and Need for the Project.	Statement will be added as commented.	JM - 5/8/2014
7	12 to 18	Optional Work Item 2	Paul Moch	NDDOT Nepa Reviewer	If correcting Sub-standard LOS is added to project Purpose, then include discussion on the intersection options that do not meet the purpose and need for the project.	Substandard LOS will be made part of P&N so intersection alt's that do not sufficiently improve LOS will be noted.	JM - 5/8/2014
8	24	Traffic Control	Paul Moch	NDDOT Nepa Reviewer	Was a detour evaluated? NDDOT Management prefers maintaining 2-way traffic in oil patch counties wherever possible. This should be considered and discussed with design division.	No viable detour options exist. Further discussions will occur with the Design Division prior to final design. The document will state that 2-way traffic will be maintained.	JM - 5/8/2014
9	24	WZTC	Paul Moch	NDDOT Nepa Reviewer	Include the temporary paving during roundabout construction in relevant environmental impact categories.	Temporary paving will be included in relavent environmental impacts.	JM - 5/8/2014
10	25	Maintenance	Paul Moch	NDDOT Nepa Reviewer	Since permanent R/W is required to construct, restate first sentence to say it will be entirely within NDDOT R/W upon project completion.	Sentence will be restated as requested.	JM - 5/8/2014
11	25	Summary of Engineering Issues	Paul Moch	NDDOT Nepa Reviewer	Reword 'irrigation country'. Also, include for which segment the box culvert would need to be extended.	Change made as stated.	JM - 5/8/2014
12	26	Summary of Environmental Issues	Paul Moch	NDDOT Nepa Reviewer	The access to the park and bridge should be maintained for this to be considered a 'non-use' under Section 4(f) of US DOT act. Include this provision in document.	A statement will be added stating that access must be maintained. A note will need to be included in the plans.	JM - 5/8/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
13	3-EIC	13-R/W	Paul Moch	NDDOT Nepa Reviewer	Insure R/W temporary and permanent easements required for project are not encumbered by any state or federal interests.	No interests found on parcels or in SOV letters. Once right-of-way easements are identified all encumbered interests will be cleared.	JM - 5/8/2014
14	4-EIC	16-Social	Paul Moch	NDDOT Nepa Reviewer	'Yes' is a more appropriate response when considering the 1-way traffic and the temporary effect to travel patterns as well as emergency services.	Change will be made on the EIC	JM - 5/8/2014
15	5-EIC	TE Species	Paul Moch	NDDOT Nepa Reviewer	FHWA review is required for Whooping Crane. See table in Appendix B and the type of work requiring FHWA review for Whooping Crane.	Table will be updated selecting FHWA review.	JM - 5/8/2014
16	6-EIC	Environmental Commitments	Paul Moch	NDDOT Nepa Reviewer	What type of coordination is required with ND State Water Commission in regard to their wells? This discussion likely should be included in environmental issues for any/all alternatives.	Required communication has been outlined in the State Water Commission SOV response. This will be added to the environmental issues section for any/all alternatives.	JM - 5/8/2014
17	6-EIC	Permits	Paul Moch	NDDOT Nepa Reviewer	SWC identifies need for Sovereign Land Permit; however, one would not be needed if we will not be beneath the Ordinary High Water Mark. The final delineation to be completed this spring will delineate the boundary of the Yellowstone River.	Revised delineation will dictate impacts and permitting.	JM - 5/8/2014
18		SOV Letters	Paul Moch	NDDOT Nepa Reviewer	A number of companies with Utilities in the area responded with concerns. Add the phase to which utility coordination will take place and also if there are any anticipated engineering issues.	Some utility coordination has already occurred. It is expected that once the build alternative is selected the utility coordination can proceed into the design phase. No engineering issues anticipated with utilities at this time.	JM - 5/8/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
19		SOV Letters	Paul Moch	NDDOT Nepa Reviewer	Since USFWS and USFS did not respond to the SOV letters, contact needs to be made to insure they have no property encumbrances on required temp. or perm. R/W needed for construction.	Contact will be made to USFWS and USFS.	JM - 5/8/2014
20		Appendix B	Paul Moch	NDDOT Nepa Reviewer	Please revise TE table to account for most recent USFWS changes to ND's TE listings. Include proposed species designations and determine the potential the project has to affect the species.	TE table has been revised to include two additional species. A determination will be made but the provided guidance is limited.	JM - 5/8/2014
21		Appendix B	Paul Moch	NDDOT Nepa Reviewer	FHWA review is required for the Pallid Sturgeon in addition to the Whooping Crane as mentioned in previous comment.	Table will be updated selecting FHWA review.	JM - 5/8/2014
22		Appendix C	Paul Moch	NDDOT Nepa Reviewer	Update Tables and resubmit JD to NDDOT ETS for review upon completion of additional delineation.	Tables will be updated and resubmitted upon completion of additional delineation.	JM - 5/8/2014
23		Appendix E	Paul Moch	NDDOT Nepa Reviewer	Include Section 6(f) documentation in appendix or remove appendix if no additional documentation is available.	Appendix will be removed.	JM - 5/8/2014
24		PCN 17861	Bob Fode	Office of Project Development	1. Yes 2. 1-c 3. Na 4. B	Recommendations will be included in document.	JM - 5/8/2014
25		PCN 20294	Bob Fode	Office of Project Development	1. Yes 2. 2-b 3. A 4. Yes	Recommendations will be included in document.	JM - 5/8/2014
26		PCN 20295	Bob Fode	Office of Project Development	1. Yes 2. 3-c 3. A	Recommendations will be included in document.	JM - 5/8/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
27		PCN 17861	Steve Salwei	Office of Transportation Programs	1. Yes 2. Alternative 1-c 3. NA 4. F.	Recommendations will be included in document.	JM - 5/8/2014
28		PCN 20294	Steve Salwei	Office of Transportation Programs	1. Yes 2. Alternative 2-b 3. HBP Shoulders 4. Yes	Recommendations will be included in document.	JM - 5/8/2014
29		PCN 20295	Steve Salwei	Office of Transportation Programs	1. Yes 2. Alternative 3-c 3. HBP Shoulders	Recommendations will be included in document.	JM - 5/8/2014
30		PCN 17861	Wayde Swenson	Office of Operations	1. Yes 2. 1d 3. B 4. B	Recommendations will be included in document.	JM - 5/8/2014
31		PCN 20294	Wayde Swenson	Office of Operations	1. Yes 2. 2b 3. B 4. No – I believe we will be having a statewide project for IT items.	Recommendations will be included in document. item 4 comment is noted.	JM - 5/8/2014
32		PCN 20295	Wayde Swenson	Office of Operations	1. Yes 2. 3d, - I selected the Major Rehab for the section from the Bridge to US 85 to keep the corridor width consistent (35' to 36'). If the district felt that keeping the corridor width consistent is not an issue I would select 3c. 3. B	Recommendations will be included in document.	JM - 5/8/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
33		General	Scott Zainhofsky	Planning Division	The contractor will need railroad flagging and railroad protective liability insurance (RRPLI) when working within 25-feet of the tracks.	Comment noted. This requirement will be included in the notes of the project plans.	JM - 5/8/2014
34		General	Scott Zainhofsky	Planning Division	The P/AM Division ITS Deployment Plan recommends an automatic traffic recorder (ATR) installation on ND 200 at RP 2.0. It would be significantly less disruptive to the traveling public if this were installed with the roadway project rather than as a stand-alone project. Therefore the Division recommends installing this equipment as part of this project.	An ATR will be added to the project at RP 2.0 and stated such in the appropriate project section (PCN 17861).	JM - 5/8/2014
35		PCN 17861	Scott Zainhofsky	Planning Division	Question #1 – Yes #2 – C, based on the latest modified dTIMS analysis #3 – B, based on the fact that this route is, currently, proposed to be on the highest level strategic freight system ("Critical Rural Freight Corridor"). #4 – B, based on the safety and long-term operational advantages offered by roundabouts.	Recommendations will be included in document.	JM - 5/8/2014
36		PCN 20294	Scott Zainhofsky	Planning Division	Question #1 – Yes #2 – B, see above #3 – B, see above	Recommendations will be included in document.	JM - 5/8/2014
37		PCN 20295	Scott Zainhofsky	Planning Division	Question #1 – Yes #2 – D, based on the latest modified dTIMS analysis #3 – B, see above	Recommendations will be included in document.	JM - 5/8/2014
38		PCN 17861	Phil Murdoff	Construction Division	I recommend the roundabout for the intersection of 58 and 200.	Recommendations will be included in document.	JM - 5/8/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
39		General	Phil Murdoff	Construction Division	Has the department considered a mill and overlay option? If not - we should. Advantages of milling include; improves ride, creates a uniform surface to pave on, provides material to use as RAP – thus reducing the overall project cost (less virgin aggregate needed, less asphalt cement needed – which more than offset cost of milling), reduces the increase in roadway profile – which lessens the issues of lane and shoulder widths.	Milling and overlay was considered in the scoping phase.	JM - 5/8/2014
40		General	Mike Kisse	Maintenance Division	Justin, I checked the most recent map I have of requests from HP. There is a HP turnout requested on ND 200 at/near the Montana border.	Comment is noted. Turnout will be included in the build alternatives.	JM - 5/8/2014
41		PCN 17861	Roger Weigel	Design Division	1.Yes 2.C 3.A 4.B	Recommendations will be included in document.	JM - 5/8/2014
42		PCN 20294	Roger Weigel	Design Division	1.Yes 2.B 3. A 4.Yes	Recommendations will be included in document.	JM - 5/8/2014
43		PCN 20295	Roger Weigel	Design Division	1.Yes 2.C 3.A	Recommendations will be included in document.	JM - 5/8/2014
44		PCN 17861	Clayton Schumaker	Materials & Research Division	Recommend Alternative 1-c. Recommend for ND 200 and ND 58 the intersection roundabout.	Recommendations will be included in document.	JM - 5/8/2014
45		PCN 20294	Clayton Schumaker	Materials & Research Division	Recommend Alternative 2-b with HBP shoulders. Recommend the ITS camera installation.	Recommendations will be included in document.	JM - 5/8/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
46		PCN 20295	Clayton Schumaker	Materials & Research Division	Recommend Alternative 3-c.	Recommendations will be included in document.	JM - 5/8/2014
47		PCN 17861	Walt Peterson	District	1. Yes 2.D 3.B 4. B, with extended concrete section	Recommendations will be included in document.	JM - 5/8/2014
48		PCN 20294	Walt Peterson	District	1. Yes 2. B 3. B 4. Yes	Recommendations will be included in document.	JM - 5/8/2014
49		PCN 20295	Walt Peterson	District	1. Yes 2. C 3. B	Recommendations will be included in document.	JM - 5/8/2014
50		General	Walt Peterson	District	With the volume of trucks on our highways, we can lo longer maintain an aggregate shoulder.	Comment noted.	JM - 5/8/2014
51		PCN 17861	Walt Peterson	District	Railroad tracks located near Montana border: consider adding a truck stopping lane. There is more development of the rail loadings to the north of Fairview which will put more trains on this crossing in the future.	In looking at the the preliminary design, doesn't look like there is enough room for the truck stopping lane and an acceleration lane with the rail crossing so close the the montana border and the ND 200 / ND 58 Intersection.	JM - 5/8/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
52		PCN 17861	Walt Peterson	District	Roundabout at the jct. of ND 200/ND 58: I had some conversation with Montana DOT and they are looking at a bypass around Fairview. Their initial thoughts have been to go south at our intersection, around town to the south, and connect back to their highway. Fairview is asking them to consider a railroad grade separation south of Fairview as part of this project. I do not know how this would affect our highway system, if we would reroute ND 200, or add to ND 58, I don't think Montana would own the road, and I don't think McKenzie County would want to continue to maintain. Guess we just design the roundabout accordingly.	The roundabout will function nearly the same if more traffic were heading south rather than west.	JM - 5/8/2014
53		PCN 17861	Walt Peterson	District	Traffic signals at jct: in addition to the cons about a signal, there is always the height restriction and the numerous times that too high loads have torn down signals.	"High loads damaging low signals" will be added to cons for Traffic Signal Alternative.	JM - 5/8/2014
54		PCN 17861 PCN 20295	Tim Scwagler	Bridge Division	Bridge Input Memos have been prepared. Append by reference.	The memos were reviewed and pertinent information was included in the body of the CatEx Document. The memos were included in the list of documents appended by reference.	JM - 5/8/2014
55	5-EIC	TE Species	Paul Moch	NDDOT Nepa Reviewer	19.2.1 will need to be marked 'yes' upon completion of correspondence and concurrence from FHWA. Please see NDDOT Section 7 ESA guidance document on reference and forms page for additional information needing to be submitted for an FHWA 'No Effect' determination.	19.2.1 will be marked 'yes upon completion of correspondance and concurrence from FHWA. Supporting information will be provided to the NDDOT.	JM - 6/30/2014
56	4-EIC	Social	Paul Moch	NDDOT Nepa Reviewer	For Structural Improvement project, 16.3 is marked 'no'. Is there a reason for the discrepancy from other options? Please review and answer appropriately.	Structural Improvement project, 16.3 will be modified and be consistent with the other projects.	JM - 6/30/2014

Comment Number	Page	Section	Commentor	Affiliation	Comment	Response/Clarification/Action	Verified
57	6-EIC	Wetlands	Paul Moch	NDDOT Nepa Reviewer	FHWA will not issue a CatEx until we have resolved issue 23. We will need to complete this section with a completed wetland table and conceptual mitigation plan prior to the issuance of a CatEx. If for timing purposes a conditional CatEx should be pursued, work through J. Schlosser to move project forward.	Additional field work data has been collected and we are in the process of preparing an addendum to the wetland study which will modify the wetland tables included in the CatEx. A conditional CatEx will be discussed with Schlosser.	JM - 6/30/2014
58		SOV	Paul Moch	NDDOT Nepa Reviewer	Was the NRCS Farmland Conversion Form Completed per their request?	NRCS Farmland Conversion Form was submitted 5-23-14.	JM - 6/30/2014
59		Appendix B	Paul Moch	NDDOT Nepa Reviewer	For Whooping Crane and Pallid Sturgeon, add 'Additional Documentation Included' and then submit additional documentation to be submitted to FHWA for their determination of 'No Effect' or the need for a BA.	Table will be updated and additional documentation provided to the NDDOT.	JM - 6/30/2014
60		Appendix B	Paul Moch	NDDOT Nepa Reviewer	Add a 'No Effect' to the Dakota Skipper. The blacked out box is for Candidate species and will be updated on Reference and Forms in the future. However, for now, the USFWS would like us to make an Affect determination for Proposed listed species.	Table will be updated.	JM - 6/30/2014
61		Appendix C	Paul Moch	NDDOT Nepa Reviewer	Round impacts to hundredths or two places after the decimal. Any impacts to Artificial wetlands should have 'N' indicated under EO 11990. Also, any impacts greater than 0.10 should have pending under USACE Mitigation required.	Table will be updated.	JM - 6/30/2014

3rd Review: February 18, 2015
2nd Review: May 22, 2014
Received: April 9, 2014
Reviewed: April 21, 2014

State Line to Jct US 85 – Documented CatEx
SS-7-200(014)000/17861 : SS-7-200(015)003/20294 : SS-7-200(016)004/20295
Principal Author – Civil Science
NEPA Reviewer – Paul J Moch, NDDOT ETS

Page	Section	Comment	Response / Clarification / Action	Verified
Cert.		Include Mr. Meacham's PE Stamp.	Included	JM, 2-19-15
3	Purpose and Need	The existing Purpose should be moved to the need. The existing need items should be fit into the categories currently in the Purpose Statement. The new purpose statement is to address issues and roadway deficiencies associated with this roadway corridor identified in the *Need* for this project (see last sentence under roadway deficiencies). The purpose is also to extend the useful life of the roadway.	Purpose and Need paragraphs modified	JM, 2-19-15
3	Purpose Paragraph 1	Project Status would fit better under Project Description or Project Timeline. It also needs to be updated to include work in 2015.	Project status and timeline added to project description section.	JM, 2-19-15
5	History	What year was the bridge constructed? Please include.	Date added to Table 2	JM, 2-19-15
8	Roadway Alignment	These substandard alignments should be noted in the *Need* for the project.	Note added	
21	ITS Camera	Remove ITS Camera option from document.	Removed	JM, 2-19-15
25	a.	We need to state which alternatives require a detour. Include in this discussion as well as the environmental impact checklist.	Statement added	JM, 2-19-15
25	WZTC	This document states that the WZTC could change as a result of final design efforts. We need to disclose a more final traffic control plan. Minor adjustments in final design are acceptable; however, the impacts associated with potential detours/bypasses must be included in the environmental documentation of alternatives.	WZTR section was updated.	JM, 2-19-15
25	WZTC	Was any public involvement or landowner contacts made in regard to impacting or closing access to fields/residents? The way this is	There has been no public involvement or landowner	JM, 2-19-15

		written it would indicate that further public coordination is required.	contacts made. None is expected.	
25	PCN 17861	The temporary bypass road and detour needs to be included in this document and impacts associated disclosed.	Bypass road / detour verbage added.	JM, 2-19-15
26	c.	The improvements to 161st avenue should be disclosed as part of one of the intersection alternatives. Which alternative, if selected, will require the maintenance agreement?	This section was modified	JM, 2-19-15
26	Irrigation	Revise to disclose impacts to irrigation canals. Here is reads as if only one extension of an irrigation box will occur.	Section modified	JM, 2-19-15
26	Utilities	Why will utility coordination continue into design phase if no impacts are anticipated? FHWA requires that we determine and disclose these impacts in the NEPA review.	Impacts have been added	JM, 2-19-15
27	SWC	If a well is affected, is contacting the Water Appropriations Division the only requirement? What else would have to happen? If this is a potential issue, it would be best to disclose which alternatives could impact wells.	Paragraph modified	JM, 2-19-15
28	Summary of Wetland Impacts	These values do not match impacts denoted in tables of Appendix C. Revise to meet figures used in PSE and 404 Permit application.	The values match when adding in the impacts from the roundabout. All tables and figures should match.	JM, 2-19-15
29-30-38	Tables and Decisions	Remove ITS Camera Installation.	Removed	JM, 2-19-15
EIC – 3	EIC	What R/W is needed from Railroad? This is not discussed in executive summary.	No R/W is need. This is clarified in the EIC.	JM, 2-19-15
EIC – 3	EIC – 14	The canals or 'Historic Sites' are no longer considered 4(f). We need to document in environmental issues that since canals are non-contributing features of the historic site, they were deemed non-4(f) properties. Also, there will be no temporary impacts to Section 4(f) properties and therefore the EIC needs to be revised accordingly.	Section 14 modified to no longer reflect temporary 4(f) impacts.	JM, 2-19-15
EIC – 5	EIC 18	Checklists show a 1.5 mile reroute for 161st avenue. If this is in fact required, please show this detour and for which alternative it is associated with in the description of alternatives.	Section updated as well as roundabout options in report	JM, 2-19-15
EIC – 5	EIC 18	What provisions are being made for traffic dependent businesses? Normal Work Zone Traffic Control would not constitute provisions unless they are specific to providing a business access for through traffic.	Document updated to describe that business accesses will be coordinated with owner.	JM, 2-19-15

EIC – 5	EIC 19	19.2.2 please answer No.	Change made	JM, 2-19-15
EIC – 6	EIC 23	Identify the location of the proposed mitigation in 23.2.1.	Location is noted	JM, 2-19-15
EIC – 6	EIC 26	Add Bureau of Reclamation's Acknowledgment of Easement Crossing.	Added	JM, 2-19-15
	SOV	Response from Lower Yellowstone REA indicates major utility conflicts with roundabout option. We should evaluate the extent of these impacts in the utility discussion and the required impact mitigation.	These impacts are explained	JM, 2-19-15
	SOV	SWC identifies a need for a sovereign land permit. Include in environmental issues discussion that one is not needed unless work occurs beneath the ordinary high water mark of the Yellowstone River.	This statement is added	JM, 2-19-15
	SOV	NRCS Farmland Conversion impact rating form is indicative of permanent right of way being needed. This does not match executive summary or EIC. Please review.	A section was added in the Environmental Issues section.	JM, 2-19-15
	Appendix C	An approved JD was issued by the USACE for wetland 18. See attachment in email.	This was included.	JM, 2-19-15
	Appendix C	USACE does not require mitigation for impacts <0.1 acre. Wetland 17 impacts should be moved to NDDOT Mitigation bank Vollrath 16/17.	Added to table	JM, 2-19-15
	Appendix C	Table 1 in Mitigation plan needs to be updated.	Updated	JM, 2-19-15

3rd Review: February 18, 2015
2nd Review: May 22, 2014
Received: April 9, 2014
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State Line to Jct US 85 – Documented CatEx
SS-7-200(014)000/17861 : SS-7-200(015)003/20294 : SS-7-200(016)004/20295
Principal Author – Civil Science
NEPA Reviewer – Paul J Moch, NDDOT ETS

Page	Section	Comment	Response / Clarification / Action	Verified
Cert.		Include Mr. Meacham's PE Stamp.	Included	JM, 2-19-15
3	Purpose and Need	The existing Purpose should be moved to the need. The existing need items should be fit into the categories currently in the Purpose Statement. The new purpose statement is to address issues and roadway deficiencies associated with this roadway corridor identified in the *Need* for this project (see last sentence under roadway deficiencies). The purpose is also to extend the useful life of the roadway. ***Please revise purpose statement to read "The purpose of the proposed project is to address the pavement deterioration and extend the lifetime of the pavement structure. Additionally, the project will address the needs identified in this document for the ND 200 from state line to junction of US 85 corridor.***	Purpose and Need paragraphs modified This statement replaced the paragraphs in the Purpose section. The 3 paragraphs from the Purpose was relocated to the Need section. This maintains the same page numbering.	JM, 2-19-15 JM, 2-24-15
3	Purpose Paragraph 1	Project Status would fit better under Project Description or Project Timeline. It also needs to be updated to include work in 2015.	Project status and timeline added to project description section.	JM, 2-19-15
5	History	What year was the bridge constructed? Please include.	Date added to Table 2	JM, 2-19-15
8	Roadway Alignment	These substandard alignments should be noted in the *Need* for the project.	Note added	
21	ITS Camera	Remove ITS Camera option from document.	Removed	JM, 2-19-15
25	a.	We need to state which alternatives require a detour. Include in this discussion as well as the environmental impact checklist.	Statement added	JM, 2-19-15
25	WZTC	This document states that the WZTC could change as a result of final design efforts. We need to disclose a more final traffic control plan.	WZTR section was updated.	JM, 2-19-15

		Minor adjustments in final design are acceptable; however, the impacts associated with potential detours/bypasses must be included in the environmental documentation of alternatives.		
25	WZTC	Was any public involvement or landowner contacts made in regard to impacting or closing access to fields/residents? The way this is written it would indicate that further public coordination is required.	There has been no public involvement or landowner contacts made. None is expected.	JM, 2-19-15
25	PCN 17861	**The temporary bypass road and detour needs to be included in this document and impacts associated disclosed*. FHWA will need to see the impacts associated with the temporary bypass. Is it within NDDOT R/W? Is it on existing road? Will fill be placed in wetlands or waters of the US/State?***	Bypass road / detour verbage added. Roundabout Temporary Bypass figure 8A was added (additional verbage is on page 14). An explanation for the traffic control road adjacent to the mainline has been add to page 25.	JM, 2-19-15 JM, 2-24-15
26	c.	The improvements to 161st avenue should be disclosed as part of one of the intersection alternatives. Which alternative, if selected, will require the maintenance agreement?	This section was modified	JM, 2-19-15
26	Irrigation	Revise to disclose impacts to irrigation canals. Here is reads as if only one extension of an irrigation box will occur.	Section modified	JM, 2-19-15
26	Utilities	Why will utility coordination continue into design phase if no impacts are anticipated? FHWA requires that we determine and disclose these impacts in the NEPA review. ***Revise wording to remove sentence 2. MAP 21 requires that we know utility conflicts prior to environmental approval. Therefore, we will use our preliminary utilities coordination as the basis of our NEPA evaluation.***	Impacts have been added Utility impacts have been described in more detail on page 26.	JM, 2-19-15 JM, 2-24-15
27	SWC	If a well is affected, is contacting the Water Appropriations Division the only requirement? What else would have to happen? If this is a potential issue, it would be best to disclose which alternatives could impact wells.	Paragraph modified	JM, 2-19-15
28	Summary of Wetland Impacts	**These values do not match impacts denoted in tables of Appendix C. Revise to meet figures used in PSE and 404 Permit application.**	Appendix C was revised to show the work option with the greatest number of permanent impacts for each alternative. This was noted in Appendix C. While	JM, 2-19-15 MB, 2-14-15

			making the changes I noticed that the option with the greatest number of permanent impacts didn't always have the greatest number of temporary impacts. I was not sure if this would be an issue or not and thought I might bring it to your attention	
29-30-38	Tables and Decisions	Remove ITS Camera Installation.	Removed	JM, 2-19-15
EIC – 3	EIC	What R/W is needed from Railroad? This is not discussed in executive summary.	No R/W is need. This is clarified in the EIC.	JM, 2-19-15
EIC – 3	EIC – 14	The canals or 'Historic Sites' are no longer considered 4(f**). We need to document in environmental issues that since canals are non-contributing features of the historic site, they were deemed non-4(f) properties.** Also, there will be no temporary impacts to Section 4(f) properties and therefore the EIC needs to be revised accordingly. ***EIC Item 14.1.4 should be 'No' on all EIC's.***	Section 14 modified to no longer reflect temporary 4(f) impacts The Environmental Issues section (page 27) was expanded. EIC was updated	JM, 2-19-15 JM, 2-24-15
EIC – 5	EIC 18	Checklists show a 1.5 mile reroute for 161st avenue. If this is in fact required, please show this detour and for which alternative it is associated with in the description of alternatives.	Section updated as well as roundabout options in report	JM, 2-19-15
EIC – 5	EIC 18	What provisions are being made for traffic dependent businesses? Normal Work Zone Traffic Control would not constitute provisions unless they are specific to providing a business access for through traffic.	Document updated to describe that business accesses will be coordinated with owner.	JM, 2-19-15
EIC – 5	EIC 19	19.2.2 please answer No.	Change made	JM, 2-19-15
EIC – 6	EIC 23	Identify the location of the proposed mitigation in 23.2.1.	Location is noted	JM, 2-19-15
EIC – 6	EIC 26	Add Bureau of Reclamation's Acknowledgment of Easement Crossing.	Added	JM, 2-19-15
	SOV	**Response from Lower Yellowstone REA indicates major utility conflicts with roundabout option. We should evaluate the extent of these impacts in the utility discussion and the required impact mitigation.** ***Any more information on this? This is an issue if a roundabout is selected and we do not have utility relocation and/or design modification in our NEPA document.***	These impacts are explained This is discussed in detail on page 26. We realigned the temporary roadway to avoid the major impacts.	JM, 2-19-15 JM. 2-24-15
	SOV	SWC identifies a need for a sovereign land permit. Include in	This statement is added	JM, 2-19-15

		environmental issues discussion that one is not needed unless work occurs beneath the ordinary high water mark of the Yellowstone River.		
	SOV	NRCS Farmland Conversion impact rating form is indicative of permanent right of way being needed. This does not match executive summary or EIC. Please review.	A section was added in the Environmental Issues section.	JM, 2-19-15
	Appendix C	An approved JD was issued by the USACE for wetland 18. See attachment in email.	This was included.	JM, 2-19-15
	Appendix C	USACE does not require mitigation for impacts <0.1 acre. Wetland 17 impacts should be moved to NDDOT Mitigation bank Vollrath 16/17.	Added to table	JM, 2-19-15
	Appendix C	Table 1 in Mitigation plan needs to be updated.	Updated	JM, 2-19-15
	Appendix C	***Other Waters table needs to disclose impacts.***	Replaced the other water table that did not show impacts with the water table shown in the environmental commitments section of the plan set that was submitted to NDDOT on February 24, 2015. This table includes adjustments to jurisdictional determinations and temporary/ permanent impacts	MB, 2-24-15
	Appendix C	***Table 1 in Mitigation plan needs to be updated. Impacts in wetland tables do not match mitigation shown in Table 1. For instance, 0.20 acres jurisdictional impacts to Wetland 1 is a 'Y' for mitigation under USACE. Include 0.20 acres for onsite mitigation acres. For Wetland 5, why is perm acres impact 0.39 when mitigation and impact on previous wetland table is 0.47. Wetland 6 mitigation and impacts do not match either. Please revise. Table shows worst case scenario as 1.06 ac. Anything mitigated at same wetland is 1:1 ratio. Wetland 17 should not include 1.70 acres of mitigation.***	Revised Table 1 in the conceptual mitigation plan to show mitigation strategy for worst case scenario and updated the USACE mitigation accordingly.	MB, 2-24-15

Appendix G
Historic Clearance

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

January 22, 2015

Ms. Valerie Barbie-Bluemle
Archaeologist, ETS Division
Dept of Transportation
608 East Boulevard Avenue
Bismarck, ND 58505-0700

ND SHPO Ref.: 14-5541 NDDOT 7-200(014)000 PCN 17861, 7-200(015)003 PCN 20294, 7-200(016)004 PCN 20295 in portions of [T151N R101W Sections 19 & 30] [T151N R102W Sections 19-30] [T151N R103W Sections 21-31] & [T151N R104W Sections 27-36], McKenzie County, North Dakota

Dear Ms. Bluemle,

We reviewed ND SHPO Ref.: 14-5541 NDDOT 7-200(014)000 PCN 17861, 7-200(015)003 PCN 20294, 7-200(016)004 PCN 20295 in portions of [T151N R101W Sections 19 & 30] [T151N R102W Sections 19-30] [T151N R103W Sections 21-31] & [T151N R104W Sections 27-36], McKenzie County, North Dakota and we concur with the determination of "No Historic Properties Affected" provided that this project takes place in the location and in the manner described in the documentation and that all borrow comes from an approved source.

Thank you for the opportunity to review this project. If you have any questions please contact Lisa Steckler, Preservation Planner at (701) 328-3577, e-mail lsteckler@nd.gov

Sincerely,

Claudia J. Berg
State Historic Preservation Officer
(North Dakota)

North Dakota Department of Transportation

Grant Levi, P.E.
Director

Jack Dalrymple
Governor

January 2, 2015

Ms. Claudia J. Berg
ND State Historic Preservation Officer
ND Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830

CONSULTATION ON NDDOT PROJECTS, STATE HIGHWAY SYSTEM

We are continuing consultation on the following project. This letter is intended to give you information on the proposed project and how we intend to proceed to meet our responsibilities under Section 106 of the National Historic Preservation Act of 1966 (as revised 1992). Further, it is intended to solicit your views pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969. We would appreciate your comment on the project and our planned cultural resource work, and discussion of any concerns you may have regarding historic properties which may be affected by the project.

SHPO Ref.: 14-5541
Lead Federal Agency: Federal Highway Administration
Project No. 7-200(014)000, PCN 17861
STATE LINE E TO YELLOWSTONE BRIDGE

7-200(015)003, PCN 20294
BRIDGE REPLACEMENT SEGMENT

7-200(016)004, PCN 20295
YELLOWSTONE BRIDGE TO JCT US 85
MCKENZIE COUNTY

Legal Location:

McKenzie County	T151N	R104W	Sections: 30, 29, 28, 27, 26, 25, 32, 33, 34, 35, 36
McKenzie County	T151N	R103W	Sections: 30, 31, 29, 28, 21, 22, 27, 23, 26, 24, 25
McKenzie County	T151N	R102W	Sections: 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30
McKenzie County	T151N	R101W	Sections: 19,20

Project Type: Major Rehabilitation Mine and Blend with Widening and HBP Surfacing. Upon
Purpose and Need: To improve traffic flow, and capacity, restore and rehabilitate pavement, and bring safety hardware up to current standards.
Project Description:
The previous correspondence addressed the major rehabilitation project, highway patrol turnaround, and culverts that were constructed to accommodate the Lower Yellowstone Irrigation and Canal System when this corridor of Highway 200 was first graded in 1956 and 1959.

The proposed roundabout was not included in the previous correspondence. Attached is the layout of the roundabout at the intersection of 200 & 58 with impacts and the description of the proposed roundabout. The impacts to this area are located in previously disturbed areas from construction of the highway and the canal system.

Drain 26 of 32MZ1174 (The Lower Yellowstone Irrigation and Canal System) runs north and south on the west side of Highway 58. The proposed roundabout design would include extending the existing culverts to accommodate the proposed roundabout. The culverts impacted were originally constructed by the NDDOT between 1956 and 1959 when this corridor was first graded. There are no unique structures on Drain 26 in the proposed project area (see attached photos). The Lower Yellowstone Irrigation and Canal System is a living system has undergone changes and continued alterations by the Lower Yellowstone Irrigation Project, the Bureau of Reclamation, farmers and landowners. We recommend that this section of the drain is a non-contributing element to 32MZ1174. The canal is 71.6 miles long, the laterals are 225 miles long, and the drains are 118 miles long.

It may be useful for future researchers to add the SOV letters from this project, and the attached documents to site form 32MZ1174 as an update.

APE: The Area of Potential Effect is the footprint of the project.
Justification: The proposed project is work to an existing highway.
Proposed Cultural Resource Work: None, a Class III Cultural Resource Inventory was completed by KLJ. The report was accepted in March 25, 2014 with SHPO Ref: 14-5541.
Other Consulting Parties: The NDDOT consults with the Tribal Consultation Committee on all projects as agreed upon in the Programmatic Agreement. Other various state, federal and local government agencies are being consulted.
Plan for Public Involvement: There is no plan for public involvement at this time.

We are requesting your continued concurrence with No Adverse Effect. If you need further information regarding the proposed project please contact me or the other NDDOT cultural resource staff.

Valerie J. Barbie-Bluemle

VALERIE J. BARBIE-BLUEMLE
CULTURAL RESOURCE SECTION, ETS, OPD, NDDOT

CC: Rick Hanson, BOR Archaeologist
Enclosure

Figure 1: Facing east on the NW side of Hwy 58 and Hwy 200.

Figure 2: ROW East side of Hwy 58 facing south and looking at Hwy 200.

Figure 3: Culvert. On the west side of Hwy 58, and north side of Hwy 200

Figure 4: Drain 26 facing south. On the west side of Hwy 58, and south side of Hwy 200.

Figure 5: Drain 26 facing north/nw. On the west side of Hwy 58, and south side of Hwy 200

Figure 6: Facing east. On the south side of Hwy 200, and east side of Hwy 58.

Figure 7: Facing west. On the north side of Hwy 200 looking toward Hwy 58.

Figure 8: Facing east. On the north side of Hwy 200, and east of Hwy 58.

Figure 9: Facing east from intersection of Hwy 58 and Hwy 200. On the north side of Hwy 200.

CIVIL SCIENCE
ENGINEERS - SURVEYORS - PLANNERS - SCIENTISTS

MEMO

DATE: December 31, 2104

TO: Steve Davies, USBR

FROM: Jay Meacham, P.E.

SUBJECT: Impacts to Lower Yellowstone Irrigation Project (LYIP) irrigation crossings of ND-200 due to NDDOT roadway improvements.

The NDDOT is making roadway improvements on ND-200 from the Montana State line east to US-85. Improvements include pavement improvements as well as shoulder widening. This 19.5 mile stretch consists of three projects.

7-200(014)000, PCN 17861 – State Line E to Yellowstone Bridge
7-200(015)003, PCN 20294 – Bridge Replacement Project
7-200(016)004, PCN 20295 – Yellowstone Bridge to Jct US-85

Only the first two projects impact LYIP culverts crossing ND-200. Roadway widening only occurs within the limits of the westerly project (Station 0+00(RP 0.0) to 158+49(RP 3.0)) and these are the only culverts that will require extensions. Below is a summary of the culvert crossings:

Station	RP	Size	Material	LYIP Designation	Impacts
19+36	0.37	36”	RCP	Drain 26	Extend both ends
40+53	0.77	24”	CSP	Lateral N1	Extend both ends
46+24	0.88	24”	CSP	Lateran N2	Extend north end, replace south headwall end with Manhole
67+50	1.28	10’x10’	RCBC	Drain 26	Extend both ends
73+12	1.38	24”	CSP	Lateral M2	Extend both ends
92+64	1.76	72”	RCP	Drain 27	Extend both ends
125+10	2.37	30”	CSP	Lateral M	Extend both ends
166+36	3.16	60”	RCP	Lateral K	No Impacts

RP – Reference Point, typically the mile marker, RCP – Reinforced Concrete Pipe, CSP – Corrugated Steel Pipe

The discharge at each crossing has been estimated and attached separately. A 25-year design discharge has been used for determining the draining flows for all culverts except for the 10’ x 10’ box culvert (Station 67+50) where a 50-year design discharge was used. The drainage flows have been added to an irrigation flow, provided by LYIP or by using a supply rate of 26.66 acres per cfs. The total culvert design discharge is provided. The capacity of each

pipe was determined using either the minimum pipe slope, inlet control or pressure conditions with a headwater depth at the entrance in the range of 1.2 to 1.5 water depth over pipe diameter ratio.

During ground survey, conducted in May 2014, the existing pipes and end conditions were evaluated. The following data has been taken from the survey notes:

Station	Size/Type	End	Pipe Condition	End Treatment	End Condition
19+36	36" RCP	North	Good	RCES	Good
		South	Good	RCES	Good
40+53	24" CSP	North	Good	Headwall	NA
		South	Good	Headwall	NA
46+24	24" CSP	North	Good	Headwall	NA
		South	Undetermined*	Headwall	NA
67+50	10x10 box	North	Good	Wingwalls	Good
		South	Good	Wingwalls	Good
73+12	24" CSP	North	Good	Headwall	NA
		South	Good	Headwall	NA
92+64	72" RCP	North	Good	RCES	Good
		South	Good	RCES	Good
125+10	30" CSP	North	Good	Headwall	Good
		South	Good	Headwall	Good
166+36	60" RCP	North	Good	None	NA
		South	Good	None	NA

* Existing pipe has been placed inside the pipe at the headwall

All of the headwalls are located within the roadway clear zone and due to safety considerations will be removed. The culverts will be extended on each end beyond the clear zone or to the toe-of-fill line. The pipe extensions will match existing pipe material. The proposed pipe slopes will be extended matching the existing slope (or minimum 0.3%). Drain 26 west of ND-58 has a pipe slope adverse to the flow direction (per topographic survey). The pipe extensions at this location will be constructed with a slope in the direction of flow. End sections will be installed at each proposed pipe extension. Rock riprap will be placed at each pipe end where a headwall was removed. The riprap will be placed on the channel floor and side slopes to a height of 0.5 feet above the estimated headwater or flow depth. The following table identifies the proposed length of culvert extension and end conditions:

Station	Size/Type	End	UP/DS	Extension Length	End Conditions
19+36	36" RCP	North	US	64’	RCES
		South	DS	172’	RCES
40+53	24" CSP	North	US	28’	CSES
		South	DS	12’	Traversable End Section
46+24	24" CSP	North	US	22’	CSES
		South	DS	None	Headwall removed and replaced with manhole
67+50	10x10 box	North	DS	TBD (28’+)	Box culvert extended and Wing walls replaced
		South	US	TBD (28’+)	Box culvert extended and Wing walls replaced
73+12	24" CSP	North	DS	17’	CSES
		South	US	16’	CSES
92+64	72" RCP	North	DS	20’	RCES
		South	US	40’	RCES
125+10	30" CSP	North	DS	16’	CSES
		South	US	17’	CSES
166+36	60” RCP	North	US	None	NA
		South	DS	None	NA

US – Upstream, DS – Downstream, RCES – Reinforced Concrete End Section, CSES – Corrugated Steel End Section

The only known easement for any of these irrigation crossings of ND-200 is a 60’ perpetual easement, east of the ND-58 roadway obtained by NDDOT to the Lower Yellowstone Irrigation District. A copy of the NDDOT Right-of-Way Plat for ND-58 showing this easement is attached.

Plat 13 (page 2) shows NDDOT acquiring an additional 17’ along the west side of ND 58 to bring the total to 50’ (west side). Also show is a 60’ perp. easement, westerly and contiguous to the new ROW line. This easement was from NDDOT to LYID No. 2.

Supplement to Plat 13 (page 3) includes the descriptions for the parcel (takes and easements) shown on Plat 13.

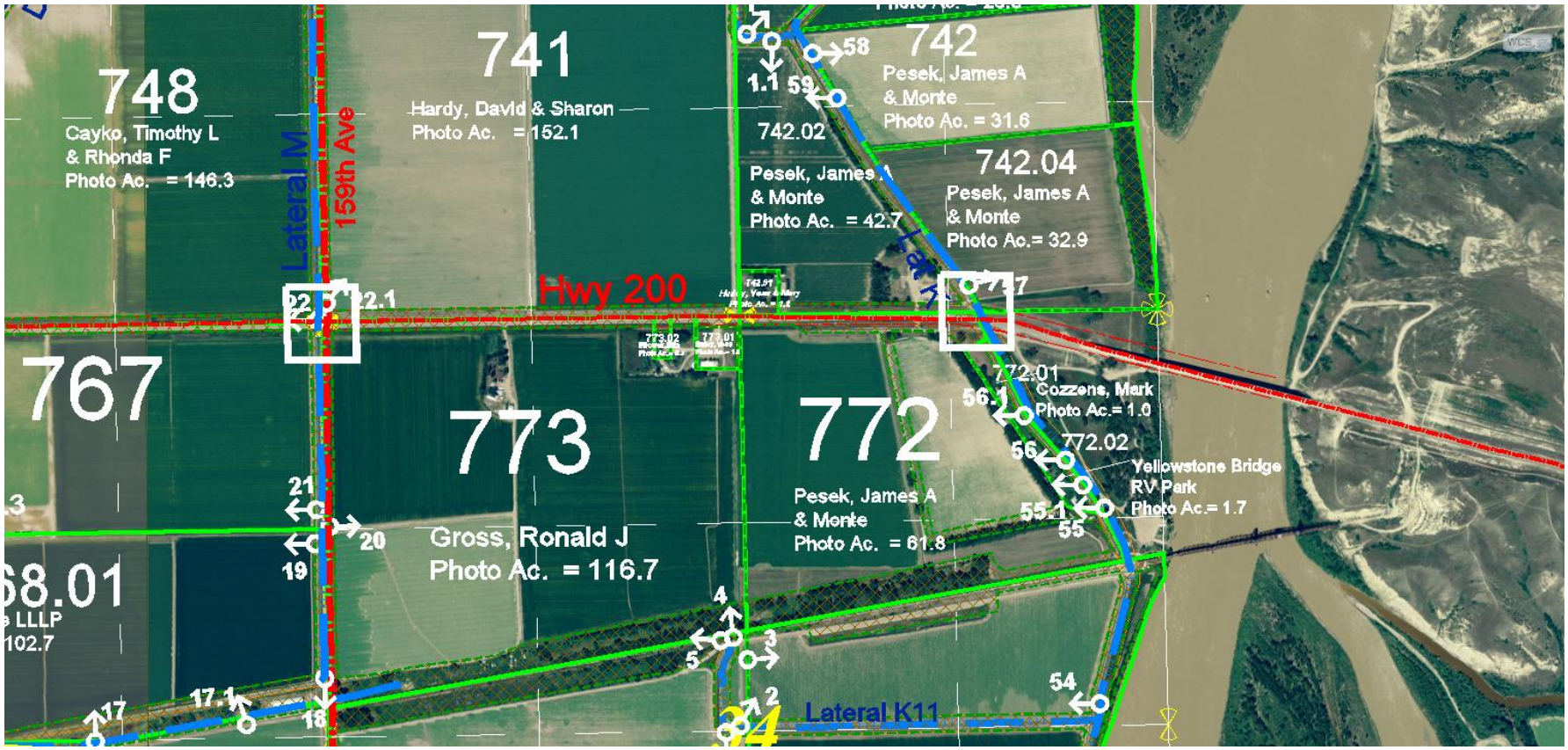
Plat 13A (page 4) shows the Highway ROW at the ND 58 / ND 200 intersection. Note that no easement is shown to the south of the intersection.

During construction, 2-way traffic will be maintained. The design is moving forward with an option to construct a temporary west bound road in the vicinity of the roadside ditch area to the north (within the right-of-way). This may require temporary pipe extensions of centerline culverts. The pipe extensions will remain in place if feasible; but if not the temporary pipe extensions will be removed as presented in the above discussion.

Attachments:

- Vicinity Maps
- Discharge Calculations
- Plan/Profile of Culvert Crossings (7)
- NDDOT 1994 Right-of-Way Plat for ND-58


469
Buxbaum, Robert H
Photo Ac. = 52.2
757
Northstar Transloading
Photo Ac. = 98.6
752
Karst, Justin
Photo Ac. = 74.4
753
Karst, Tim
Photo Ac. = 74.9
754.01
Hardy, David
& Sharon E
Photo Ac. = 72.31
754
Hardy, David & Sharon E
Photo Ac. = 79.1
747
Plainview Farms LLP
Photo Ac. = 144.0
Drain 26
Hwy 200
Lateral N1
Hwy 200
470
470.12
759.02
Karst, James H &
Donald & Richard
Photo Ac. = 70.2
763
Karst, Tim
Photo Ac. = 151.2
d26-4
762
Riedel, Lillian
Photo Ac. = 145.3
Lateral M2
Drain 27
Flynn, Charles R
& Julie Ann
Photo Ac. = 140.3
768
Klose Lands LLLP
Photo Ac. = 33.3
768.0
Klose Lands LLLP
Photo Ac.= 102.7
Lateral M4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Cayko, Timothy L
& Rhonda F
Photo Ac. = 146.3
741
Hardy, David & Sharon
Photo Ac. = 152.1
742
Pesek, James A
& Monte
Photo Ac. = 31.6
742.02
Pesek, James A
& Monte
Photo Ac. = 42.7
742.04
Pesek, James A
& Monte
Photo Ac.= 32.9
Lateral M
159th Ave
Hwy 200
767
773
Gross, Ronald J
Photo Ac. = 116.7
772
Pesek, James A
& Monte
Photo Ac. = 61.8
772.01
Cozzens, Mark
Photo Ac.= 1.0
772.02
Yellowstone Bridge
RV Park
Photo Ac.= 1.7
Lateral K11
68.01
LLLP
102.7

ND 200 - State Line to Bridge 12/31/14

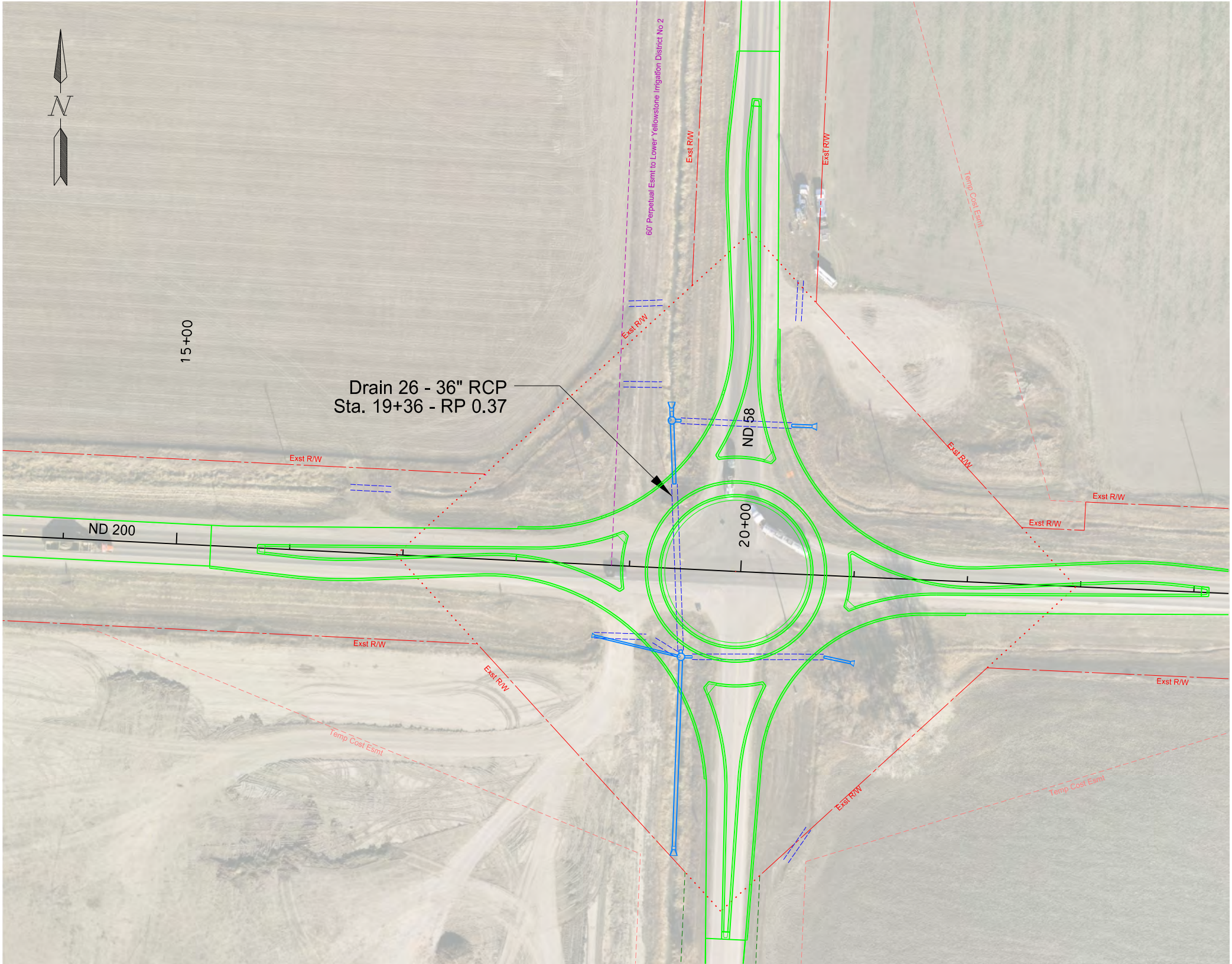
Discharge Calculations for Irrigation Ditches

				25 Year Drainage Flow (cfs) - (Except 67+50 - 50 yr)								LYIP Irrigation Flow (cfs)			Total Discharge (cfs)**	Estimated Capacity (cfs)	Pipe			
				Elevation*			Slope		Area		Regional	Irrigable	Supply	Irrigation						
Station	Size/Type	Extend	LYIP or Drainage	Upper	Lower	Length (ft)	(ft/mi)	%	(ac)	(mi^2)	Regression	Acres(ac)	(ac/cfs)	Flow			Slope	End	HW	Velocity
19+36	36" RCP	Yes	LYIP Drain 26	1907	1904	3527	4.49	0.09%	80	0.125	18.8	296.51	26.66	11.1	44.3	48.0	-0.0035	none	3.65 ft	6.3 cfs
40+53	24" CSP	Yes	LYIP Lateral N1		**No contributing offsite flow**							296.51	26.66	11.1	11.1	17.0	0.0000	headwall	2.64 ft	3.5 cfs
46+24	24" CSP	Yes	LYIP Lateral N2		**No contributing offsite flow**							57.00	26.66	2.1	2.1	17.0	0.0003	headwall	1.62 ft	0.8 cfs
67+50	10x10 box	Yes	LYIP Drain 26	1902	1894	5724	7.38	0.14%	219	0.342	59.9	add 25.6 + 11.1 @ 19+36 and 39.3 @ 24+94			135.9	708.0	0.0008	headwall	2.83 ft	4.8 cfs
73+12	24" CSP	Yes	LYIP Laterl M2		**No contributing offsite flow**							402.30	26.66	15	15	17	-0.0023	headwall	3.12 ft	4.8 cfs
92+64	72" RCP	Yes	LYIP Drain 27	1891	1890	4512	1.17	0.02%	90	0.141	14.1	348.10	26.66	13.1	27.2	210.0	0.0057	RCES	1.18 ft	6.9 cfs
125+10	30" CSP	Yes	LYIP Lateral M		**No contributing offsite flow**							680.0	26.66	25.5	25.5	28.0	-0.0029	headwall	3.49 ft	5.2 cfs
166+36	60" RCP	**No**	LYIP Lateral K		**Not Calculated**															

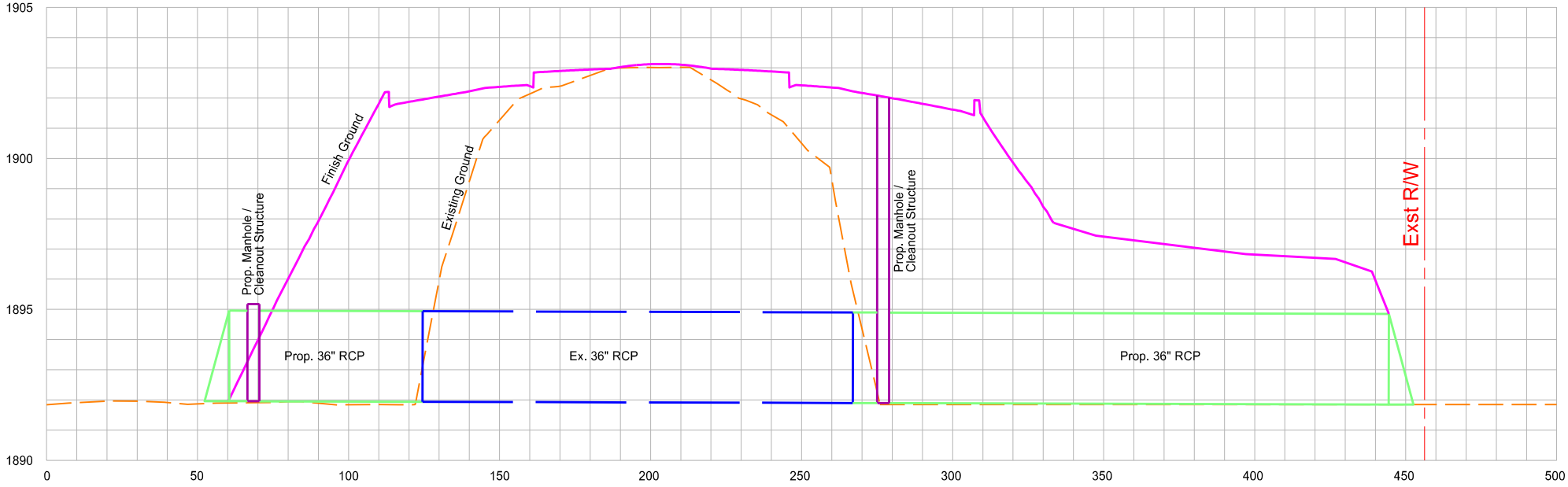
* Elevations from USGS. All fields have berms on the edges which are approximately 1 foot higher than field elevation. Fields are relatively flat. Flows leaving field have short (<50 feet) of steeper incline directly upstream of culverts.

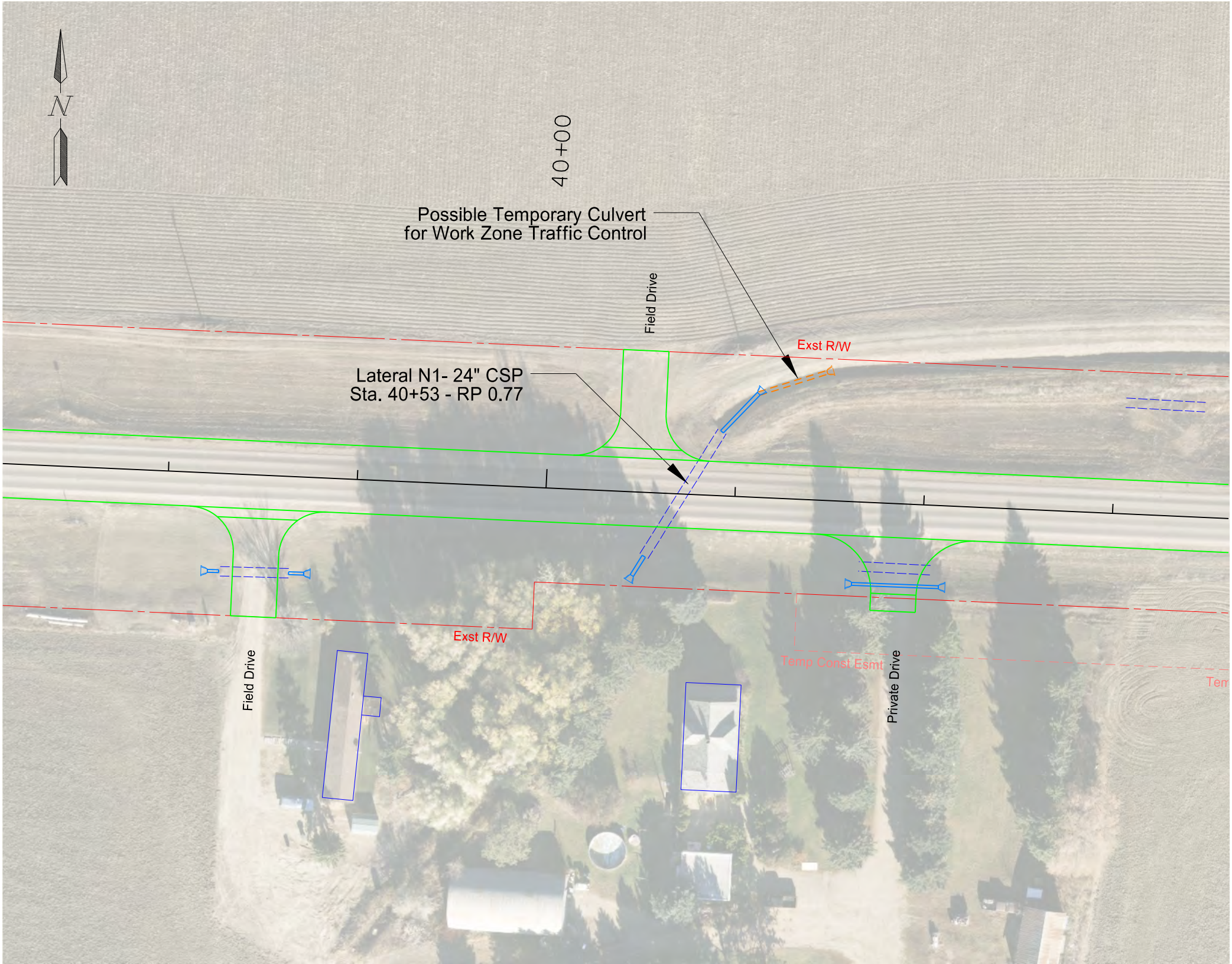
** Some flows may not be calculated for pipes not being extended

- For negative slopes, pressure pipe is assumed
- HW for pressure pipe uses headloss through pipe
- HW based upon FHWA HDS No. 5 or pipe flow depth

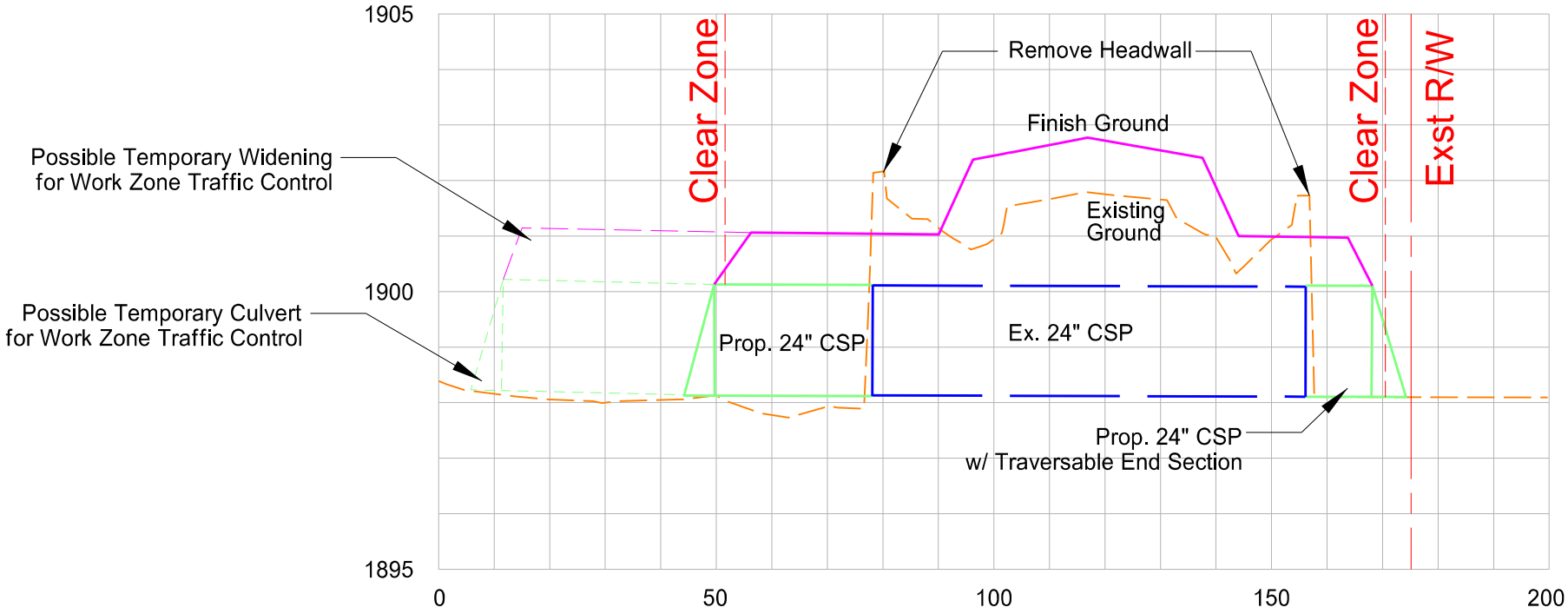

N
15+00
Drain 26 - 36" RCP
Sta. 19+36 - RP 0.37
ND 58
ND 200
20+00
60' Perpetual Esmt to Lower Yellowstone Irrigation District No 2
Exst R/W
Temp Cost Esmt

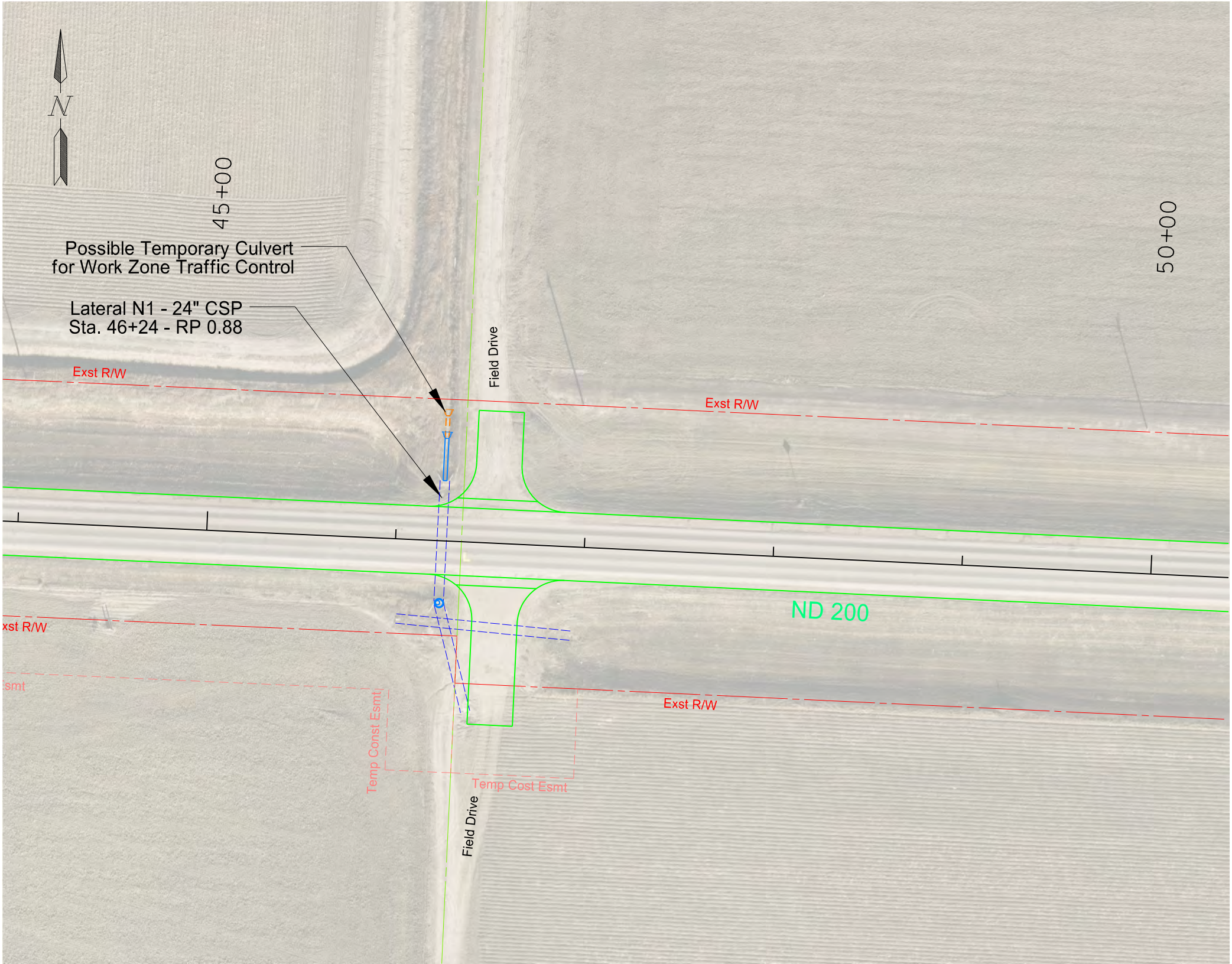
Drain 26 - 36" RCP - Sta. 19+36 - RP 0.37



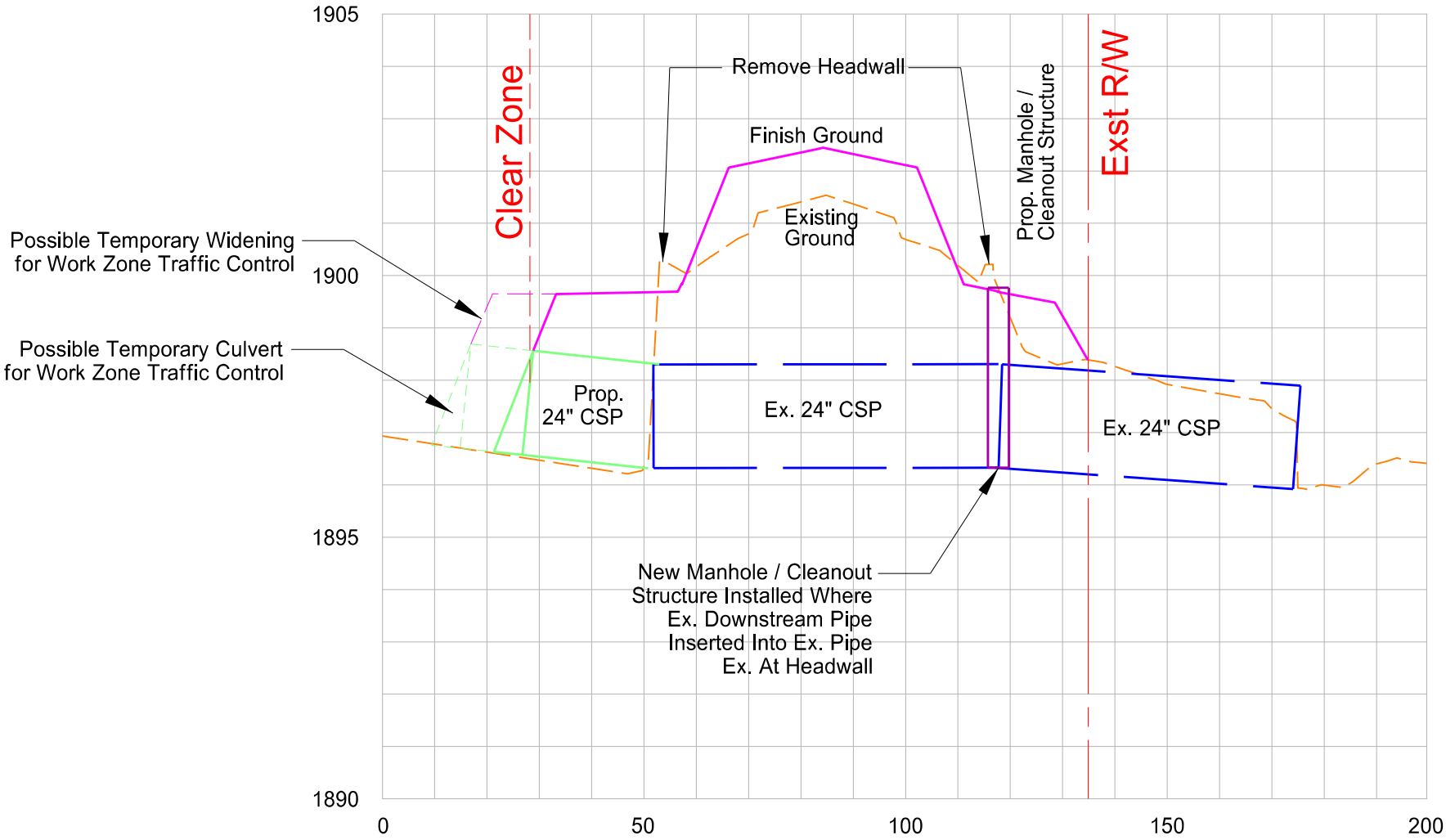

N
40+00
Possible Temporary Culvert
for Work Zone Traffic Control
Field Drive
Exst R/W
Lateral N1- 24" CSP
Sta. 40+53 - RP 0.77
Exst R/W
Field Drive
Temp Const Esmt
Private Drive

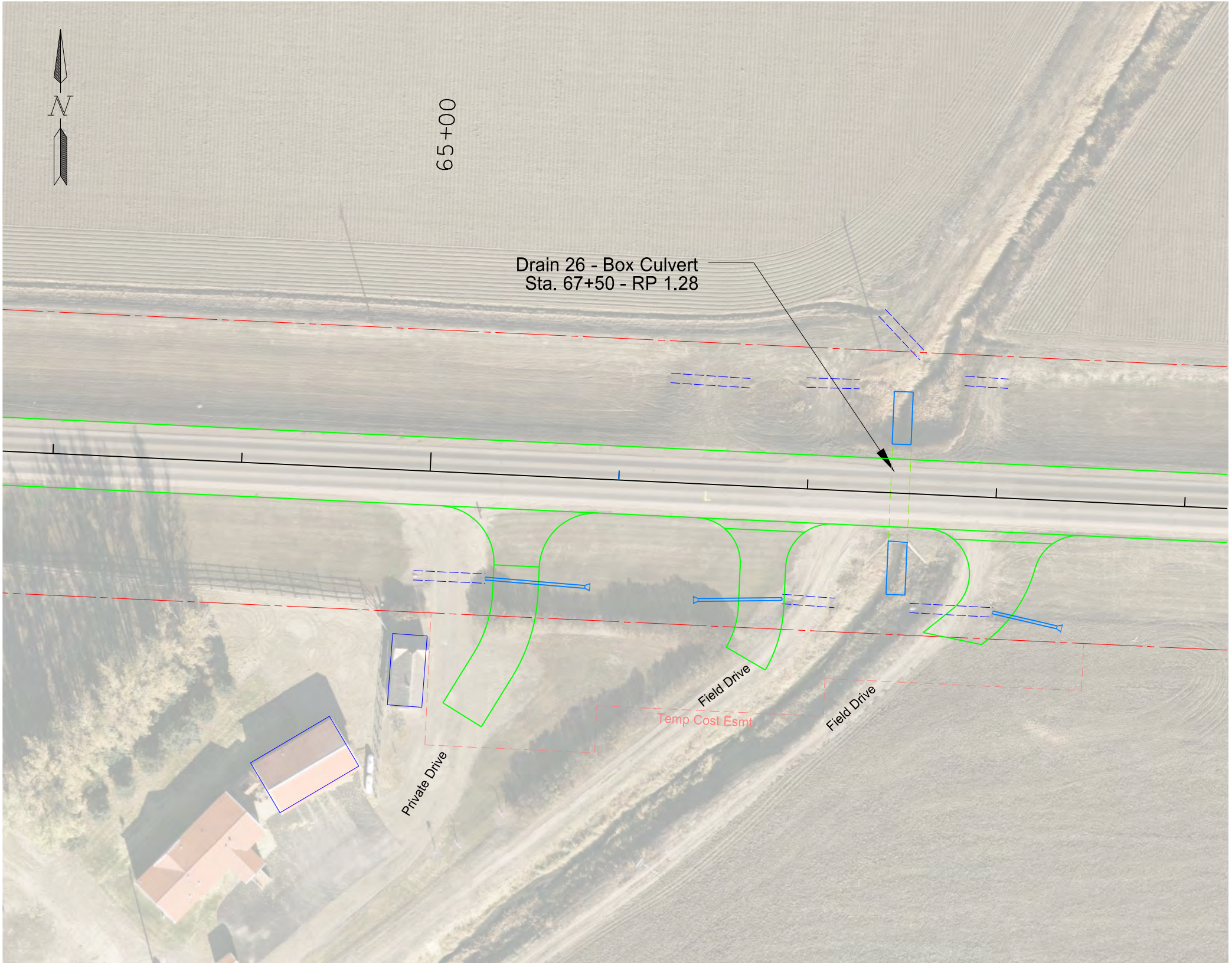
Lateral N1- 24" CSP - Sta. 40+53 - RP 0.77



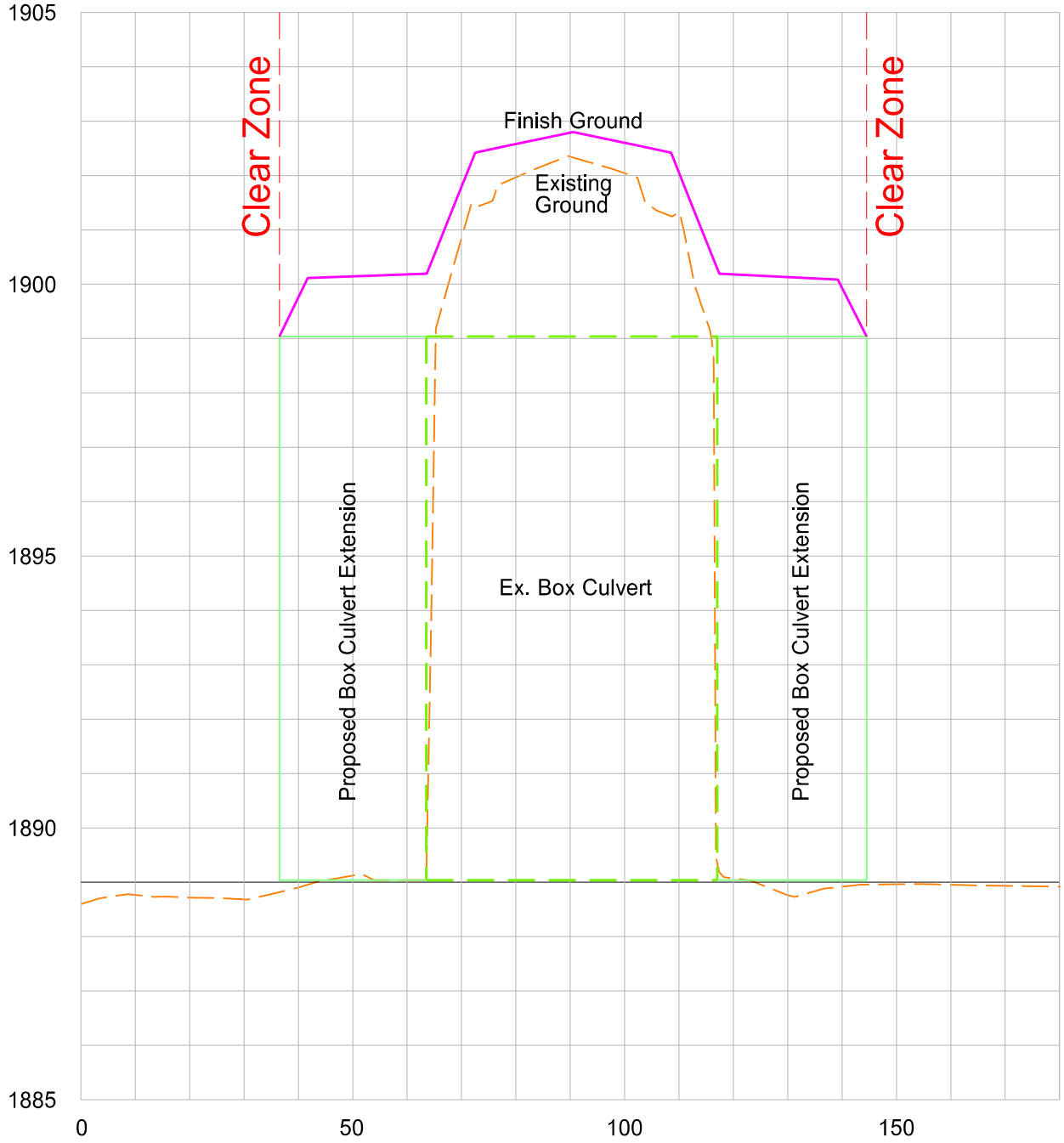

N
45+00
50+00
Possible Temporary Culvert
for Work Zone Traffic Control
Lateral N1 - 24" CSP
Sta. 46+24 - RP 0.88
Exst R/W
Field Drive
Exst R/W
ND 200
xst R/W
smt
Exst R/W
Temp Const Esmt
Temp Cost Esmt
Field Drive

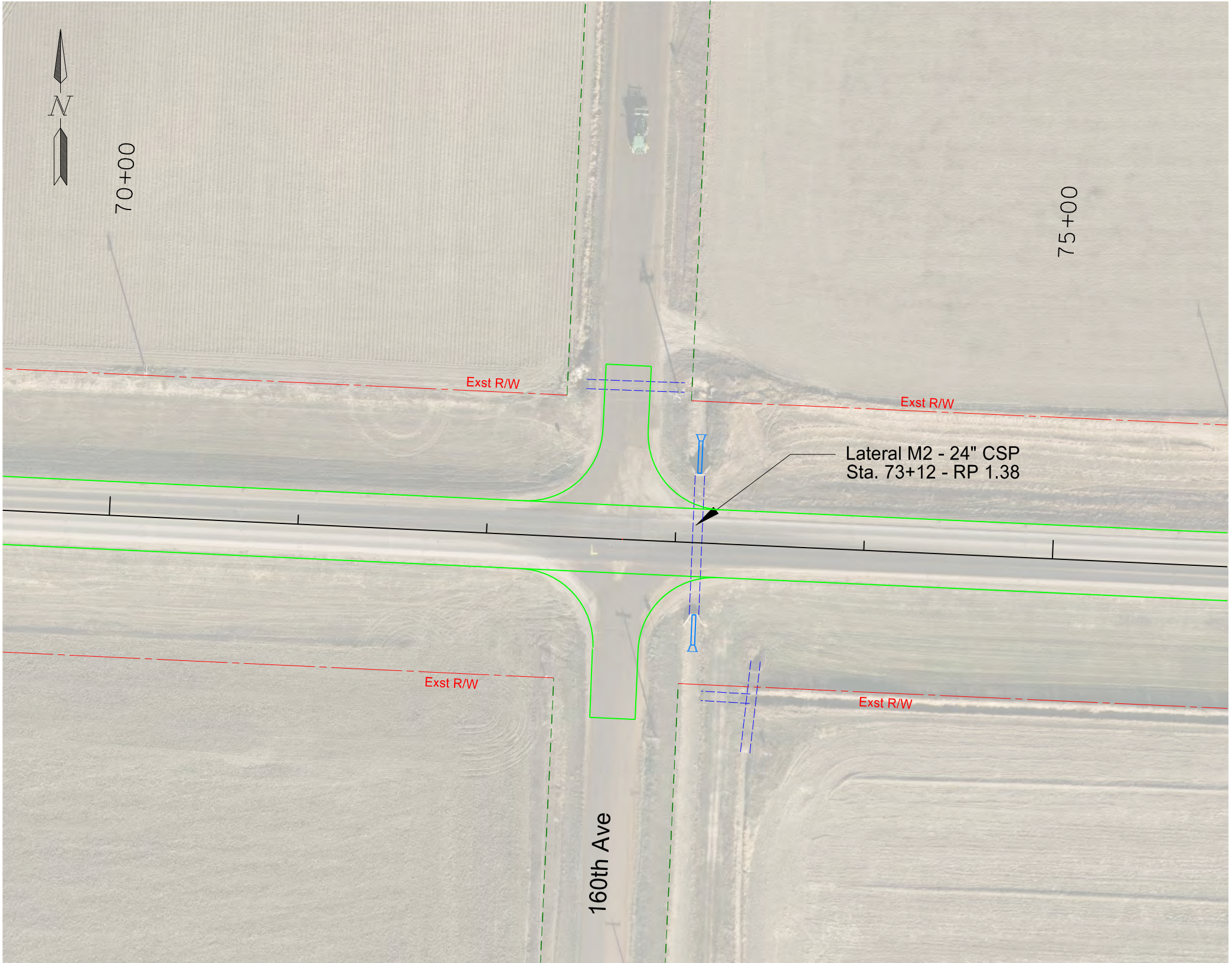
Lateral N1 - 24" CSP - Sta. 46+24 - RP 0.88



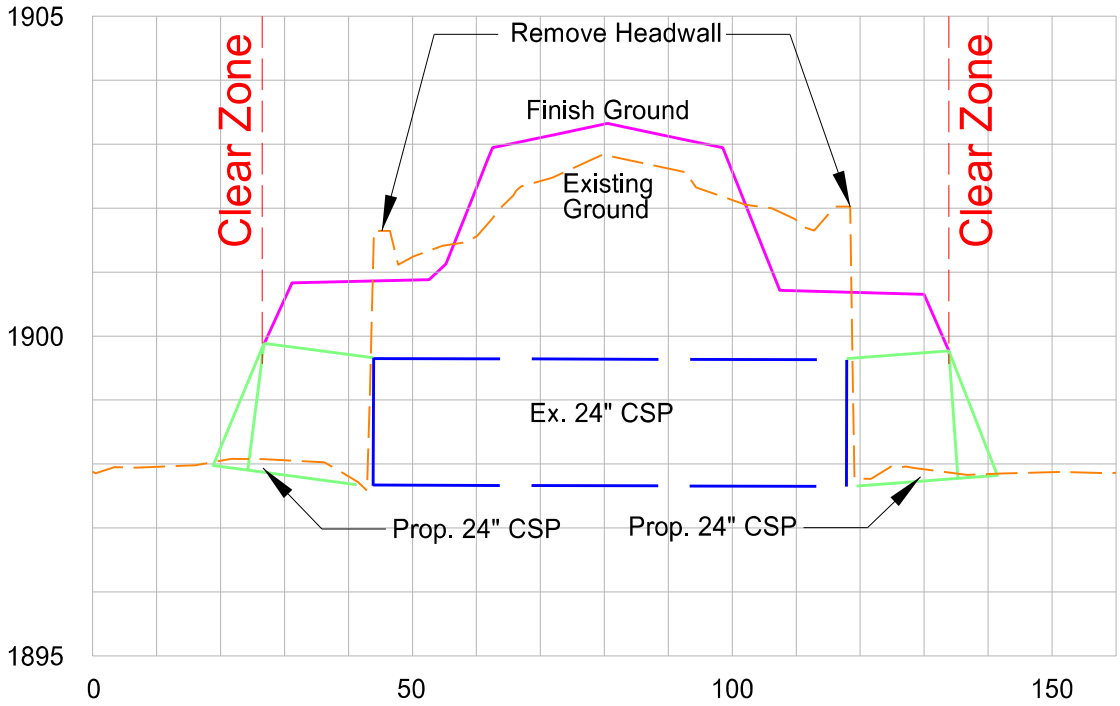

N
65+00
Drain 26 - Box Culvert
Sta. 67+50 - RP 1.28
Field Drive
Temp Cost Esmt
Field Drive
Private Drive

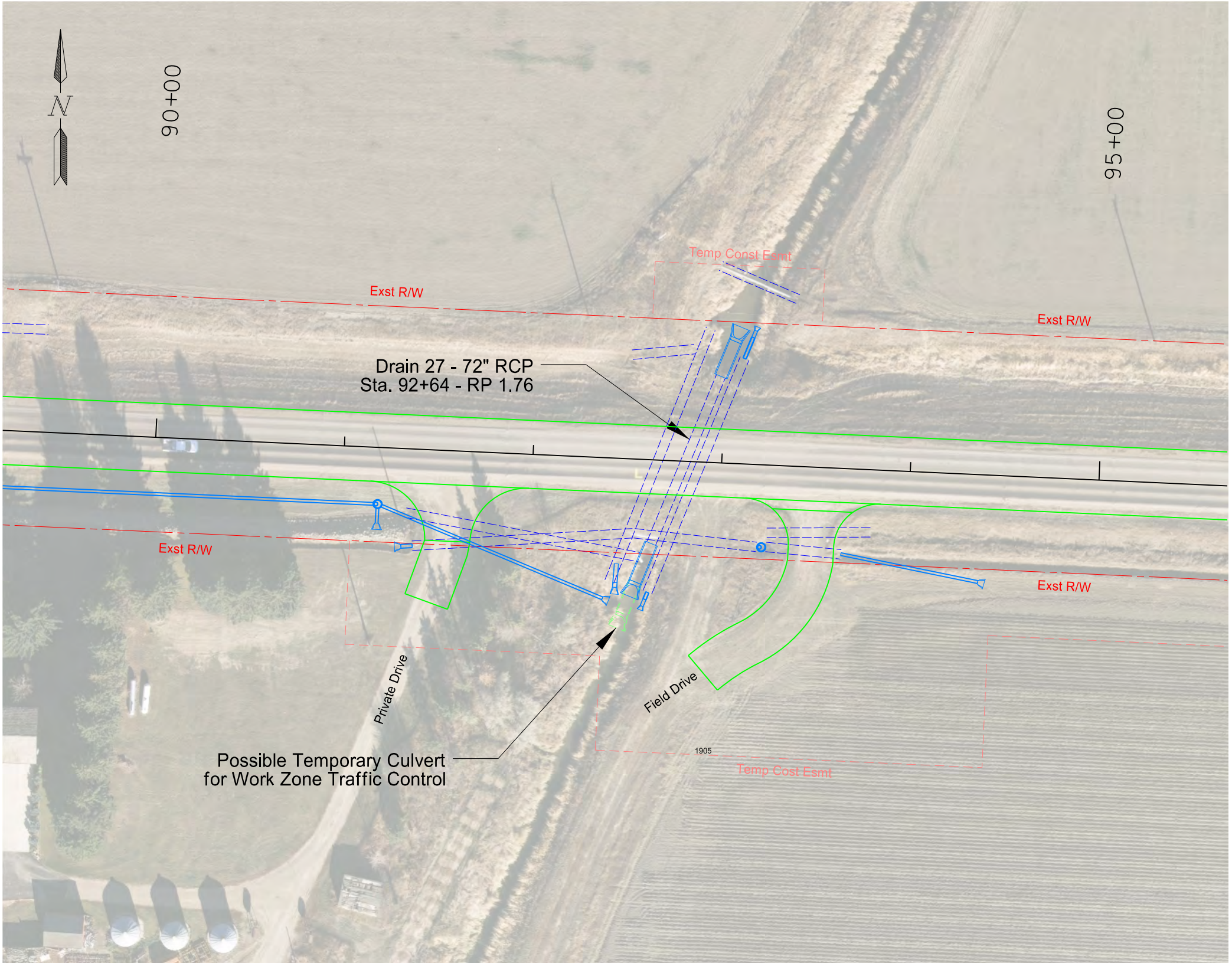
Drain 26 - Box Culvert - Sta. 67+50 - RP 1.28



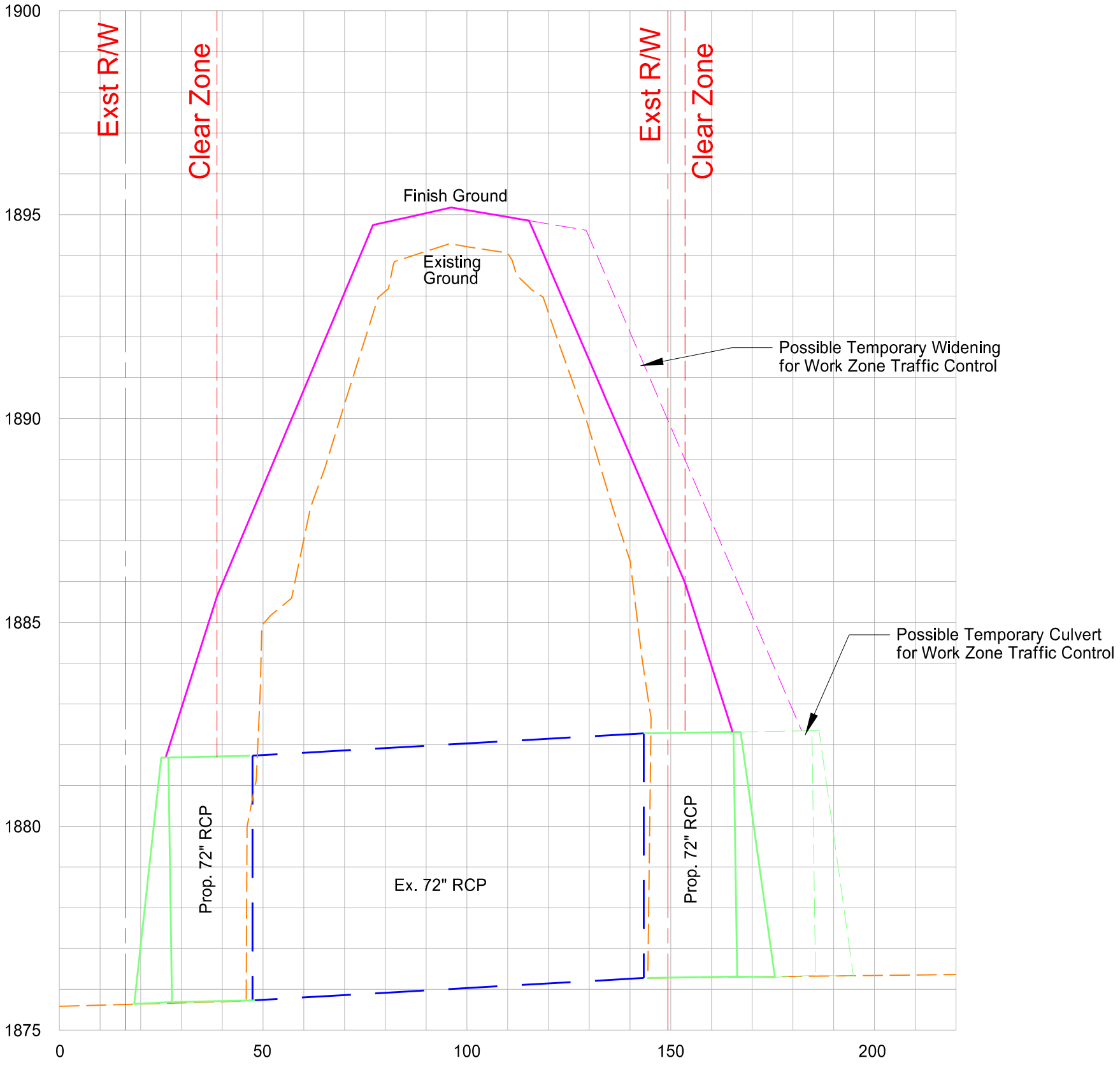

N
70+00
75+00
Exst R/W
Exst R/W
Lateral M2 - 24" CSP
Sta. 73+12 - RP 1.38
Exst R/W
Exst R/W
160th Ave

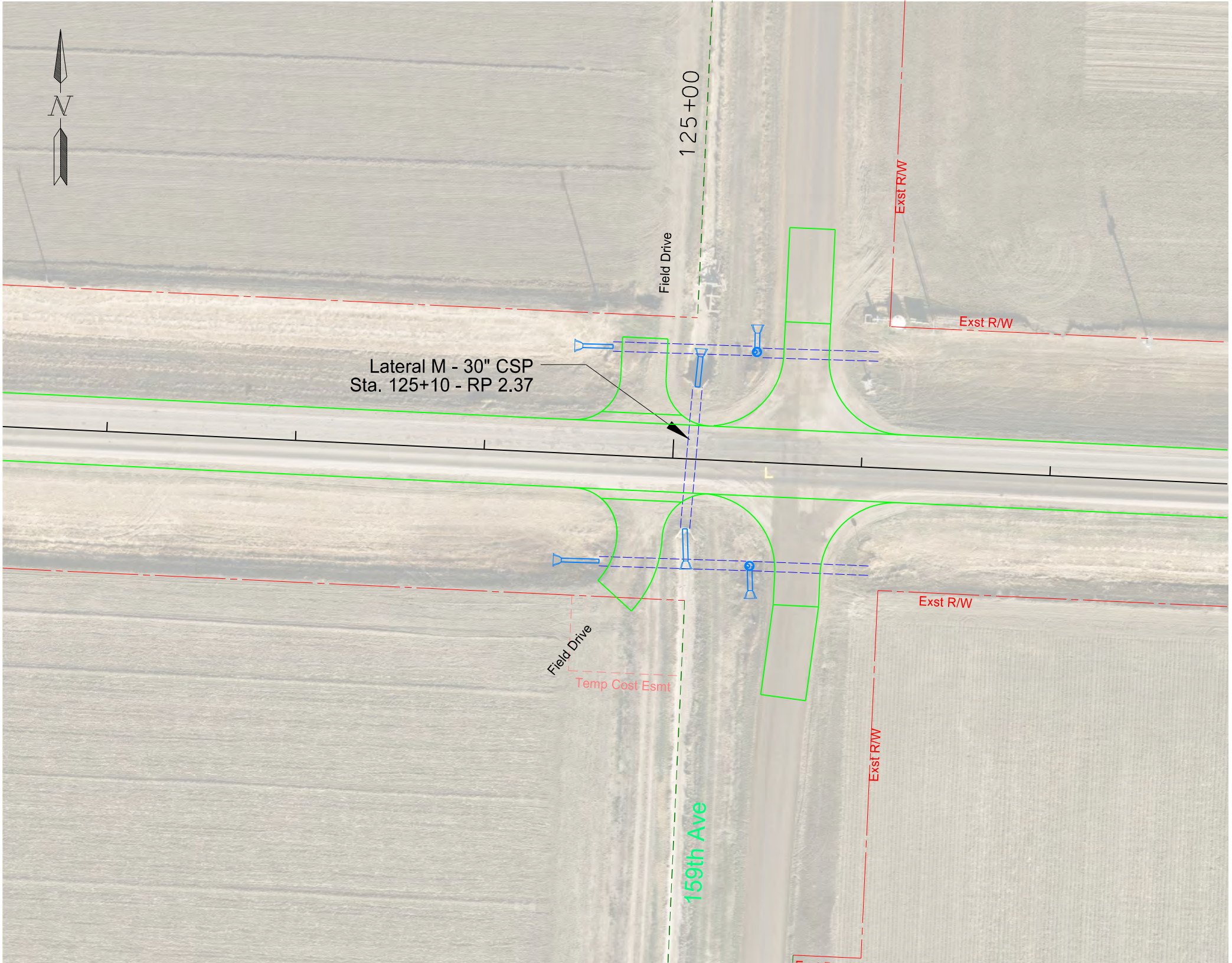
Lateral M2 - 24" CSP - Sta. 73+12 - RP 1.38



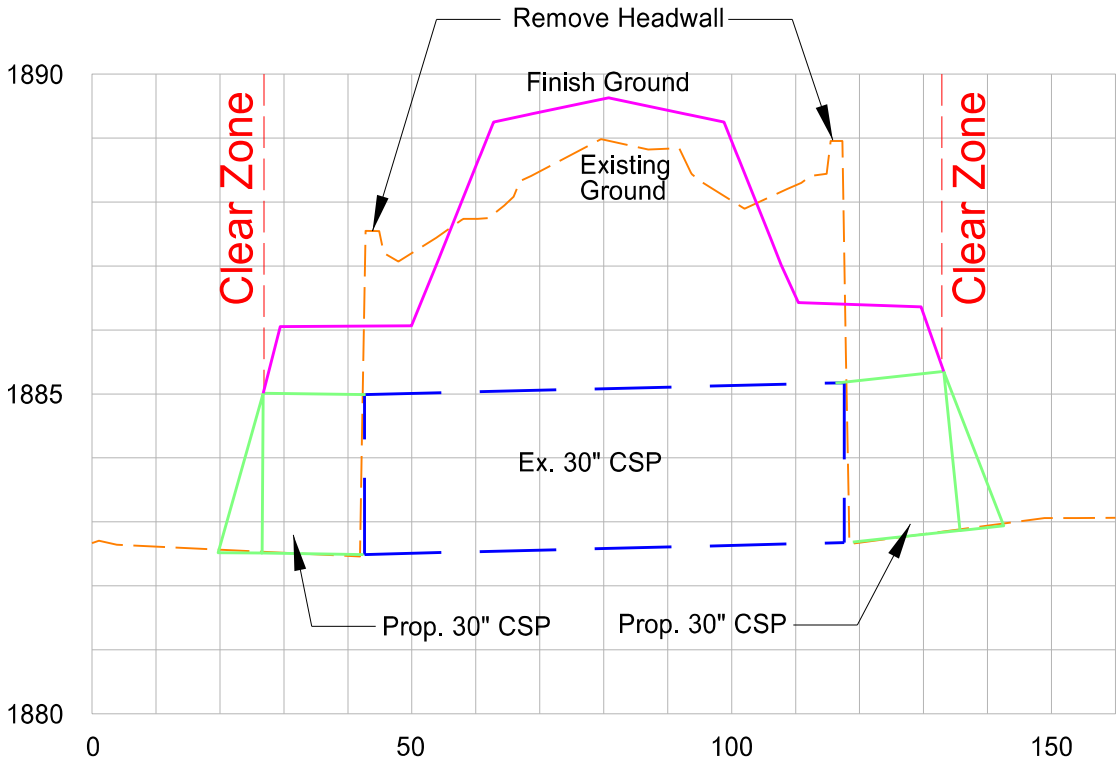

N
90+00
95+00
Temp Const Esmt
Exst R/W
Exst R/W
Drain 27 - 72" RCP
Sta. 92+64 - RP 1.76
Exst R/W
Exst R/W
Private Drive
Field Drive
Possible Temporary Culvert
for Work Zone Traffic Control
1905
Temp Cost Esmt

Drain 27 - 72" RCP - Sta. 92+64 - RP 1.76




N
125+00
Field Drive
Exst R/W
Exst R/W
Lateral M - 30" CSP
Sta. 125+10 - RP 2.37
Field Drive
Temp Cost Esmt
Exst R/W
Exst R/W
159th Ave

Lateral M - 30" CSP - Sta. 125+10 - RP 2.37



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Dave E. Leftwich
ENGINEER

6/24/94
DATE

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY PLATS of

SS-7-058(007)000

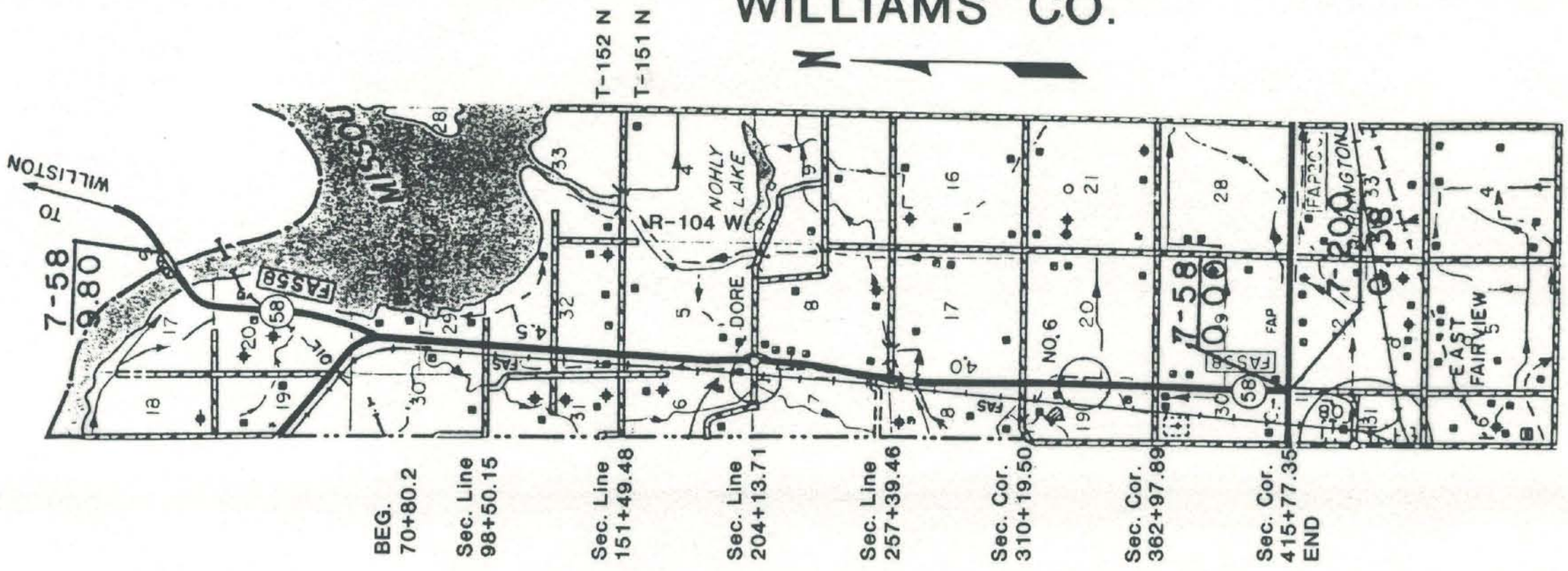
In

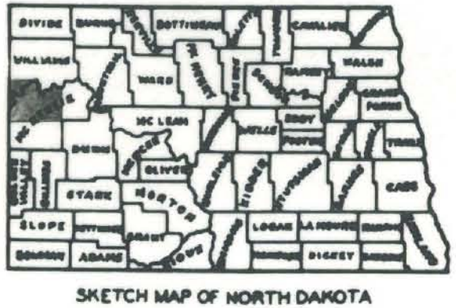
MCKENZIE & WILLIAMS CO.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ENGINEER DATE





SKETCH MAP OF NORTH DAKOTA

KEY TO CONVENTIONAL SIGNS

STATE & NATIONAL LINES	TEL. LINE
COUNTY LINE	POWER LINES
TOWNSHIP & RANGE LINES	BRIDGE
SURVEY CENTERLINE	TRAVELED WAY
OLD RIGHT OF WAY LINE	TRAILS
NEW RIGHT OF WAY LINE	RAILROADS
ABANDONED RIGHT OF WAY LINE	SECTION CORNER
PROPERTY LINE	CITY OR VILLAGE CORPORATE LIMITS
STONE WALL	INTERCHANGE
OTHER FENCES	GRADE SEPARATION
HEDGES & TREES	SERVICE ROAD

PLAT NO.	PARCELS
1 OF 13	1-1 TO 1-5
1A OF 13	1-6
2 OF 13	2-1 TO 2-3
3 OF 13	3-1 TO 3-6
4 OF 13	4-1 TO 4-3
5 OF 13	5-1 TO 5-9
6 OF 13	6-1 TO 6-6
7 OF 13	7-1 TO 7-6
8 OF 13	8-1 TO 8-9
9 OF 13	9-1 TO 9-3
10 OF 13	10-1 TO 10-6
11 OF 13	11-1 TO 11-14
12 OF 13	12-1 TO 12-10
13 OF 13	13-1 TO 13-6
13A OF 13	NONE

PROJ. NO.	PARCEL	PLAT NO.	SUPPLEMENTS
SS-7-058(007)	13-1 -	13 OF 13	ONE
MILE 000	13-6		

Parcel No. 13-6 Added 5-6-94 D.M.

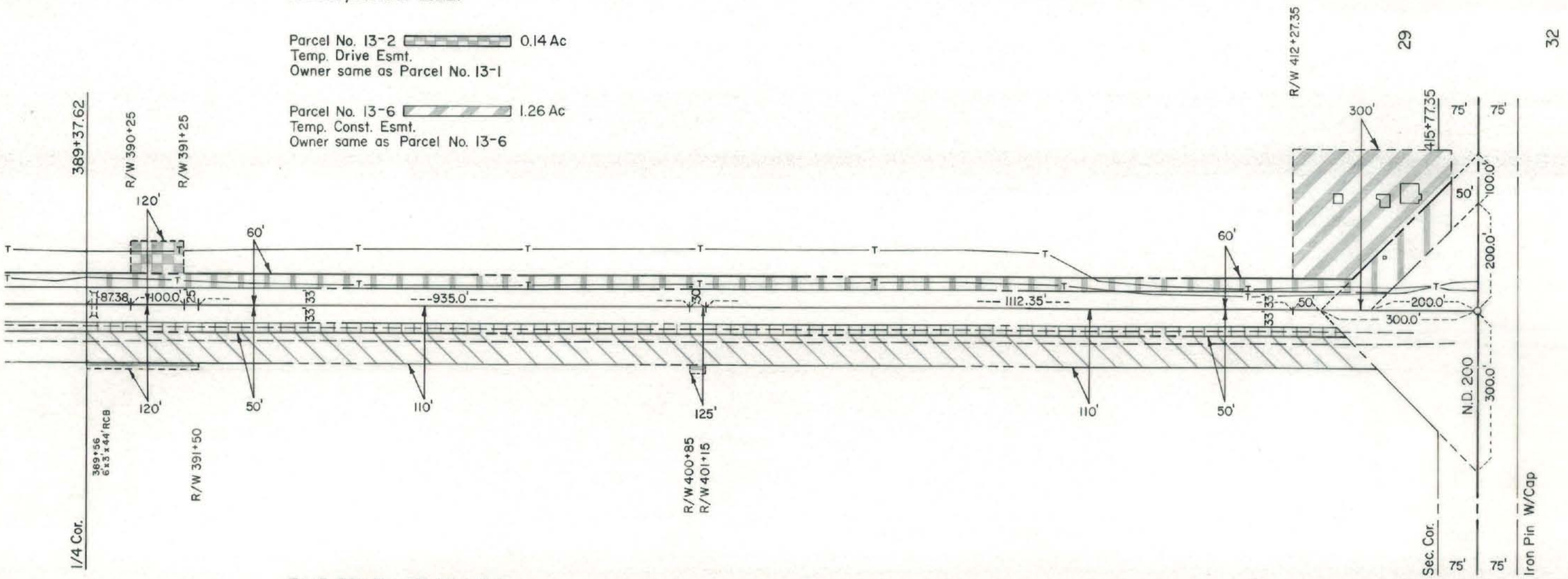
N

W 1/2 SW 1/4-29-151-104

Parcel No. 13-1 1.82 Ac
William Moore
Rt. 2, Box 2086
Fairview, Montana 59221

Parcel No. 13-2 0.14 Ac
Temp. Drive Esmt.
Owner same as Parcel No. 13-1

Parcel No. 13-6 1.26 Ac
Temp. Const. Esmt.
Owner same as Parcel No. 13-6



E 1/2 SE 1/4-30-151-104

Parcel No. 13-3 0.93 Ac
Richard D. Karst, Donald L. Karst,
& James H. Karst - Co-Tenants
Rt. 2
Fairview, Montana 59221

Parcel No. 13-4 0.06 Ac
Temp. Drainage Esmt.
Owner same as Parcet No. 13-3
Perm. Maintenance

Parcel No. 13-5 3.33 Ac
Richard D. Karst, Donald L. Karst,
& James H. Karst - Co-Tenants
Fairview, Montana 59221
Perpetual Esmt. from N.D.D.O.T. to
Lower Yellowstone Irrigation District No. 2

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NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY PLAT

PROJECT NO. SS-7-058(007)000

MCKENZIE **COUNTY**

APPROVED Dave E Leftwich

SCALE 1"=200'

DATE 6/24/94

MADE BY Dwight Monger | CHECKED BY | DATE 7-28-93

143579

Parcel No. 13-1

The west 60.0 ft. of the W½SW¼ of Sec. 29, Twp. 151 N., Rge. 104 W., 5th P.M.
Also including all that portion of said W½SW¼ lying southwesterly of a line extended between two points, said points lying respectively a distance of 300.0 ft. north along the section line and 300.0 ft. east along the section line, more or less, from the southwest corner of said W½SW¼.
Tract is shown on the plat as Parcel No. 13-1 and contains 1.82 acres, excepting all that portion previously acquired or lying within 33 ft. of the section lines.

Parcel No. 13-2

The east 60.0 ft. of the west 120.0 ft. of the south 100.0 ft. of the north 187.38 ft. of the W½SW¼ of Sec. 29, Twp. 151 N., Rge. 104 W., 5th P.M.
Tract is shown on the plat as Parcel No. 13-2 and contains 0.14 acres.

Parcel No. 13-3

The east 50.0 ft. of the E½SE¼ of Sec. 30, Twp. 151 N., Rge. 104 W., 5th P.M.
Tract is shown on the plat as Parcel No. 13-3 and contains 0.93 acres, excepting all that portion previously acquired or lying within 33 ft. of the section lines.

Parcel No. 13-4

The west 10.0 ft. of the east 120.0 ft. of the north 212.38 ft. and the west 15.0 ft. of the east 125.0 ft. of the south 30. ft. of the north 1,177.38 ft. of the E½SE¼ of Sec. 30, Twp. 151 N., Rge. 104 W., 5th P.M.
Tract is shown on the plat as Parcel No. 13-4 and contains 0.06 acres.

Parcel No. 13-5

The west 60.0 ft. of the east 110.0 ft. of the E½SE¼ of Sec. 30, Twp. 151 N., Rge. 104 W., 5th P.M.
Excepting all that portion of said E½SE¼ lying southeasterly of a line extended between two points lying respectively a distance of 330.0 ft. north along the section line and a distance of 300.0 ft. west along the section line, more or less, from the southeast corner of said E½SE¼.
Tract is shown on the plat as Parcel No. 13-5 and contains 3.33 acres, excepting all that portion previously acquired or lying within 33 ft. of the section line.

Parcel No. 13-6

The west 300.0 ft. of the south 350.0 ft. of the W½SW¼ of Sec. 29, Twp 151 N., Rge. 104 W., 5th P.M.
Tract is shown on the plat as Parcel No. 13-6 and contains 1.26 acres, excepting all that portion previously acquired or lying within 33 ft. of the section lines.

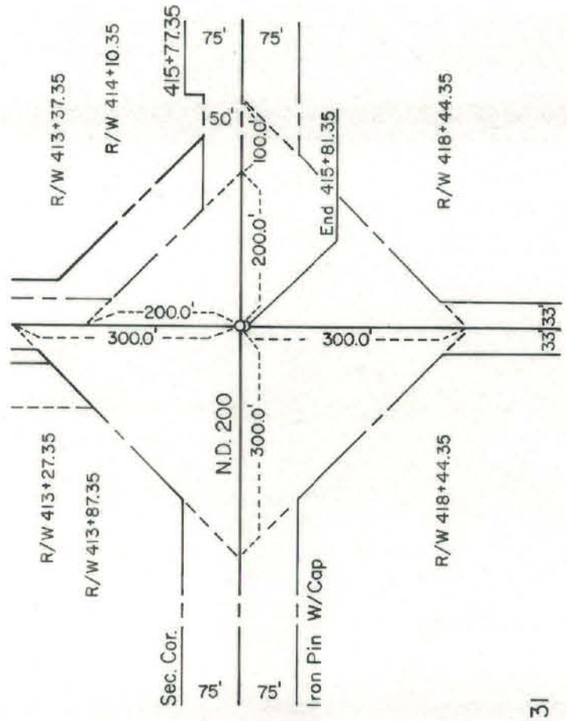
PROJECT NO. SS-7-058(007)000
SUPPLEMENT TO PLAT NO. 13 OF 13

PROJ. NO.	PARCEL	PLAT NO.	SUPPLEMENTS
SS-7-058(007)	13-1 - 13-2	13A OF 13	ONE
MILE 000			

N

29

32



30

31

MADE BY Dwight Monger | DATE 7-30-93 | CHECKED BY | DATE

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NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY PLAT

PROJECT NO. SS-7-058(007)000

MCKENZIE **COUNTY**

APPROVED Dave E. Leftwich

SCALE 1"=200'

DATE 6/24/94

Attachment 4
Horizontal and Vertical Alignment Data

Fairview Corridor Planning Study - Horizontal Alignment Analysis

Curve PI [1] (RP)	Curve Type	Curve Length (ft)	Radius (ft)	Deflection Angle [2]	Design Speed (mph)	Superelevation Rate [3]	Min. Sight Obstruction Distance (70 mph: 730') (35 mph: 250')	Max. Superelevation (70 mph: 8%) (35 mph: 4%)	Min. Stopping Sight Distance (70 mph: 730') (35 mph: 250') [4]	Curve Type Correct [5]	Minimum Radius (70 mph: 1810') (35mph: 371') [6]	Minimum Curve Length (70 mph: 1050') (35 mph: N/A) [7]	Curve Pass/Fail	Comments
61.49	SPIRAL	943	2,865	15° 51'	70	5%	23.2	YES	YES	YES	**NO**	NO	**FAIL**	Radius fails with superelevation
62.53	SPIRAL	1,231	1,910	30° 55'	70	5%	16.0	YES	YES	YES	**NO**	YES	**FAIL**	Radius fails with superelevation
62.83	SIMPLE	329	637	29° 35'	35	4%	47.5	YES	YES	YES	YES	YES	**PASS**	Meets low-speed urban criteria
63.00	SIMPLE	471	300	89° 59'	35	3%	96.4	YES	**NO**	YES	**NO**	YES	**FAIL**	Sight distance fails
64.15	SIMPLE	1,789	1,146	89° 28'	70	-2%	26.6	YES	YES	**NO**	**NO**	YES	**FAIL**	Radius fails; no superelevation

Source: MDT, 2015; DOWL, 2015; MDT Record Drawings; MDT Road Design Manual, 2004. All values are approximated based on available data.

[1] PI indicates the point of tangent intersection, which is defined as the intersection of the initial and final tangents.

[2] Deflection angle indicates the average degree of curvature and is a measure of the sharpness of the curve. A larger deflection angle indicates a sharper curve.

[3] Superelevation rate was considered in the Pass/Fail determination where necessary data was available.

[4] Shaded "No" cells result in "Fail" determination.

[5] Per MDT Road Design Manual page 9.2(1), it is MDT practice to use a spiral curve when the radius is less than 3,820 ft. Because curve type is not listed as a design requirement, curve type is not considered in the pass/fail determination.

[6] Shaded "No" cells result in "Fail" determination.

[7] Per MDT Road Design Manual page 9.2(7), it is MDT practice to specify a minimum curve length of 1050 ft. for a design speed of 70 mph. Because curve length is not listed as a design requirement, curve length is not considered in the pass/fail determination.

Fairview Corridor Planning Study - Vertical Alignment Analysis

Curve PVI [1] (RP)	Point Type	Curve Type [2]	Curve Length (ft)	K Value[3]	Grade Back	Grade Ahead	Design Speed (mph)	Min. K Value (Crest/Sag) (70 mph: 247/181) (35 mph: 29/49)	Maximum Grade (Level: 3%)	Minimum Curve Length[4] (70 mph: 210') (35 mph: N/A)	Curve/Tangent Pass/Fail
61.62	VPI	SAG	2,000	1,869	-0.870%	0.200%	70	YES	YES	YES	**PASS**
62.08	VPI	SAG	500	1,064	0.200%	0.670%	70	YES	YES	YES	**PASS**
62.38	VPI	CREST	1,000	719	0.670%	-0.720%	70	YES	YES	YES	**PASS**
62.95	VPI	SAG	100	222	-0.720%	-0.270%	35	YES	YES	YES	**PASS**
63.25	VPI	SAG	100	179	-0.270%	0.290%	35	YES	YES	YES	**PASS**
63.36	VPI	CREST	100	161	0.290%	-0.330%	35	YES	YES	YES	**PASS**
63.39	VPI	SAG	100	141	-0.330%	0.380%	35	YES	YES	YES	**PASS**
63.43	VPI	CREST	100	119	0.380%	-0.460%	35	YES	YES	YES	**PASS**
63.46	VPI	SAG	100	120	-0.460%	0.370%	35	YES	YES	YES	**PASS**
63.50	VPI	CREST	100	149	0.370%	-0.300%	35	YES	YES	YES	**PASS**
63.53	VPI	SAG	100	116	-0.300%	0.560%	35	YES	YES	YES	**PASS**
63.60	VPI	CREST	100	333	0.560%	0.260%	35	YES	YES	YES	**PASS**
63.79	VPI	SAG	200	189	0.450%	1.510%	35	YES	YES	YES	**PASS**
63.87	VPI	CREST	500	227	1.510%	-0.688%	35	YES	YES	YES	**PASS**

Source: MDT, 2015; DOWL, 2015; MDT Record Drawings; MDT Road Design Manual, 2004. All values are approximated based on best available data.

[1] PVI indicates the point of vertical intersection, which is defined as the intersection of the initial and final tangents.

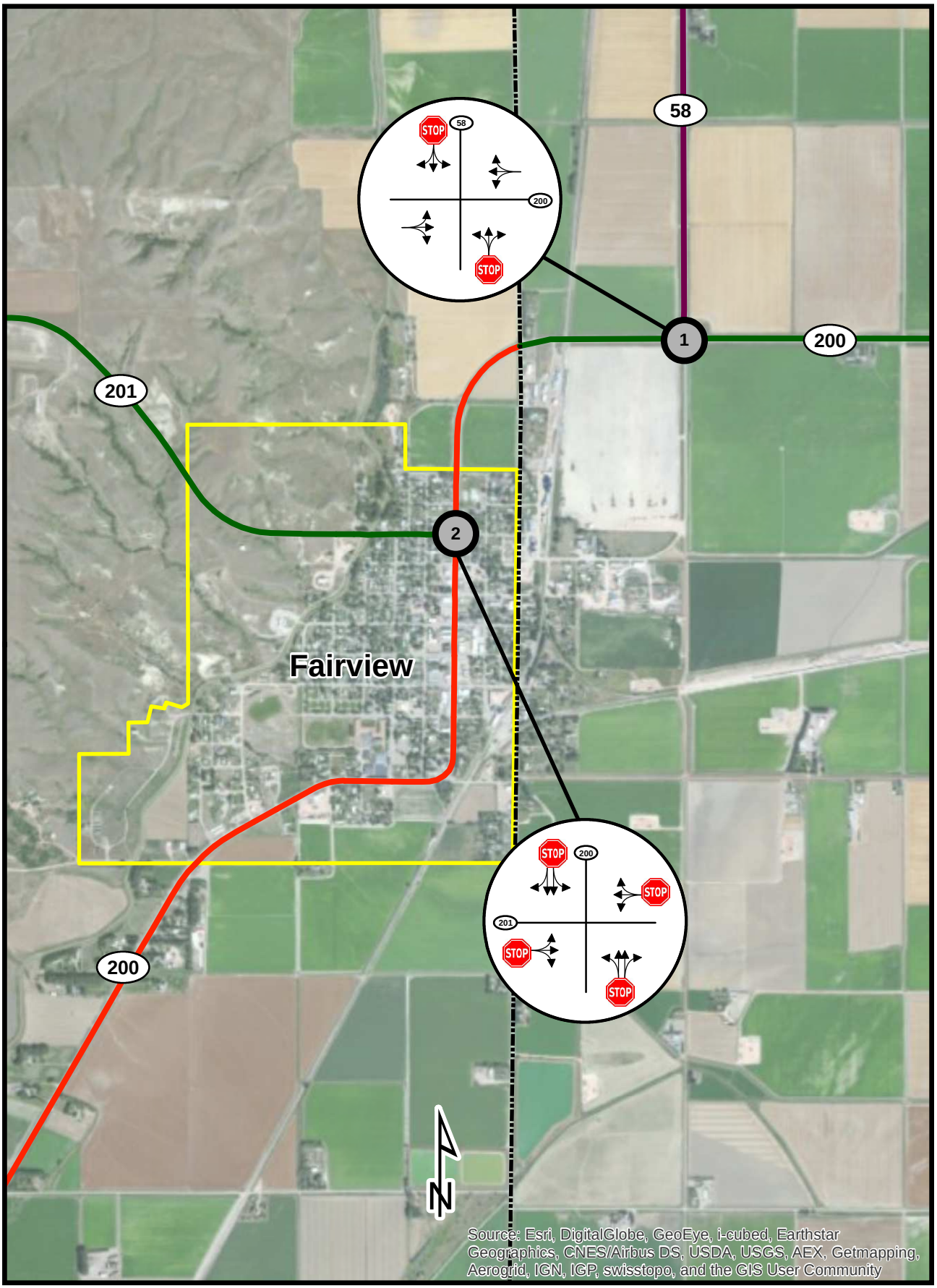
[2] Sag curves have a positive grade change (as in a valley); crest curves have a negative grade change (as on a hill).

[3] K value is the horizontal distance needed to produce a one percent change in gradient.

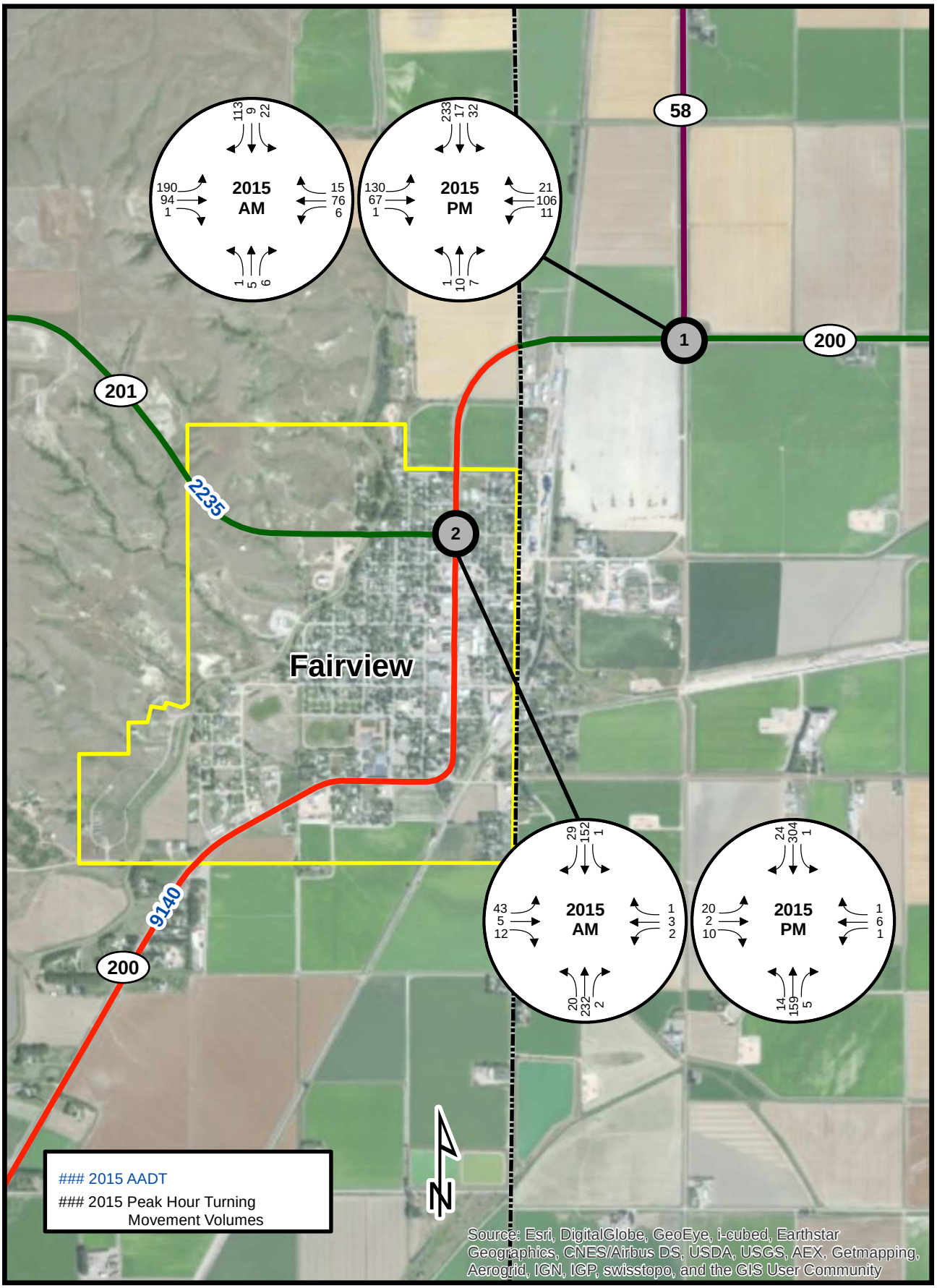
[4] 1000' is the minimum suggested vertical curve length for aesthetics.

Attachment 5
Intersection Geometry and Turning Movement Data

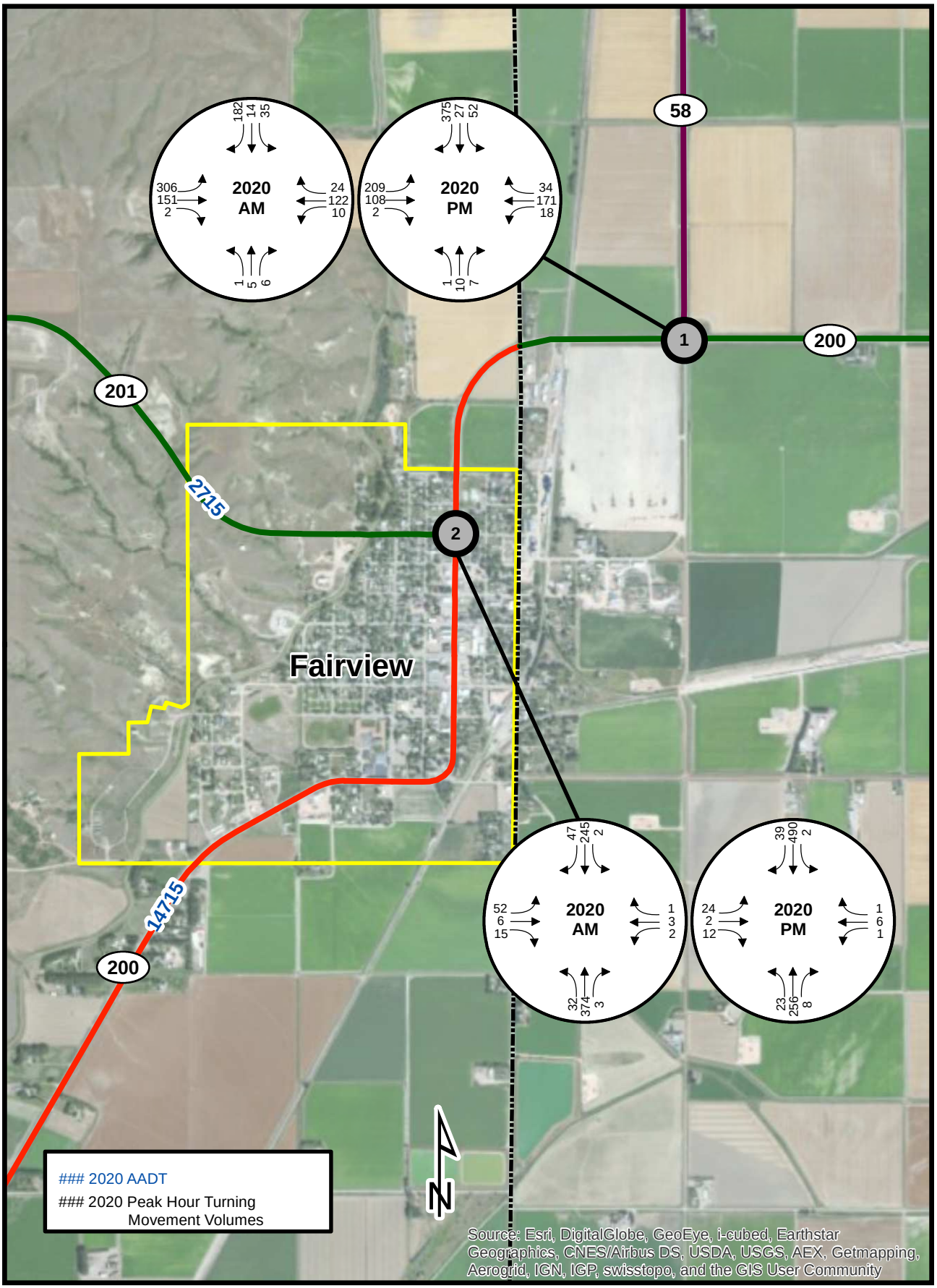
Intersection Control and Lane Configuration



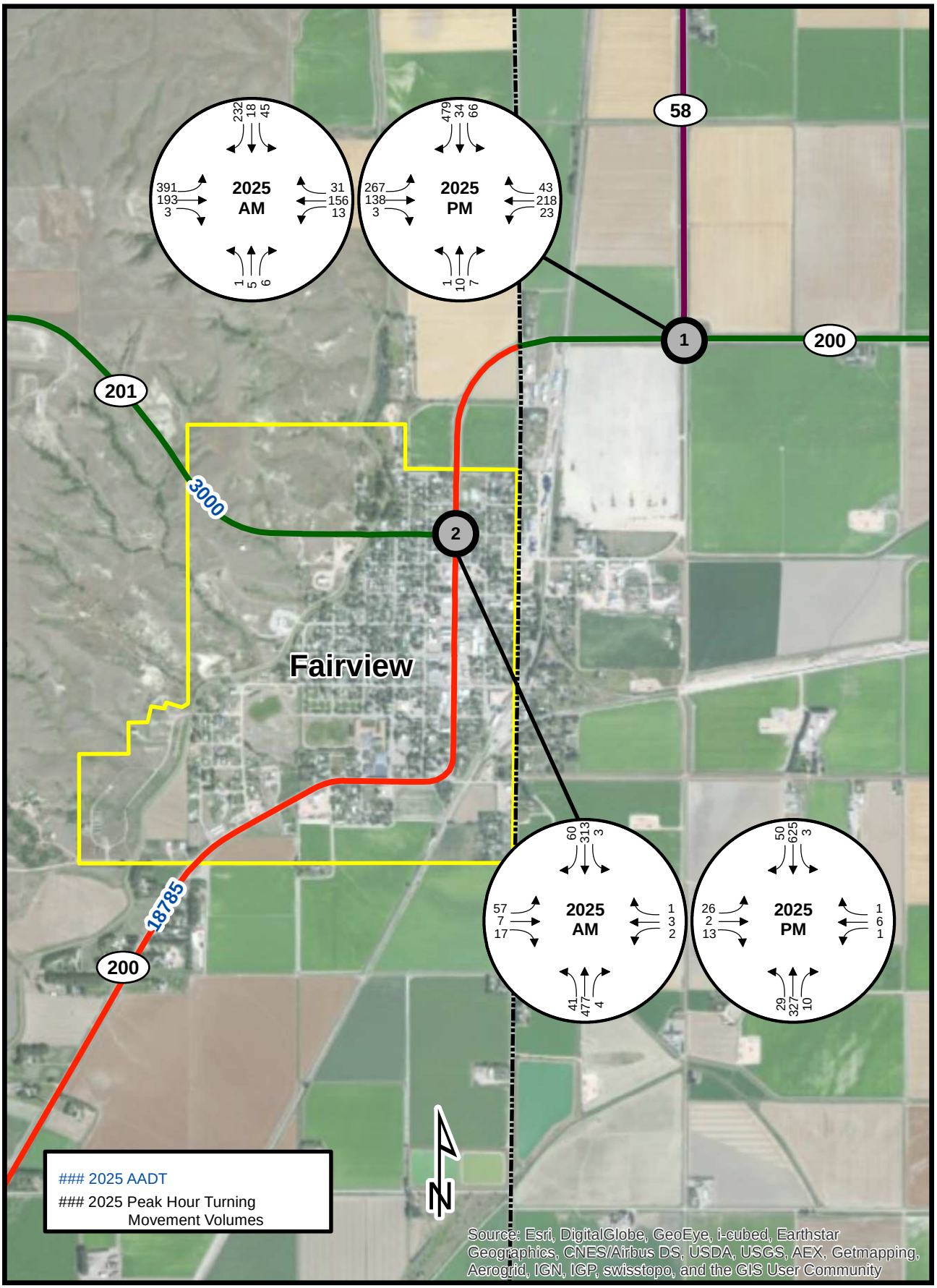
Existing 2015 Volumes



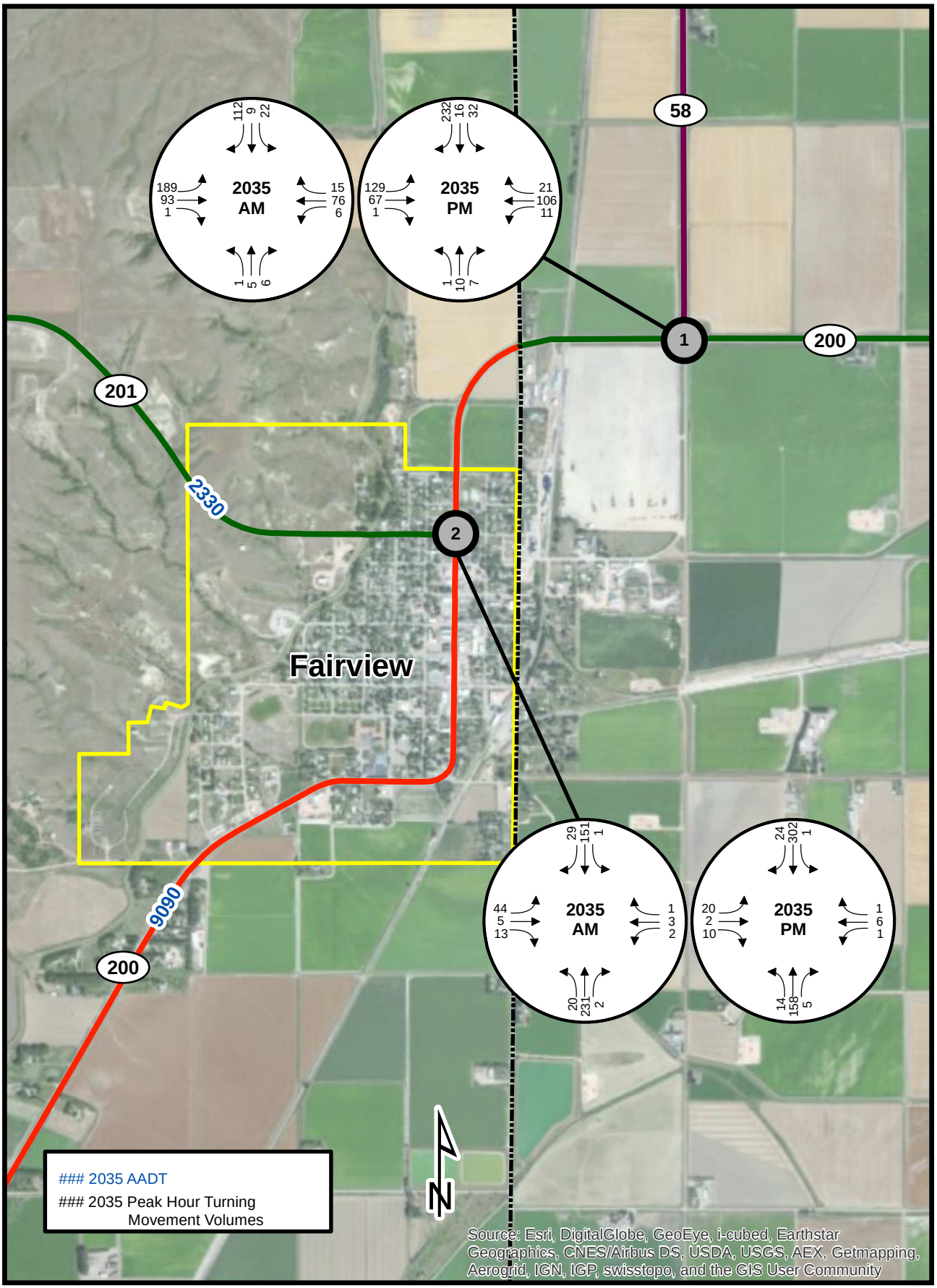
Projected 2020 Volumes



Projected 2025 Volumes



Projected 2035 Volumes



Background Traffic Counts (Raw Data)

(1) North Dakota Highway 200 and North Dakota Highway 58

15-min Interval	From North (Southbound) ND 58			From East (Westbound) ND 200			From South (Northbound) ND 58			From West (Eastbound) ND 200			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
6:00 - 6:15	5	0	18	0	6	6	0	3	5	34	20	0	97	489
6:15 - 6:30	4	1	27	0	15	7	0	3	1	42	21	0	121	520
6:30 - 6:45	5	1	40	1	6	4	0	0	1	36	32	0	126	516
6:45 - 7:00	8	3	18	2	17	3	0	2	1	65	26	0	145	538
7:00 - 7:15	5	0	29	0	14	5	0	0	3	49	23	0	128	519
7:15 - 7:30	4	4	27	2	23	3	0	2	0	35	17	0	117	495
7:30 - 7:45	5	2	39	2	22	4	1	1	2	41	28	1	148	500
7:45 - 8:00	5	1	23	2	23	1	0	2	3	39	27	0	126	
8:00 - 8:15	8	2	27	1	9	6	0	2	1	24	23	1	104	
8:15 - 8:30	3	4	39	1	14	4	1	3	2	27	24	0	122	

3:00 - 3:15	5	2	38	2	19	8	2	0	1	32	9	0	118	542
3:15 - 3:30	3	4	42	5	32	6	0	0	3	35	18	0	148	572
3:30 - 3:45	4	1	53	2	16	6	0	0	1	25	16	1	125	572
3:45 - 4:00	9	3	48	1	34	7	0	2	1	28	18	0	151	585
4:00 - 4:15	8	1	44	5	27	6	0	3	1	33	20	0	148	595
4:15 - 4:30	3	6	41	0	38	9	0	2	3	36	10	0	148	594
4:30 - 4:45	6	4	36	2	27	7	0	1	2	45	7	1	138	609
4:45 - 5:00	9	4	65	2	26	5	0	4	2	35	9	0	161	635
5:00 - 5:15	4	5	56	0	19	4	0	2	2	36	18	1	147	599
5:15 - 5:30	10	4	59	4	32	6	0	2	1	27	18	0	163	571
5:30 - 5:45	9	4	53	5	29	6	0	2	2	32	22	0	164	521
5:45 - 6:00	4	0	52	5	22	6	0	2	0	23	11	0	125	
6:00 - 6:15	3	0	36	1	11	5	0	4	2	36	21	0	119	
6:15 - 6:30	7	1	32	3	19	3	0	3	1	33	11	0	113	

* Counts collected during peak hours on Tuesday, March 3, 2015.

AM Intersection Peak Hour Factor (PHF) = 0.91
PM Intersection Peak Hour Factor (PHF) = 0.97

(2) Montana Highway 200 and Montana Highway 201

15-min Interval	From North (Southbound) MT 200			From East (Westbound) MT 201			From South (Northbound) MT 200			From West (Eastbound) MT 201			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
6:00 - 6:15	0	17	4	0	0	0	1	48	0	5	0	3	78	459
6:15 - 6:30	0	34	5	0	0	0	2	69	0	7	0	2	119	490
6:30 - 6:45	0	26	17	0	1	0	4	65	0	2	0	3	118	480
6:45 - 7:00	0	37	7	0	2	0	2	83	0	8	3	2	144	500
7:00 - 7:15	0	36	5	1	1	0	4	52	0	8	1	1	109	493
7:15 - 7:30	0	30	7	1	0	0	8	43	2	12	0	6	109	477
7:30 - 7:45	0	49	10	0	0	0	6	54	0	15	1	3	138	486
7:45 - 8:00	0	54	3	0	1	0	3	63	1	8	0	4	137	
8:00 - 8:15	1	37	4	0	1	0	1	32	2	7	0	8	93	
8:15 - 8:30	0	42	7	2	0	0	5	50	0	10	1	1	118	

3:00 - 3:15	0	45	8	2	0	0	5	36	1	4	0	6	107	488
3:15 - 3:30	0	64	7	2	0	0	7	48	0	2	1	1	132	508
3:30 - 3:45	0	48	11	0	1	0	4	41	3	5	1	1	115	510
3:45 - 4:00	0	76	4	1	2	0	6	35	1	6	1	2	134	528
4:00 - 4:15	0	63	4	1	0	1	2	45	2	4	1	4	127	523
4:15 - 4:30	0	70	8	2	1	0	2	29	3	13	1	5	134	524
4:30 - 4:45	0	59	3	3	2	0	7	44	2	7	0	6	133	550
4:45 - 5:00	0	78	4	1	1	0	5	31	2	4	1	2	129	547
5:00 - 5:15	0	63	5	0	1	1	1	48	2	4	0	3	128	537
5:15 - 5:30	1	92	7	0	2	0	6	42	1	7	1	1	160	515
5:30 - 5:45	0	71	8	0	2	0	2	38	0	5	0	4	130	458
5:45 - 6:00	0	72	3	1	0	0	3	31	1	5	0	3	119	
6:00 - 6:15	0	44	2	0	2	0	1	42	0	10	0	5	106	
6:15 - 6:30	0	50	4	0	0	0	1	40	2	3	1	2	103	

* Counts collected during peak hours on Tuesday, March 3, 2015.

AM Intersection Peak Hour Factor (PHF) = 0.87
PM Intersection Peak Hour Factor (PHF) = 0.86

Peak Hour Turning Movement Volumes

(1) North Dakota Highway 200 and North Dakota Highway 58

15-min Interval	From North (Southbound) ND 58			From East (Westbound) ND 200			From South (Northbound) ND 58			From West (Eastbound) ND 200			Int Count
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
6:45 - 7:00	8	3	18	2	17	3	0	2	1	65	26	0	145
7:00 - 7:15	5	0	29	0	14	5	0	0	3	49	23	0	128
7:15 - 7:30	4	4	27	2	23	3	0	2	0	35	17	0	117
7:30 - 7:45	5	2	39	2	22	4	1	1	2	41	28	1	148
Peak Hour Vol	**22**	**9**	**113**	**6**	**76**	**15**	**1**	**5**	**6**	**190**	**94**	**1**	**538**
Peak Hour Vol Trucks	**11**	**0**	**23**	**0**	**16**	**6**	**0**	**0**	**0**	**41**	**20**	**0**	
Seasonal Adjustment	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	NA
Peak Hour (2015) Volumes	**22**	**9**	**113**	**6**	**76**	**15**	**1**	**5**	**6**	**190**	**94**	**1**	**538**
Growth Factor	1.6105	1.6105	1.6105	1.6105	1.6105	1.6105	1.0253	1.0253	1.0253	1.6105	1.6105	1.6105	-
Projected (2020) Volumes	**35**	**14**	**182**	**10**	**122**	**24**	**1**	**5**	**6**	**306**	**151**	**2**	**858**
Growth Factor	1.2763	1.2763	1.2763	1.2763	1.2763	1.2763	1.0253	1.0253	1.0253	1.2763	1.2763	1.2763	-
Projected (2025) Volumes	**45**	**18**	**232**	**13**	**156**	**31**	**1**	**5**	**6**	**391**	**193**	**3**	**1094**
Growth Factor	0.4840	0.4840	0.4840	0.4840	0.4840	0.4840	1.0511	1.0511	1.0511	0.4840	0.4840	0.4840	-
Projected (2035) Volumes	**22**	**9**	**112**	**6**	**76**	**15**	**1**	**5**	**6**	**189**	**93**	**1**	**535**

0.91

4:45 - 5:00	9	4	65	2	26	5	0	4	2	35	9	0	161
5:00 - 5:15	4	5	56	0	19	4	0	2	2	36	18	1	147
5:15 - 5:30	10	4	59	4	32	6	0	2	1	27	18	0	163
5:30 - 5:45	9	4	53	5	29	6	0	2	2	32	22	0	164
Peak Hour Vol	**32**	**17**	**233**	**11**	**106**	**21**	**1**	**10**	**7**	**130**	**67**	**1**	**636**
Peak Hour Vol Trucks	**20**	**0**	**36**	**0**	**19**	**9**	**0**	**0**	**0**	**21**	**10**	**0**	
Seasonal Adjustment	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	NA
Peak Hour (2015) Volumes	**32**	**17**	**233**	**11**	**106**	**21**	**1**	**10**	**7**	**130**	**67**	**1**	**636**
Growth Factor	1.6105	1.6105	1.6105	1.6105	1.6105	1.6105	1.0253	1.0253	1.0253	1.6105	1.6105	1.6105	-
Projected (2020) Volumes	**52**	**27**	**375**	**18**	**171**	**34**	**1**	**10**	**7**	**209**	**108**	**2**	**1014**
Growth Factor	1.2763	1.2763	1.2763	1.2763	1.2763	1.2763	1.0253	1.0253	1.0253	1.2763	1.2763	1.2763	-
Projected (2025) Volumes	**66**	**34**	**479**	**23**	**218**	**43**	**1**	**10**	**7**	**267**	**138**	**3**	**1289**
Growth Factor	0.4840	0.4840	0.4840	0.4840	0.4840	0.4840	1.0511	1.0511	1.0511	0.4840	0.4840	0.4840	-
Projected (2035) Volumes	**32**	**16**	**232**	**11**	**106**	**21**	**1**	**11**	**7**	**129**	**67**	**1**	**634**

0.97

Peak Hour Turning Movement Volumes

(2) Montana Highway 200 and Montana Highway 201

15-min Interval	From North (Southbound) MT 200			From East (Westbound) MT 201			From South (Northbound) MT 200			From West (Eastbound) MT 201			Int Count
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
6:45 - 7:00	0	37	7	0	2	0	2	83	0	8	3	2	144
7:00 - 7:15	0	36	5	1	1	0	4	52	0	8	1	1	109
7:15 - 7:30	0	30	7	1	0	0	8	43	2	12	0	6	109
7:30 - 7:45	0	49	10	0	0	0	6	54	0	15	1	3	138
Peak Hour Vol	**0**	**152**	**29**	**2**	**3**	**0**	**20**	**232**	**2**	**43**	**5**	**12**	**500**
Peak Hour Vol Trucks	**0**	**27**	**12**	**0**	**0**	**0**	**10**	**41**	**0**	**20**	**0**	**0**	
Seasonal Adjustment	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	NA
Peak Hour (2015) Volumes	**1**	**152**	**29**	**2**	**3**	**1**	**20**	**232**	**2**	**43**	**5**	**12**	**502**
Growth Rate	1.6105	1.6105	1.6105	1.0253	1.0253	1.0253	1.6105	1.6105	1.6105	1.2167	1.2167	1.2167	-
Projected (2020) Volumes	**2**	**245**	**47**	**2**	**3**	**1**	**32**	**374**	**3**	**52**	**6**	**15**	**782**
Growth Rate	1.2763	1.2763	1.2763	1.0253	1.0253	1.0253	1.2763	1.2763	1.2763	1.1041	1.1041	1.1041	-
Projected (2025) Volumes	**3**	**313**	**60**	**2**	**3**	**1**	**41**	**477**	**4**	**57**	**7**	**17**	**985**
Growth Rate	0.4840	0.4840	0.4840	1.0511	1.0511	1.0511	0.4840	0.4840	0.4840	0.7763	0.7763	0.7763	-
Projected (2035) Volumes	**1**	**151**	**29**	**2**	**3**	**1**	**20**	**231**	**2**	**44**	**5**	**13**	**502**

0.87

4:45 - 5:00	0	78	4	1	1	0	5	31	2	4	1	2	129
5:00 - 5:15	0	63	5	0	1	1	1	48	2	4	0	3	128
5:15 - 5:30	1	92	7	0	2	0	6	42	1	7	1	1	160
5:30 - 5:45	0	71	8	0	2	0	2	38	0	5	0	4	130
Peak Hour Vol	**1**	**304**	**24**	**1**	**6**	**1**	**14**	**159**	**5**	**20**	**2**	**10**	**547**
Peak Hour Vol Trucks	**0**	**48**	**7**	**0**	**0**	**0**	**0**	**21**	**0**	**10**	**0**	**2**	
Seasonal Adjustment	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	NA
Peak Hour (2015) Volumes	**1**	**304**	**24**	**1**	**6**	**1**	**14**	**159**	**5**	**20**	**2**	**10**	**547**
Growth Rate	1.6105	1.6105	1.6105	1.0253	1.0253	1.0253	1.6105	1.6105	1.6105	1.2167	1.2167	1.2167	-
Projected (2020) Volumes	**2**	**490**	**39**	**1**	**6**	**1**	**23**	**256**	**8**	**24**	**2**	**12**	**864**
Growth Rate	1.2763	1.2763	1.2763	1.0253	1.0253	1.0253	1.2763	1.2763	1.2763	1.1041	1.1041	1.1041	-
Projected (2025) Volumes	**3**	**625**	**50**	**1**	**6**	**1**	**29**	**327**	**10**	**26**	**2**	**13**	**1093**
Growth Rate	0.4840	0.4840	0.4840	1.0511	1.0511	1.0511	0.4840	0.4840	0.4840	0.7763	0.7763	0.7763	-
Projected (2035) Volumes	**1**	**302**	**24**	**1**	**6**	**1**	**14**	**158**	**5**	**20**	**2**	**10**	**544**

0.85

Attachment 6
Segment Analysis Worksheets

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment A
From/To	HW133 to 0.2 mi S of HW134
Jurisdiction	
Analysis Year	2015
Description	SB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	8.0	ft	% Trucks and buses	30	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.7	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	48	%
Up/down	-	%	Access point density	18	/mi

Analysis direction volume, Vd	311	veh/h
Opposing direction volume, Vo	260	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		1.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.893		0.893	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	387	pc/h	324	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	4.5	mi/h
Free-flow speed, FFSd	55.5	mi/h
Adjustment for no-passing zones, fnp	2.4	mi/h
Average travel speed, ATSd	47.6	mi/h
Percent Free Flow Speed, PFFS	85.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.971	0.971
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	356 pc/h	298 pc/h
Base percent time-spent-following,(note-4) BPTSFd	37.6 %	
Adjustment for no-passing zones, fnp	46.0	
Percent time-spent-following, PTSFd	62.6 %	

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.23	
Peak 15-min vehicle-miles of travel, VMT15	58	veh-mi
Peak-hour vehicle-miles of travel, VMT60	208	veh-mi
Peak 15-min total travel time, TT15	1.2	veh-h
Capacity from ATS, CdATS	1518	veh/h
Capacity from PTSF, CdPTSF	1650	veh/h
Directional Capacity	1518	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	47.6	mi/h
Percent time-spent-following, PTSFd (from above)	62.6	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	345.6
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	16.10
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment A
From/To	HW133 to 0.2 mi S of HW134
Jurisdiction	
Analysis Year	2020
Description	SB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	8.0	ft	% Trucks and buses	30	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.7	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	48	%
Up/down	-	%	Access point density	18	/mi

Analysis direction volume, Vd	501	veh/h
Opposing direction volume, Vo	419	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.971		0.943	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	573	pc/h	494	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	4.5	mi/h
Free-flow speed, FFSd	55.5	mi/h
Adjustment for no-passing zones, fnp	1.7	mi/h
Average travel speed, ATSd	45.5	mi/h
Percent Free Flow Speed, PFFS	82.0	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	557 pc/h	466 pc/h
Base percent time-spent-following,(note-4) BPTSFd	55.0 %	
Adjustment for no-passing zones, fnp	33.5	
Percent time-spent-following, PTSFd	73.2 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.34	
Peak 15-min vehicle-miles of travel, VMT15	93	veh-mi
Peak-hour vehicle-miles of travel, VMT60	336	veh-mi
Peak 15-min total travel time, TT15	2.0	veh-h
Capacity from ATS, CdATS	1603	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1603	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.5	mi/h
Percent time-spent-following, PTSFd (from above)	73.2	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	556.7
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	16.34
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment A
From/To	HW133 to 0.2 mi S of HW134
Jurisdiction	
Analysis Year	2025
Description	SB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	8.0	ft	% Trucks and buses	30	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.7	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	48	%
Up/down	-	%	Access point density	18	/mi

Analysis direction volume, Vd	639	veh/h
Opposing direction volume, Vo	534	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.971		0.971	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	731	pc/h	611	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	4.5	mi/h
Free-flow speed, FFSd	55.5	mi/h
Adjustment for no-passing zones, fnp	1.3	mi/h
Average travel speed, ATSd	43.8	mi/h
Percent Free Flow Speed, PFFS	78.9	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	710 pc/h	593 pc/h
Base percent time-spent-following,(note-4) BPTSFd	63.6 %	
Adjustment for no-passing zones, fnp	26.6	
Percent time-spent-following, PTSFd	78.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.43	
Peak 15-min vehicle-miles of travel, VMT15	119	veh-mi
Peak-hour vehicle-miles of travel, VMT60	428	veh-mi
Peak 15-min total travel time, TT15	2.7	veh-h
Capacity from ATS, CdATS	1651	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1651	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	43.8	mi/h
Percent time-spent-following, PTSFd (from above)	78.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	710.0
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	16.46
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment A
From/To	HW133 to 0.2 mi S of HW134
Jurisdiction	
Analysis Year	2035
Description	SB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.90	
Shoulder width	8.0	ft	% Trucks and buses	30	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.7	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	48	%
Up/down	-	%	Access point density	18	/mi

Analysis direction volume, Vd	309	veh/h
Opposing direction volume, Vo	259	veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.4	1.4
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.893	0.893
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	384 pc/h	322 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	4.5	mi/h
Free-flow speed, FFSd	55.5	mi/h
Adjustment for no-passing zones, fnp	2.4	mi/h
Average travel speed, ATSd	47.6	mi/h
Percent Free Flow Speed, PFFS	85.8	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.971	0.971
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	354 pc/h	296 pc/h
Base percent time-spent-following,(note-4) BPTSFd	37.6 %	
Adjustment for no-passing zones, fnp	46.2	
Percent time-spent-following, PTSFd	62.8 %	

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.23	
Peak 15-min vehicle-miles of travel, VMT15	58	veh-mi
Peak-hour vehicle-miles of travel, VMT60	207	veh-mi
Peak 15-min total travel time, TT15	1.2	veh-h
Capacity from ATS, CdATS	1518	veh/h
Capacity from PTSF, CdPTSF	1650	veh/h
Directional Capacity	1518	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	47.6	mi/h
Percent time-spent-following, PTSFd (from above)	62.8	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	343.3
Effective width of outside lane, We	28.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	16.09
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment C
From/To	2nd St N to HW58
Jurisdiction	
Analysis Year	2015
Description	WB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.84	
Shoulder width	2.0	ft	% Trucks and buses	30	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.7	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	11	/mi

Analysis direction volume, Vd	345	veh/h
Opposing direction volume, Vo	321	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		1.3	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.917		0.917	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	448	pc/h	417	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	2.6	mi/h
Adj. for access point density,(note-3) fA	2.8	mi/h
Free-flow speed, FFSd	54.7	mi/h
Adjustment for no-passing zones, fnp	2.7	mi/h
Average travel speed, ATSd	45.2	mi/h
Percent Free Flow Speed, PFFS	82.7	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.971
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	411 pc/h	394 pc/h
Base percent time-spent-following,(note-4) BPTSFd	43.6 %	
Adjustment for no-passing zones, fnp	45.5	
Percent time-spent-following, PTSFd	66.8 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	75	veh-mi
Peak-hour vehicle-miles of travel, VMT60	252	veh-mi
Peak 15-min total travel time, TT15	1.7	veh-h
Capacity from ATS, CdATS	1559	veh/h
Capacity from PTSF, CdPTSF	1650	veh/h
Directional Capacity	1559	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.2	mi/h
Percent time-spent-following, PTSFd (from above)	66.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	410.7
Effective width of outside lane, We	14.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	19.09
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment C
From/To	2nd St N to HW58
Jurisdiction	
Analysis Year	2020
Description	WB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.84	
Shoulder width	2.0	ft	% Trucks and buses	30	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.7	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	11	/mi

Analysis direction volume, Vd	556	veh/h
Opposing direction volume, Vo	517	veh/h

Average Travel Speed

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adj. factor,(note-5) fHV	0.971	0.971
Grade adj. factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	682 pc/h	634 pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	2.6	mi/h
Adj. for access point density,(note-3) fA	2.8	mi/h
Free-flow speed, FFSd	54.7	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATSd	42.6	mi/h
Percent Free Flow Speed, PFFS	78.0	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	662 pc/h	615 pc/h
Base percent time-spent-following,(note-4) BPTSFd	61.3 %	
Adjustment for no-passing zones, fnp	31.9	
Percent time-spent-following, PTSFd	77.8 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.40	
Peak 15-min vehicle-miles of travel, VMT15	121	veh-mi
Peak-hour vehicle-miles of travel, VMT60	406	veh-mi
Peak 15-min total travel time, TT15	2.8	veh-h
Capacity from ATS, CdATS	1651	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1651	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	42.6	mi/h
Percent time-spent-following, PTSFd (from above)	77.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	661.9
Effective width of outside lane, We	14.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	19.37
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment C
From/To	2nd St N to HW58
Jurisdiction	
Analysis Year	2025
Description	WB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.84	
Shoulder width	2.0	ft	% Trucks and buses	30	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.7	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	11	/mi

Analysis direction volume, Vd	710	veh/h
Opposing direction volume, Vo	660	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.971		0.971	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	870	pc/h	809	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	2.6	mi/h
Adj. for access point density,(note-3) fA	2.8	mi/h
Free-flow speed, FFSd	54.7	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATSd	40.2	mi/h
Percent Free Flow Speed, PFFS	73.6	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.0
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	1.000
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	845 pc/h	786 pc/h
Base percent time-spent-following,(note-4) BPTSFd	70.8 %	
Adjustment for no-passing zones, fnp	24.6	
Percent time-spent-following, PTSFd	83.5 %	

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.51	
Peak 15-min vehicle-miles of travel, VMT15	154	veh-mi
Peak-hour vehicle-miles of travel, VMT60	518	veh-mi
Peak 15-min total travel time, TT15	3.8	veh-h
Capacity from ATS, CdATS	1651	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1651	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	40.2	mi/h
Percent time-spent-following, PTSFd (from above)	83.5	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	845.2
Effective width of outside lane, We	14.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	19.49
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
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Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment C
From/To	2nd St N to HW58
Jurisdiction	
Analysis Year	2035
Description	WB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.84	
Shoulder width	2.0	ft	% Trucks and buses	30	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.7	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	11	/mi

Analysis direction volume, Vd	343	veh/h
Opposing direction volume, Vo	319	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		1.3	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.917		0.917	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	445	pc/h	414	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	2.6	mi/h
Adj. for access point density,(note-3) fA	2.8	mi/h
Free-flow speed, FFSd	54.7	mi/h
Adjustment for no-passing zones, fnp	2.7	mi/h
Average travel speed, ATSd	45.3	mi/h
Percent Free Flow Speed, PFFS	82.8	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.971
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	408 pc/h	391 pc/h
Base percent time-spent-following,(note-4) BPTSFd	43.6 %	
Adjustment for no-passing zones, fnp	45.7	
Percent time-spent-following, PTSFd	66.9 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	75	veh-mi
Peak-hour vehicle-miles of travel, VMT60	250	veh-mi
Peak 15-min total travel time, TT15	1.7	veh-h
Capacity from ATS, CdATS	1559	veh/h
Capacity from PTSF, CdPTSF	1650	veh/h
Directional Capacity	1559	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.7	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	45.3	mi/h
Percent time-spent-following, PTSFd (from above)	66.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	408.3
Effective width of outside lane, We	14.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	19.12
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
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Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	9/21/2015
Analysis Time Period	
Highway	Highway 200 Segment D WB
From/To	HW58 to Black Top Rd
Jurisdiction	
Analysis Year	2035
Description	PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.84	
Shoulder width	4.0	ft	% Trucks and buses	37	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	2.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	7	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	157	veh/h
Opposing direction volume, Vo	146	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.6		1.6	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.818		0.818	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	228	pc/h	212	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	65.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	1.3	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	61.7	mi/h
Adjustment for no-passing zones, fnp	2.0	mi/h
Average travel speed, ATSd	56.3	mi/h
Percent Free Flow Speed, PFFS	91.3	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.964	0.964
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	194 pc/h	180 pc/h
Base percent time-spent-following,(note-4) BPTSFd	21.0 %	
Adjustment for no-passing zones, fnp	23.3	
Percent time-spent-following, PTSFd	33.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.13	
Peak 15-min vehicle-miles of travel, VMT15	131	veh-mi
Peak-hour vehicle-miles of travel, VMT60	440	veh-mi
Peak 15-min total travel time, TT15	2.3	veh-h
Capacity from ATS, CdATS	1391	veh/h
Capacity from PTSF, CdPTSF	1639	veh/h
Directional Capacity	1391	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	56.3	mi/h
Percent time-spent-following, PTSFd (from above)	33.1	
Level of service, LOSd (from above)	A	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	186.9
Effective width of outside lane, We	19.44
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	24.05
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
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Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment D
From/To	HW58 to Black Top Rd
Jurisdiction	
Analysis Year	2020
Description	WB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.84	
Shoulder width	4.0	ft	% Trucks and buses	37	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	2.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	7	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	254	veh/h
Opposing direction volume, Vo	237	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		1.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.871		0.871	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	347	pc/h	324	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	1.3	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	56.7	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATSd	50.0	mi/h
Percent Free Flow Speed, PFFS	88.3	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.964	0.964
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	314 pc/h	293 pc/h
Base percent time-spent-following,(note-4) BPTSFd	34.6 %	
Adjustment for no-passing zones, fnp	23.4	
Percent time-spent-following, PTSFd	46.7 %	

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	214	veh-mi
Peak-hour vehicle-miles of travel, VMT60	719	veh-mi
Peak 15-min total travel time, TT15	4.3	veh-h
Capacity from ATS, CdATS	1481	veh/h
Capacity from PTSF, CdPTSF	1639	veh/h
Directional Capacity	1481	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	50.0	mi/h
Percent time-spent-following, PTSFd (from above)	46.7	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	302.4
Effective width of outside lane, We	16.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	24.90
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
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Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment D
From/To	HW58 to Black Top Rd
Jurisdiction	
Analysis Year	2025
Description	WB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.84	
Shoulder width	4.0	ft	% Trucks and buses	37	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	2.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	7	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	325	veh/h
Opposing direction volume, Vo	302	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		1.3	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.900		0.900	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	430	pc/h	399	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	1.3	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	56.7	mi/h
Adjustment for no-passing zones, fnp	1.3	mi/h
Average travel speed, ATSd	48.9	mi/h
Percent Free Flow Speed, PFFS	86.3	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.964	0.964
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	401 pc/h	373 pc/h
Base percent time-spent-following,(note-4) BPTSFd	42.5 %	
Adjustment for no-passing zones, fnp	21.7	
Percent time-spent-following, PTSFd	53.7 %	

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.25	
Peak 15-min vehicle-miles of travel, VMT15	274	veh-mi
Peak-hour vehicle-miles of travel, VMT60	920	veh-mi
Peak 15-min total travel time, TT15	5.6	veh-h
Capacity from ATS, CdATS	1530	veh/h
Capacity from PTSF, CdPTSF	1639	veh/h
Directional Capacity	1530	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	48.9	mi/h
Percent time-spent-following, PTSFd (from above)	53.7	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	386.9
Effective width of outside lane, We	16.00
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	25.03
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS 2010: Two-Lane Highways Release 6.65

Phone: Fax:
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Directional Two-Lane Highway Segment Analysis

Analyst	JSP
Agency/Co.	DOWL
Date Performed	6/8/2015
Analysis Time Period	
Highway	Highway 200 Segment D
From/To	HW58 to Black Top Rd
Jurisdiction	
Analysis Year	2035
Description	WB PM Peak Hour

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.84	
Shoulder width	4.0	ft	% Trucks and buses	37	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	2.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	7	%
Up/down	-	%	Access point density	8	/mi

Analysis direction volume, Vd	157	veh/h
Opposing direction volume, Vo	146	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.6		1.6	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.818		0.818	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	228	pc/h	212	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	1.3	mi/h
Adj. for access point density,(note-3) fA	2.0	mi/h
Free-flow speed, FFSd	56.7	mi/h
Adjustment for no-passing zones, fnp	1.6	mi/h
Average travel speed, ATSd	51.7	mi/h
Percent Free Flow Speed, PFFS	91.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.1	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.964	0.964
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	194 pc/h	180 pc/h
Base percent time-spent-following,(note-4) BPTSFd	21.0 %	
Adjustment for no-passing zones, fnp	23.3	
Percent time-spent-following, PTSFd	33.1 %	

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.13	
Peak 15-min vehicle-miles of travel, VMT15	132	veh-mi
Peak-hour vehicle-miles of travel, VMT60	444	veh-mi
Peak 15-min total travel time, TT15	2.6	veh-h
Capacity from ATS, CdATS	1391	veh/h
Capacity from PTSF, CdPTSF	1639	veh/h
Directional Capacity	1391	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	51.7	mi/h
Percent time-spent-following, PTSFd (from above)	33.1	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	55
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	186.9
Effective width of outside lane, We	19.44
Effective speed factor, St	4.79
Bicycle LOS Score, BLOS	24.05
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

MT 200

Direction	EB	WB	NB	SB	All
Average Speed (mph)	34	35	31	29	31
Total Travel Time (hr)	1	4	4	6	15
Distance Traveled (mi)	43	135	132	177	487
Performance Index	0.1	0.0	1.2	2.0	3.4

Zone 1 Totals

Number of Intersections	14
Average Speed (mph)	30
Total Travel Time (hr)	17
Distance Traveled (mi)	520
Performance Index	4.7

MT 200

Direction	EB	WB	NB	SB	All
Average Speed (mph)	34	35	30	28	31
Total Travel Time (hr)	2	6	7	10	25
Distance Traveled (mi)	69	215	212	283	779
Performance Index	0.1	0.0	2.0	3.7	5.8

Zone 1 Totals

Number of Intersections	14
Average Speed (mph)	30
Total Travel Time (hr)	27
Distance Traveled (mi)	827
Performance Index	7.2

MT 200

Direction	EB	WB	NB	SB	All
Average Speed (mph)	34	35	30	27	30
Total Travel Time (hr)	3	8	9	13	33
Distance Traveled (mi)	88	274	270	359	991
Performance Index	0.1	0.1	2.6	5.4	8.2

Zone 1 Totals

Number of Intersections	14
Average Speed (mph)	30
Total Travel Time (hr)	36
Distance Traveled (mi)	1050
Performance Index	9.7

MT 200

Direction	EB	WB	NB	SB	All
Average Speed (mph)	34	35	31	29	32
Total Travel Time (hr)	1	4	4	6	15
Distance Traveled (mi)	43	134	132	176	484
Performance Index	0.1	0.0	1.2	2.0	3.4

Attachment 7
Intersection Analysis Worksheets

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	190	94	1	6	76	15	1	5	6	22	9	113
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	22	21	0	0	21	40	0	0	0	50	0	20
Mvmt Flow	209	103	1	7	84	16	1	5	7	24	10	124

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	100	0	0	104	0	0	693	634	104	632	627	92
Stage 1	-	-	-	-	-	-	521	521	-	105	105	-
Stage 2	-	-	-	-	-	-	172	113	-	527	522	-
Critical Hdwy	4.32	-	-	4.1	-	-	7.1	6.5	6.2	7.6	6.5	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.398	-	-	2.2	-	-	3.5	4	3.3	3.95	4	3.48
Pot Cap-1 Maneuver	1376	-	-	1500	-	-	360	399	956	333	403	918
Stage 1	-	-	-	-	-	-	542	535	-	796	812	-
Stage 2	-	-	-	-	-	-	835	806	-	457	534	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1376	-	-	1500	-	-	266	333	956	285	336	918
Mov Cap-2 Maneuver	-	-	-	-	-	-	266	333	-	285	336	-
Stage 1	-	-	-	-	-	-	455	449	-	668	808	-
Stage 2	-	-	-	-	-	-	710	802	-	376	448	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.4	0.5	12.7	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	479	1376	-	-	1500	-	-	634
HCM Lane V/C Ratio	0.028	0.152	-	-	0.004	-	-	0.25
HCM Control Delay (s)	12.7	8.1	0	-	7.4	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0	-	-	1

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	313	107	13	158
Demand Flow Rate, veh/h	381	131	13	195
Vehicles Circulating, veh/h	53	261	416	110
Vehicles Exiting, veh/h	252	168	18	282
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.1	6.7	5.0	6.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	381	131	13	195
Cap Entry Lane, veh/h	1072	870	745	1012
Entry HV Adj Factor	0.822	0.819	1.000	0.810
Flow Entry, veh/h	313	107	13	158
Cap Entry, veh/h	881	713	745	820
V/C Ratio	0.356	0.151	0.017	0.193
Control Delay, s/veh	8.1	6.7	5.0	6.4
LOS	A	A	A	A
95th %tile Queue, veh	2	1	0	1

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	43	5	12	0	2	3	1	0	20	232	2
Peak Hour Factor	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87
Heavy Vehicles, %	0	47	0	0	0	0	0	0	0	50	18	0
Mvmt Flow	0	49	6	14	0	2	3	1	0	23	267	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.7	8.3	9.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	72%	33%	1%	0%
Vol Thru, %	85%	98%	8%	50%	99%	72%
Vol Right, %	0%	2%	20%	17%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	136	118	60	6	77	105
LT Vol	20	0	43	2	1	0
Through Vol	116	116	5	3	76	76
RT Vol	0	2	12	1	0	29
Lane Flow Rate	156	136	69	7	89	121
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.253	0.196	0.113	0.01	0.123	0.172
Departure Headway (Hd)	5.836	5.204	5.922	5.18	5.022	5.129
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	616	690	605	689	714	700
Service Time	3.562	2.93	3.96	3.227	2.749	2.856
HCM Lane V/C Ratio	0.253	0.197	0.114	0.01	0.125	0.173
HCM Control Delay	10.5	9.2	9.7	8.3	8.5	8.9
HCM Lane LOS	B	A	A	A	A	A
HCM 95th-tile Q	1	0.7	0.4	0	0.4	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	152	29
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles, %	0	0	18	41
Mvmt Flow	0	1	175	33
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.7
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	130	67	1	11	106	21	1	10	7	32	17	233
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	16	15	0	0	18	43	0	0	0	63	0	15
Mvmt Flow	134	69	1	11	109	22	1	10	7	33	18	240

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	131	0	0	70	0	0	610	492	70	489	481	120
Stage 1	-	-	-	-	-	-	338	338	-	143	143	-
Stage 2	-	-	-	-	-	-	272	154	-	346	338	-
Critical Hdwy	4.26	-	-	4.1	-	-	7.1	6.5	6.2	7.73	6.5	6.35
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.73	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.73	5.5	-
Follow-up Hdwy	2.344	-	-	2.2	-	-	3.5	4	3.3	4.067	4	3.435
Pot Cap-1 Maneuver	1372	-	-	1544	-	-	409	481	998	403	487	898
Stage 1	-	-	-	-	-	-	681	644	-	734	782	-
Stage 2	-	-	-	-	-	-	738	774	-	560	644	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1372	-	-	1544	-	-	266	428	998	360	434	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	266	428	-	360	434	-
Stage 1	-	-	-	-	-	-	612	578	-	659	776	-
Stage 2	-	-	-	-	-	-	524	768	-	490	578	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.2	0.6	12.1	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	527	1372	-	-	1544	-	-	728
HCM Lane V/C Ratio	0.035	0.098	-	-	0.007	-	-	0.399
HCM Control Delay (s)	12.1	7.9	0	-	7.3	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	1.9

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	204	142	18	291
Demand Flow Rate, veh/h	235	171	18	348
Vehicles Circulating, veh/h	83	166	288	141
Vehicles Exiting, veh/h	406	140	30	196
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	6.4	4.4	8.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	235	171	18	348
Cap Entry Lane, veh/h	1040	957	847	981
Entry HV Adj Factor	0.867	0.832	1.000	0.836
Flow Entry, veh/h	204	142	18	291
Cap Entry, veh/h	901	797	847	821
V/C Ratio	0.226	0.179	0.021	0.355
Control Delay, s/veh	6.3	6.4	4.4	8.6
LOS	A	A	A	A
95th %tile Queue, veh	1	1	0	2

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	20	2	10	0	1	6	1	0	14	159	5
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	0	50	0	20	0	0	0	0	0	0	13	0
Mvmt Flow	0	24	2	12	0	1	7	1	0	16	187	6
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.4	8.3	8.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	62%	12%	1%	0%
Vol Thru, %	85%	94%	6%	75%	99%	86%
Vol Right, %	0%	6%	31%	12%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	94	85	32	8	153	176
LT Vol	14	0	20	1	1	0
Through Vol	80	80	2	6	152	152
RT Vol	0	5	10	1	0	24
Lane Flow Rate	110	99	38	9	180	207
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.154	0.142	0.063	0.014	0.241	0.287
Departure Headway (Hd)	5.051	5.156	6.003	5.218	4.822	4.996
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	712	697	597	685	747	721
Service Time	2.772	2.877	4.036	3.255	2.539	2.713
HCM Lane V/C Ratio	0.154	0.142	0.064	0.013	0.241	0.287
HCM Control Delay	8.7	8.7	9.4	8.3	9.1	9.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.5	0.5	0.2	0	0.9	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	304	24
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	0	0	16	29
Mvmt Flow	0	1	358	28
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.4
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	504	171	13	253
Demand Flow Rate, veh/h	613	209	13	312
Vehicles Circulating, veh/h	83	416	668	174
Vehicles Exiting, veh/h	403	265	28	451
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.0	9.6	6.5	8.6
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	613	209	13	312
Cap Entry Lane, veh/h	1040	745	579	949
Entry HV Adj Factor	0.822	0.818	1.000	0.811
Flow Entry, veh/h	504	171	13	253
Cap Entry, veh/h	855	609	579	770
V/C Ratio	0.589	0.280	0.022	0.329
Control Delay, s/veh	13.0	9.6	6.5	8.6
LOS	B	A	A	A
95th %tile Queue, veh	4	1	0	1

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	52	6	15	0	2	3	2	0	32	374	3
Peak Hour Factor	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87
Heavy Vehicles, %	0	47	0	0	0	0	0	0	0	50	18	0
Mvmt Flow	0	60	7	17	0	2	3	2	0	37	430	3
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	10.8	9	12.1
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	71%	29%	2%	0%
Vol Thru, %	85%	98%	8%	43%	98%	72%
Vol Right, %	0%	2%	21%	29%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	219	190	73	7	125	170
LT Vol	32	0	52	2	2	0
Through Vol	187	187	6	3	123	123
RT Vol	0	3	15	2	0	47
Lane Flow Rate	252	218	84	8	143	195
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.423	0.328	0.152	0.013	0.211	0.293
Departure Headway (Hd)	6.044	5.412	6.517	5.873	5.31	5.415
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	594	662	547	613	673	660
Service Time	3.806	3.174	4.599	3.873	3.075	3.179
HCM Lane V/C Ratio	0.424	0.329	0.154	0.013	0.212	0.295
HCM Control Delay	13.2	10.8	10.8	9	9.5	10.4
HCM Lane LOS	B	B	B	A	A	B
HCM 95th-tile Q	2.1	1.4	0.5	0	0.8	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	2	245	47
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles, %	0	0	18	41
Mvmt Flow	0	2	282	54
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	328	230	18	469
Demand Flow Rate, veh/h	379	277	18	561
Vehicles Circulating, veh/h	135	260	465	228
Vehicles Exiting, veh/h	654	223	49	309
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.7	8.9	5.3	15.5
Approach LOS	A	A	A	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	379	277	18	561
Cap Entry Lane, veh/h	987	871	710	900
Entry HV Adj Factor	0.866	0.831	1.000	0.836
Flow Entry, veh/h	328	230	18	469
Cap Entry, veh/h	855	724	710	752
V/C Ratio	0.384	0.318	0.025	0.624
Control Delay, s/veh	8.7	8.9	5.3	15.5
LOS	A	A	A	C
95th %tile Queue, veh	2	1	0	4

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	24	2	12	0	1	6	1	0	23	256	8
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	0	50	0	20	0	0	0	0	0	0	13	0
Mvmt Flow	0	28	2	14	0	1	7	1	0	27	301	9
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	10.3	9	10
HCM LOS	B	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	63%	12%	1%	0%
Vol Thru, %	85%	94%	5%	75%	99%	86%
Vol Right, %	0%	6%	32%	12%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	136	38	8	247	284
LT Vol	23	0	24	1	2	0
Through Vol	128	128	2	6	245	245
RT Vol	0	8	12	1	0	39
Lane Flow Rate	178	160	45	9	291	334
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.264	0.242	0.082	0.015	0.403	0.479
Departure Headway (Hd)	5.344	5.449	6.627	5.877	4.99	5.163
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	670	658	538	604	721	698
Service Time	3.092	3.196	4.698	3.959	2.73	2.902
HCM Lane V/C Ratio	0.266	0.243	0.084	0.015	0.404	0.479
HCM Control Delay	10	9.9	10.3	9	11.1	12.6
HCM Lane LOS	A	A	B	A	B	B
HCM 95th-tile Q	1.1	0.9	0.3	0	2	2.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	2	490	39
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	0	0	16	29
Mvmt Flow	0	2	576	46
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	11.9
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	16.8
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	645	219	13	324
Demand Flow Rate, veh/h	785	269	13	400
Vehicles Circulating, veh/h	107	531	855	222
Vehicles Exiting, veh/h	514	337	37	578
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	21.2	13.1	7.8	11.0
Approach LOS	C	B	A	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	785	269	13	400
Cap Entry Lane, veh/h	1015	664	481	905
Entry HV Adj Factor	0.822	0.814	1.000	0.810
Flow Entry, veh/h	645	219	13	324
Cap Entry, veh/h	835	541	481	733
V/C Ratio	0.773	0.405	0.027	0.442
Control Delay, s/veh	21.2	13.1	7.8	11.0
LOS	C	B	A	B
95th %tile Queue, veh	8	2	0	2

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	57	7	17	0	2	3	1	0	41	477	4
Peak Hour Factor	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87
Heavy Vehicles, %	0	47	0	0	0	0	0	0	0	50	18	0
Mvmt Flow	0	66	8	20	0	2	3	1	0	47	548	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	11.5	9.5	14.7
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	70%	33%	2%	0%
Vol Thru, %	85%	98%	9%	50%	98%	72%
Vol Right, %	0%	2%	21%	17%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	280	243	81	6	160	217
LT Vol	41	0	57	2	3	0
Through Vol	239	239	7	3	157	157
RT Vol	0	4	17	1	0	60
Lane Flow Rate	321	279	93	7	183	249
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.553	0.431	0.181	0.012	0.282	0.389
Departure Headway (Hd)	6.2	5.566	6.992	6.434	5.631	5.734
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	575	638	517	559	642	632
Service Time	3.999	3.365	4.992	4.44	3.331	3.434
HCM Lane V/C Ratio	0.558	0.437	0.18	0.013	0.285	0.394
HCM Control Delay	16.5	12.6	11.5	9.5	10.5	12
HCM Lane LOS	C	B	B	A	B	B
HCM 95th-tile Q	3.4	2.2	0.7	0	1.2	1.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	313	60
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles, %	0	0	18	41
Mvmt Flow	0	3	360	69
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	11.4
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	420	293	18	597
Demand Flow Rate, veh/h	485	353	18	714
Vehicles Circulating, veh/h	170	330	593	290
Vehicles Exiting, veh/h	834	281	62	392
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.3	11.5	6.1	30.5
Approach LOS	B	B	A	D

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	485	353	18	714
Cap Entry Lane, veh/h	953	812	624	845
Entry HV Adj Factor	0.865	0.831	1.000	0.836
Flow Entry, veh/h	420	293	18	597
Cap Entry, veh/h	825	675	624	707
V/C Ratio	0.509	0.435	0.029	0.844
Control Delay, s/veh	11.3	11.5	6.1	30.5
LOS	B	B	A	D
95th %tile Queue, veh	3	2	0	10

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	26	2	13	0	1	6	1	0	29	327	10
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	0	50	0	20	0	0	0	0	0	0	13	0
Mvmt Flow	0	31	2	15	0	1	7	1	0	34	385	12
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	10.8	9.5	11.3
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	63%	12%	1%	0%
Vol Thru, %	85%	94%	5%	75%	99%	86%
Vol Right, %	0%	6%	32%	12%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	193	174	41	8	316	363
LT Vol	29	0	26	1	3	0
Through Vol	164	164	2	6	313	313
RT Vol	0	10	13	1	0	50
Lane Flow Rate	226	204	48	9	371	426
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.351	0.322	0.094	0.017	0.528	0.627
Departure Headway (Hd)	5.576	5.683	6.999	6.391	5.123	5.295
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	641	629	508	563	698	678
Service Time	3.356	3.462	5.097	4.391	2.887	3.059
HCM Lane V/C Ratio	0.353	0.324	0.094	0.016	0.532	0.628
HCM Control Delay	11.4	11.2	10.8	9.5	13.5	16.6
HCM Lane LOS	B	B	B	A	B	C
HCM 95th-tile Q	1.6	1.4	0.3	0.1	3.1	4.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	3	625	50
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	0	0	16	29
Mvmt Flow	0	4	735	59
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	15.2
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	311	107	13	157
Demand Flow Rate, veh/h	378	131	13	194
Vehicles Circulating, veh/h	53	260	413	110
Vehicles Exiting, veh/h	251	166	18	281
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.1	6.7	5.0	6.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	378	131	13	194
Cap Entry Lane, veh/h	1072	871	748	1012
Entry HV Adj Factor	0.822	0.819	1.000	0.809
Flow Entry, veh/h	311	107	13	157
Cap Entry, veh/h	881	714	748	819
V/C Ratio	0.353	0.150	0.017	0.192
Control Delay, s/veh	8.1	6.7	5.0	6.4
LOS	A	A	A	A
95th %tile Queue, veh	2	1	0	1

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	44	5	13	0	2	3	1	0	20	231	2
Peak Hour Factor	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87	0.92	0.87	0.87	0.87
Heavy Vehicles, %	0	47	0	0	0	0	0	0	0	50	18	0
Mvmt Flow	0	51	6	15	0	2	3	1	0	23	266	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.7	8.3	9.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	71%	33%	1%	0%
Vol Thru, %	85%	98%	8%	50%	99%	72%
Vol Right, %	0%	2%	21%	17%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	136	118	62	6	77	105
LT Vol	20	0	44	2	1	0
Through Vol	116	116	5	3	76	76
RT Vol	0	2	13	1	0	29
Lane Flow Rate	156	135	71	7	88	120
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.253	0.195	0.117	0.01	0.123	0.171
Departure Headway (Hd)	5.842	5.21	5.911	5.18	5.028	5.133
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	615	689	606	689	713	699
Service Time	3.571	2.938	3.95	3.229	2.758	2.863
HCM Lane V/C Ratio	0.254	0.196	0.117	0.01	0.123	0.172
HCM Control Delay	10.5	9.2	9.7	8.3	8.5	8.9
HCM Lane LOS	B	A	A	A	A	A
HCM 95th-tile Q	1	0.7	0.4	0	0.4	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	151	29
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles, %	0	0	18	41
Mvmt Flow	0	1	174	33
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.7
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	203	142	19	288
Demand Flow Rate, veh/h	234	171	19	345
Vehicles Circulating, veh/h	81	166	287	141
Vehicles Exiting, veh/h	405	140	28	196
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	6.4	4.5	8.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	234	171	19	345
Cap Entry Lane, veh/h	1042	957	848	981
Entry HV Adj Factor	0.866	0.832	1.000	0.835
Flow Entry, veh/h	203	142	19	288
Cap Entry, veh/h	903	797	848	819
V/C Ratio	0.225	0.179	0.022	0.352
Control Delay, s/veh	6.3	6.4	4.5	8.5
LOS	A	A	A	A
95th %tile Queue, veh	1	1	0	2

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	20	2	10	0	1	6	1	0	14	158	5
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	0	50	0	20	0	0	0	0	0	0	13	0
Mvmt Flow	0	24	2	12	0	1	7	1	0	16	186	6
Number of Lanes	0	0	1	0	0	0	1	0	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.4	8.3	8.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	15%	0%	62%	12%	1%	0%
Vol Thru, %	85%	94%	6%	75%	99%	86%
Vol Right, %	0%	6%	31%	12%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	84	32	8	152	175
LT Vol	14	0	20	1	1	0
Through Vol	79	79	2	6	151	151
RT Vol	0	5	10	1	0	24
Lane Flow Rate	109	99	38	9	179	206
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.153	0.141	0.063	0.014	0.239	0.286
Departure Headway (Hd)	5.049	5.153	5.995	5.21	4.821	4.994
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	711	698	598	686	747	721
Service Time	2.77	2.874	4.029	3.248	2.538	2.711
HCM Lane V/C Ratio	0.153	0.142	0.064	0.013	0.24	0.286
HCM Control Delay	8.7	8.7	9.4	8.3	9.1	9.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.5	0.5	0.2	0	0.9	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	1	302	24
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	0	0	16	29
Mvmt Flow	0	1	355	28
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.4
HCM LOS	A

Lane

Attachment 8
Origin-Destination Data

Vehicle Classification Report Summary

Location: SR 58 NORTH OF FAIRVIEW

Count Direction: Northbound / Southbound

Date Range: 3/3/2015 to 3/5/2015

Site Code: 03

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	34	2,252	3,998	152	184	178	42	96	555	404	22	3	642	8,562
Percent	0.4%	26.3%	46.7%	1.8%	2.1%	2.1%	0.5%	1.1%	6.5%	4.7%	0.3%	0.0%	7.5%	100%
Southbound	244	2,107	4,193	374	360	387	59	115	679	381	19	6	213	9,137
Percent	2.7%	23.1%	45.9%	4.1%	3.9%	4.2%	0.6%	1.3%	7.4%	4.2%	0.2%	0.1%	2.3%	100%
Total	278	4,359	8,191	526	544	565	101	211	1,234	785	41	9	855	17,699
Percent	1.6%	24.6%	46.3%	3.0%	3.1%	3.2%	0.6%	1.2%	7.0%	4.4%	0.2%	0.1%	4.8%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

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Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Tuesday, March 03, 2015
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	7	9	1	0	1	0	0	8	1	0	0	4	**32**
1:00 AM	0	5	8	1	0	0	0	0	3	4	0	0	3	**24**
2:00 AM	0	6	10	2	0	1	0	0	6	2	0	0	1	**28**
3:00 AM	0	6	13	0	2	0	0	0	2	1	0	0	1	**25**
4:00 AM	1	18	45	0	2	3	0	0	8	6	0	0	7	**90**
5:00 AM	0	32	102	4	11	2	0	1	8	6	1	0	4	**171**
6:00 AM	1	40	123	4	3	1	1	1	13	9	1	0	9	**206**
7:00 AM	0	40	82	3	5	2	1	2	10	14	1	0	16	**176**
8:00 AM	0	31	73	6	4	11	1	7	11	6	1	0	11	**162**
9:00 AM	1	36	66	2	4	4	1	2	8	10	0	0	20	**154**
10:00 AM	0	29	69	1	6	3	2	0	13	7	1	0	17	**148**
11:00 AM	0	32	85	1	3	2	2	4	11	8	0	0	16	**164**
12:00 PM	3	46	67	4	3	2	3	0	10	6	1	0	11	**156**
1:00 PM	0	36	74	0	2	7	0	3	8	7	0	0	18	**155**
2:00 PM	0	55	75	4	1	4	3	3	8	4	0	0	12	**169**
3:00 PM	0	50	75	1	3	4	1	0	9	4	0	0	9	**156**
4:00 PM	1	66	92	3	0	3	1	1	6	4	0	0	9	**186**
5:00 PM	3	44	76	2	2	2	1	1	7	5	0	0	8	**151**
6:00 PM	1	50	84	3	3	4	0	2	2	2	0	0	6	**157**
7:00 PM	1	26	46	1	1	3	0	0	6	3	0	0	14	**101**
8:00 PM	0	17	42	0	1	0	0	0	4	3	0	0	8	**75**
9:00 PM	0	23	27	1	1	2	0	1	6	3	0	0	3	**67**
10:00 PM	0	7	21	1	0	1	0	0	2	3	0	0	4	**39**
11:00 PM	0	10	12	1	0	0	0	0	1	5	0	0	3	**32**
Total	**13**	**712**	**1,376**	**46**	**57**	**62**	**17**	**28**	**170**	**123**	**6**	**0**	**214**	**2,824**
Percent	**0.5%**	**25.2%**	**48.7%**	**1.6%**	**2.0%**	**2.2%**	**0.6%**	**1.0%**	**6.0%**	**4.4%**	**0.2%**	**0.0%**	**7.6%**	

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Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Tuesday, March 03, 2015
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	2	8	6	1	0	1	0	0	10	4	0	0	0	**32**
1:00 AM	1	1	8	1	0	0	0	0	4	3	0	0	0	**18**
2:00 AM	1	2	2	0	0	2	1	0	7	3	0	0	1	**19**
3:00 AM	0	1	8	0	1	0	0	0	4	1	0	0	1	**16**
4:00 AM	0	12	22	4	2	3	0	0	5	1	0	0	0	**49**
5:00 AM	1	21	40	5	3	1	0	2	11	3	0	0	3	**90**
6:00 AM	1	27	64	5	3	10	2	2	18	4	0	0	7	**143**
7:00 AM	3	47	72	6	5	9	1	4	5	5	0	0	4	**161**
8:00 AM	3	26	81	5	2	8	2	1	9	3	0	0	3	**143**
9:00 AM	3	37	56	6	5	6	2	5	20	8	0	0	7	**155**
10:00 AM	4	27	81	5	7	12	4	1	15	3	0	1	3	**163**
11:00 AM	4	34	94	4	5	7	2	3	11	7	0	0	6	**177**
12:00 PM	10	37	89	8	4	10	3	3	8	1	1	0	5	**179**
1:00 PM	3	35	96	8	1	9	1	4	15	6	0	0	3	**181**
2:00 PM	5	48	85	9	6	2	2	5	13	5	2	0	7	**189**
3:00 PM	4	55	99	9	12	8	0	1	17	14	0	0	7	**226**
4:00 PM	5	61	128	10	4	7	2	2	11	10	1	0	5	**246**
5:00 PM	3	65	156	8	5	13	3	0	11	8	0	0	5	**277**
6:00 PM	3	36	73	4	6	5	0	1	7	3	1	0	2	**141**
7:00 PM	0	20	46	1	4	0	0	1	3	4	0	0	3	**82**
8:00 PM	2	9	31	1	3	2	0	0	6	4	0	0	3	**61**
9:00 PM	0	13	18	4	4	6	0	1	9	4	0	0	1	**60**
10:00 PM	1	17	18	1	1	2	0	1	6	4	0	0	1	**52**
11:00 PM	0	4	10	0	0	1	0	1	3	3	0	0	0	**22**
Total	**59**	**643**	**1,383**	**105**	**83**	**124**	**25**	**38**	**228**	**111**	**5**	**1**	**77**	**2,882**
Percent	**2.0%**	**22.3%**	**48.0%**	**3.6%**	**2.9%**	**4.3%**	**0.9%**	**1.3%**	**7.9%**	**3.9%**	**0.2%**	**0.0%**	**2.7%**	

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Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Wednesday, March 04, 2015
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	6	0	0	1	0	0	6	0	0	0	4	**27**
1:00 AM	0	8	6	3	1	1	0	0	5	3	0	0	3	**30**
2:00 AM	0	5	6	0	0	1	0	0	2	6	0	0	5	**25**
3:00 AM	0	7	14	0	0	0	0	0	2	0	0	0	3	**26**
4:00 AM	1	14	35	0	2	2	0	1	3	2	0	0	7	**67**
5:00 AM	1	23	91	2	6	4	0	0	2	6	0	0	11	**146**
6:00 AM	0	47	124	6	4	6	0	0	6	4	0	0	9	**206**
7:00 AM	1	47	99	3	7	5	2	2	8	20	0	0	14	**208**
8:00 AM	0	29	69	2	1	3	0	3	5	9	1	0	21	**143**
9:00 AM	0	36	69	3	3	3	0	1	13	8	0	0	16	**152**
10:00 AM	0	38	70	7	9	3	1	3	10	6	1	0	11	**159**
11:00 AM	0	48	68	2	1	3	0	2	7	11	1	0	11	**154**
12:00 PM	0	35	81	2	4	4	2	0	5	7	1	0	18	**159**
1:00 PM	1	44	73	4	5	4	1	1	13	8	0	0	14	**168**
2:00 PM	0	63	88	5	2	2	3	5	9	9	2	0	13	**201**
3:00 PM	1	62	67	2	2	1	1	3	9	9	0	0	11	**168**
4:00 PM	0	64	74	1	3	4	1	1	8	3	0	0	13	**172**
5:00 PM	1	67	94	2	2	5	0	0	4	2	0	0	5	**182**
6:00 PM	0	38	73	1	0	1	2	3	2	6	2	0	10	**138**
7:00 PM	0	51	36	2	1	6	0	0	4	6	0	1	4	**111**
8:00 PM	0	32	35	1	1	1	0	2	6	6	0	0	3	**87**
9:00 PM	0	28	27	0	0	4	0	0	9	1	0	0	5	**74**
10:00 PM	0	9	20	1	1	1	0	2	6	8	0	0	2	**50**
11:00 PM	1	7	8	1	1	0	0	2	8	1	0	0	6	**35**
Total	**7**	**812**	**1,333**	**50**	**56**	**65**	**13**	**31**	**152**	**141**	**8**	**1**	**219**	**2,888**
Percent	**0.2%**	**28.1%**	**46.2%**	**1.7%**	**1.9%**	**2.3%**	**0.5%**	**1.1%**	**5.3%**	**4.9%**	**0.3%**	**0.0%**	**7.6%**	

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Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

DATA SOLUTIONS

Wednesday, March 04, 2015
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	6	2	2	1	0	0	3	5	0	0	0	**21**
1:00 AM	0	3	2	0	0	0	0	0	3	3	0	0	0	**11**
2:00 AM	0	6	6	2	0	1	0	0	4	1	0	0	0	**20**
3:00 AM	0	1	5	0	0	0	0	0	4	3	0	0	1	**14**
4:00 AM	4	15	32	7	2	6	1	2	7	4	0	0	1	**81**
5:00 AM	1	17	33	2	3	1	0	0	4	4	0	0	6	**71**
6:00 AM	13	33	70	6	6	13	1	2	13	9	0	0	3	**169**
7:00 AM	6	47	80	6	5	5	0	2	11	6	0	0	4	**172**
8:00 AM	6	31	96	6	7	4	3	1	6	7	3	0	7	**177**
9:00 AM	1	33	73	3	3	2	0	0	10	7	0	0	6	**138**
10:00 AM	4	31	93	8	5	7	1	5	14	9	0	0	5	**182**
11:00 AM	7	46	114	6	10	5	1	4	8	6	0	0	5	**212**
12:00 PM	3	50	89	11	10	6	0	3	10	7	0	0	4	**193**
1:00 PM	5	37	81	6	5	10	0	2	13	4	0	1	3	**167**
2:00 PM	5	62	103	10	5	9	0	1	15	4	1	1	3	**219**
3:00 PM	4	64	96	6	7	16	1	1	8	12	2	0	7	**224**
4:00 PM	3	59	119	6	6	3	0	2	10	10	0	0	0	**218**
5:00 PM	12	87	114	16	18	13	1	0	15	12	0	0	4	**292**
6:00 PM	3	40	83	6	12	3	0	2	10	6	0	0	1	**166**
7:00 PM	1	31	51	5	8	5	0	0	6	5	0	0	5	**117**
8:00 PM	1	13	34	4	3	5	2	0	10	4	0	0	2	**78**
9:00 PM	2	21	17	3	7	0	1	3	1	2	0	0	0	**57**
10:00 PM	0	11	27	3	1	0	0	0	7	3	1	1	1	**55**
11:00 PM	0	4	12	0	0	0	0	0	16	4	0	0	1	**37**
Total	**81**	**744**	**1,436**	**124**	**125**	**115**	**12**	**30**	**208**	**137**	**7**	**3**	**69**	**3,091**
Percent	**2.6%**	**24.1%**	**46.5%**	**4.0%**	**4.0%**	**3.7%**	**0.4%**	**1.0%**	**6.7%**	**4.4%**	**0.2%**	**0.1%**	**2.2%**	

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Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Thursday, March 05, 2015
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	4	0	0	0	0	0	8	4	0	0	1	**18**
1:00 AM	0	11	5	1	0	1	0	1	6	1	0	0	5	**31**
2:00 AM	0	7	6	1	0	0	0	0	7	5	0	0	5	**31**
3:00 AM	0	17	10	2	0	0	0	0	5	2	0	0	4	**40**
4:00 AM	0	18	50	1	2	0	0	0	7	2	0	0	4	**84**
5:00 AM	0	32	70	3	8	4	0	1	8	4	0	0	5	**135**
6:00 AM	2	42	145	1	5	2	1	1	12	2	0	0	5	**218**
7:00 AM	2	47	84	5	10	7	1	2	7	5	1	0	20	**191**
8:00 AM	0	41	77	4	5	1	1	4	15	11	1	0	9	**169**
9:00 AM	1	30	79	2	6	5	0	3	15	6	1	0	10	**158**
10:00 AM	1	45	63	3	3	5	0	4	11	14	0	0	14	**163**
11:00 AM	0	42	66	3	3	2	2	7	17	7	1	1	16	**167**
12:00 PM	2	43	65	8	7	3	0	2	10	9	0	0	14	**163**
1:00 PM	1	53	68	2	5	1	1	1	15	8	1	0	19	**175**
2:00 PM	1	32	80	3	3	3	1	2	11	11	0	0	15	**162**
3:00 PM	0	59	61	2	3	4	0	3	8	5	0	1	15	**161**
4:00 PM	1	63	79	2	4	3	2	2	12	8	1	0	12	**189**
5:00 PM	1	44	85	5	2	1	0	1	10	7	1	0	10	**167**
6:00 PM	0	38	79	4	3	3	1	2	11	7	1	0	4	**153**
7:00 PM	1	17	44	2	2	1	2	0	10	6	0	0	7	**92**
8:00 PM	1	11	29	0	0	2	0	1	9	6	0	0	3	**62**
9:00 PM	0	20	16	1	0	1	0	0	8	4	0	0	5	**55**
10:00 PM	0	9	15	0	0	1	0	0	5	3	0	0	1	**34**
11:00 PM	0	6	9	1	0	1	0	0	6	3	0	0	6	**32**
Total	**14**	**728**	**1,289**	**56**	**71**	**51**	**12**	**37**	**233**	**140**	**8**	**2**	**209**	**2,850**
Percent	**0.5%**	**25.5%**	**45.2%**	**2.0%**	**2.5%**	**1.8%**	**0.4%**	**1.3%**	**8.2%**	**4.9%**	**0.3%**	**0.1%**	**7.3%**	

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Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Thursday, March 05, 2015
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	5	1	0	1	0	1	11	1	0	0	0	**21**
1:00 AM	3	4	4	5	0	5	0	0	4	2	0	0	2	**29**
2:00 AM	0	1	8	1	0	1	0	0	5	0	0	0	1	**17**
3:00 AM	1	6	4	5	2	5	0	1	6	2	0	0	0	**32**
4:00 AM	1	11	26	5	6	4	0	0	12	1	0	0	2	**68**
5:00 AM	1	16	39	2	11	1	0	1	2	3	0	0	2	**78**
6:00 AM	4	35	67	6	6	7	0	1	14	3	0	0	5	**148**
7:00 AM	4	41	69	6	14	6	2	2	6	7	0	0	7	**164**
8:00 AM	5	32	66	5	9	8	5	3	12	8	1	0	3	**157**
9:00 AM	7	32	63	7	5	5	1	4	11	13	1	1	6	**156**
10:00 AM	7	43	71	8	9	11	1	6	14	9	0	0	5	**184**
11:00 AM	10	61	83	14	8	15	0	6	9	12	2	0	1	**221**
12:00 PM	14	53	76	13	6	8	2	4	15	6	0	0	2	**199**
1:00 PM	7	38	82	6	6	17	1	5	20	5	0	0	6	**193**
2:00 PM	5	47	119	9	10	6	3	0	15	8	0	0	5	**227**
3:00 PM	7	64	99	13	8	10	2	6	8	14	1	0	2	**234**
4:00 PM	6	77	139	12	15	11	2	3	6	6	0	0	2	**279**
5:00 PM	5	47	124	10	10	12	0	1	10	8	1	0	6	**234**
6:00 PM	6	37	109	9	14	10	1	1	8	2	0	0	5	**202**
7:00 PM	5	19	41	1	8	3	1	0	8	5	0	0	4	**95**
8:00 PM	0	19	33	1	2	0	0	0	12	4	0	0	0	**71**
9:00 PM	2	17	18	2	2	1	0	1	13	3	1	1	1	**62**
10:00 PM	0	9	19	1	1	0	1	1	14	5	0	0	0	**51**
11:00 PM	4	10	10	3	0	1	0	0	8	6	0	0	0	**42**
Total	**104**	**720**	**1,374**	**145**	**152**	**148**	**22**	**47**	**243**	**133**	**7**	**2**	**67**	**3,164**
Percent	**3.3%**	**22.8%**	**43.4%**	**4.6%**	**4.8%**	**4.7%**	**0.7%**	**1.5%**	**7.7%**	**4.2%**	**0.2%**	**0.1%**	**2.1%**	

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Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	6	6	0	0	1	0	0	7	2	0	0	3	**25**
1:00 AM	0	8	6	2	0	1	0	0	5	3	0	0	4	**29**
2:00 AM	0	6	7	1	0	1	0	0	5	4	0	0	4	**28**
3:00 AM	0	10	12	1	1	0	0	0	3	1	0	0	3	**31**
4:00 AM	1	17	43	0	2	2	0	0	6	3	0	0	6	**80**
5:00 AM	0	29	88	3	8	3	0	1	6	5	0	0	7	**150**
6:00 AM	1	43	131	4	4	3	1	1	10	5	0	0	8	**211**
7:00 AM	1	45	88	4	7	5	1	2	8	13	1	0	17	**192**
8:00 AM	0	34	73	4	3	5	1	5	10	9	1	0	14	**159**
9:00 AM	1	34	71	2	4	4	0	2	12	8	0	0	15	**153**
10:00 AM	0	37	67	4	6	4	1	2	11	9	1	0	14	**156**
11:00 AM	0	41	73	2	2	2	1	4	12	9	1	0	14	**161**
12:00 PM	2	41	71	5	5	3	2	1	8	7	1	0	14	**160**
1:00 PM	1	44	72	2	4	4	1	2	12	8	0	0	17	**167**
2:00 PM	0	50	81	4	2	3	2	3	9	8	1	0	13	**176**
3:00 PM	0	57	68	2	3	3	1	2	9	6	0	0	12	**163**
4:00 PM	1	64	82	2	2	3	1	1	9	5	0	0	11	**181**
5:00 PM	2	52	85	3	2	3	0	1	7	5	0	0	8	**168**
6:00 PM	0	42	79	3	2	3	1	2	5	5	1	0	7	**150**
7:00 PM	1	31	42	2	1	3	1	0	7	5	0	0	8	**101**
8:00 PM	0	20	35	0	1	1	0	1	6	5	0	0	5	**74**
9:00 PM	0	24	23	1	0	2	0	0	8	3	0	0	4	**65**
10:00 PM	0	8	19	1	0	1	0	1	4	5	0	0	2	**41**
11:00 PM	0	8	10	1	0	0	0	1	5	3	0	0	5	**33**
Total	**11**	**751**	**1,332**	**53**	**59**	**60**	**14**	**32**	**184**	**136**	**7**	**0**	**215**	**2,854**
Percent	**0.4%**	**26.3%**	**46.7%**	**1.9%**	**2.1%**	**2.1%**	**0.5%**	**1.1%**	**6.4%**	**4.8%**	**0.2%**	**0.0%**	**7.5%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	1	4	6	1	1	1	0	0	8	3	0	0	0	**25**
1:00 AM	1	3	5	2	0	2	0	0	4	3	0	0	1	**21**
2:00 AM	0	3	5	1	0	1	0	0	5	1	0	0	1	**17**
3:00 AM	0	3	6	2	1	2	0	0	5	2	0	0	1	**22**
4:00 AM	2	13	27	5	3	4	0	1	8	2	0	0	1	**66**
5:00 AM	1	18	37	3	6	1	0	1	6	3	0	0	4	**80**
6:00 AM	6	32	67	6	5	10	1	2	15	5	0	0	5	**154**
7:00 AM	4	45	74	6	8	7	1	3	7	6	0	0	5	**166**
8:00 AM	5	30	81	5	6	7	3	2	9	6	1	0	4	**159**
9:00 AM	4	34	64	5	4	4	1	3	14	9	0	0	6	**148**
10:00 AM	5	34	82	7	7	10	2	4	14	7	0	0	4	**176**
11:00 AM	7	47	97	8	8	9	1	4	9	8	1	0	4	**203**
12:00 PM	9	47	85	11	7	8	2	3	11	5	0	0	4	**192**
1:00 PM	5	37	86	7	4	12	1	4	16	5	0	0	4	**181**
2:00 PM	5	52	102	9	7	6	2	2	14	6	1	0	5	**211**
3:00 PM	5	61	98	9	9	11	1	3	11	13	1	0	5	**227**
4:00 PM	5	66	129	9	8	7	1	2	9	9	0	0	2	**247**
5:00 PM	7	66	131	11	11	13	1	0	12	9	0	0	5	**266**
6:00 PM	4	38	88	6	11	6	0	1	8	4	0	0	3	**169**
7:00 PM	2	23	46	2	7	3	0	0	6	5	0	0	4	**98**
8:00 PM	1	14	33	2	3	2	1	0	9	4	0	0	2	**71**
9:00 PM	1	17	18	3	4	2	0	2	8	3	0	0	1	**59**
10:00 PM	0	12	21	2	1	1	0	1	9	4	0	0	1	**52**
11:00 PM	1	6	11	1	0	1	0	0	9	4	0	0	0	**33**
Total	**81**	**705**	**1,399**	**123**	**121**	**130**	**18**	**38**	**226**	**126**	**4**	**0**	**72**	**3,043**
Percent	**2.7%**	**23.2%**	**46.0%**	**4.0%**	**4.0%**	**4.3%**	**0.6%**	**1.2%**	**7.4%**	**4.1%**	**0.1%**	**0.0%**	**2.4%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	9	7	0	0	1	0	0	7	0	0	0	4	**29**
1:00 AM	0	7	7	2	1	1	0	0	4	3	0	0	3	**28**
2:00 AM	0	5	7	1	0	1	0	0	3	5	0	0	4	**26**
3:00 AM	0	7	14	0	1	0	0	0	2	0	0	0	2	**26**
4:00 AM	1	15	38	0	2	2	0	1	5	3	0	0	7	**75**
5:00 AM	1	26	95	3	8	3	0	0	4	6	0	0	9	**154**
6:00 AM	0	45	124	5	4	4	0	0	8	6	0	0	9	**206**
7:00 AM	1	45	93	3	6	4	2	2	9	18	0	0	15	**197**
8:00 AM	0	30	70	3	2	6	0	4	7	8	1	0	18	**149**
9:00 AM	0	36	68	3	3	3	0	1	11	9	0	0	17	**153**
10:00 AM	0	35	70	5	8	3	1	2	11	6	1	0	13	**155**
11:00 AM	0	43	74	2	2	3	1	3	8	10	1	0	13	**157**
12:00 PM	1	39	76	3	4	3	2	0	7	7	1	0	16	**158**
1:00 PM	1	41	73	3	4	5	1	2	11	8	0	0	15	**164**
2:00 PM	0	60	84	5	2	3	3	4	9	7	1	0	13	**190**
3:00 PM	1	58	70	2	2	2	1	2	9	7	0	0	10	**164**
4:00 PM	0	65	80	2	2	4	1	1	7	3	0	0	12	**177**
5:00 PM	2	59	88	2	2	4	0	0	5	3	0	0	6	**172**
6:00 PM	0	42	77	2	1	2	1	3	2	5	1	0	9	**144**
7:00 PM	0	43	39	2	1	5	0	0	5	5	0	1	7	**108**
8:00 PM	0	27	37	1	1	1	0	1	5	5	0	0	5	**83**
9:00 PM	0	26	27	0	0	3	0	0	8	2	0	0	4	**72**
10:00 PM	0	8	20	1	1	1	0	1	5	6	0	0	3	**46**
11:00 PM	1	8	9	1	1	0	0	1	6	2	0	0	5	**34**
Total	**9**	**779**	**1,347**	**49**	**56**	**64**	**14**	**30**	**158**	**135**	**7**	**1**	**217**	**2,867**
Percent	**0.3%**	**27.2%**	**47.0%**	**1.7%**	**2.0%**	**2.2%**	**0.5%**	**1.0%**	**5.5%**	**4.7%**	**0.3%**	**0.0%**	**7.6%**	

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	4	6	2	1	1	0	0	5	5	0	0	0	**25**
1:00 AM	0	2	4	0	0	0	0	0	3	3	0	0	0	**13**
2:00 AM	0	5	5	1	0	1	0	0	5	2	0	0	0	**20**
3:00 AM	0	1	6	0	0	0	0	0	4	2	0	0	1	**15**
4:00 AM	3	14	29	6	2	5	1	1	6	3	0	0	1	**70**
5:00 AM	1	18	35	3	3	1	0	1	6	4	0	0	5	**77**
6:00 AM	9	31	68	6	5	12	1	2	15	7	0	0	4	**160**
7:00 AM	5	47	77	6	5	6	0	3	9	6	0	0	4	**168**
8:00 AM	5	29	91	6	5	5	3	1	7	6	2	0	6	**166**
9:00 AM	2	34	67	4	4	3	1	2	13	7	0	0	6	**144**
10:00 AM	4	30	89	7	6	9	2	4	14	7	0	0	4	**176**
11:00 AM	6	42	107	5	8	6	1	4	9	6	0	0	5	**200**
12:00 PM	5	46	89	10	8	7	1	3	9	5	0	0	4	**188**
1:00 PM	4	36	86	7	4	10	0	3	14	5	0	1	3	**172**
2:00 PM	5	57	97	10	5	7	1	2	14	4	1	1	4	**209**
3:00 PM	4	61	97	7	9	13	1	1	11	13	1	0	7	**225**
4:00 PM	4	60	122	7	5	4	1	2	10	10	0	0	2	**227**
5:00 PM	9	80	128	13	14	13	2	0	14	11	0	0	4	**287**
6:00 PM	3	39	80	5	10	4	0	2	9	5	0	0	1	**158**
7:00 PM	1	27	49	4	7	3	0	0	5	5	0	0	4	**105**
8:00 PM	1	12	33	3	3	4	1	0	9	4	0	0	2	**72**
9:00 PM	1	18	17	3	6	2	1	2	4	3	0	0	0	**58**
10:00 PM	0	13	24	2	1	1	0	0	7	3	1	1	1	**54**
11:00 PM	0	4	11	0	0	0	0	0	12	4	0	0	1	**32**
Total	**74**	**710**	**1,418**	**118**	**111**	**118**	**16**	**33**	**215**	**128**	**6**	**2**	**72**	**3,021**
Percent	**2.4%**	**23.5%**	**46.9%**	**3.9%**	**3.7%**	**3.9%**	**0.5%**	**1.1%**	**7.1%**	**4.2%**	**0.2%**	**0.1%**	**2.4%**	

Mark Skaggs:425-250-0777
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Vehicle Speed Report Summary

Location: SR 58 NORTH OF FAIRVIEW

Count Direction: Northbound / Southbound

Date Range: 3/3/2015 to 3/5/2015

Site Code: 03

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	6	5	21	139	1,168	1,675	2,002	2,049	1,000	337	111	35	10	2	0	0	2	8,562
Percent	0.1%	0.1%	0.2%	1.6%	13.6%	19.6%	23.4%	23.9%	11.7%	3.9%	1.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	246	182	284	570	1,033	1,507	1,805	1,692	1,150	506	112	33	12	0	2	0	3	9,137
Percent	2.7%	2.0%	3.1%	6.2%	11.3%	16.5%	19.8%	18.5%	12.6%	5.5%	1.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	252	187	305	709	2,201	3,182	3,807	3,741	2,150	843	223	68	22	2	2	0	5	17,699
Percent	1.4%	1.1%	1.7%	4.0%	12.4%	18.0%	21.5%	21.1%	12.1%	4.8%	1.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	38.0	mph	Mean (Average) Speed	38.2	mph
85th Percentile	45.6	mph	10 mph Pace	34.9 - 44.9	mph
95th Percentile	50.6	mph	Percent in Pace	47.6	%
Southbound			**Southbound**		
50th Percentile (Median)	36.9	mph	Mean (Average) Speed	36.1	mph
85th Percentile	46.5	mph	10 mph Pace	33.8 - 43.8	mph
95th Percentile	51.2	mph	Percent in Pace	39.2	%
Allbound			**Allbound**		
50th Percentile (Median)	######	mph	Mean (Average) Speed	######	mph
85th Percentile	######	mph	10 mph Pace	######	mph
95th Percentile	######	mph	Percent in Pace	######	%

Total Study Speeding Fact		
Allbound		
Posted Speed Limit	######	mph
Vehicle Exceeding Speed Limit	#VALUE!	veh
Percentage Exceeding Speed Limit	######	%
Mean Exceeding Speed	######	mph

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Tuesday, March 03, 2015
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	2	3	6	7	3	5	2	4	0	0	0	0	0	0	0	**32**
1:00 AM	0	0	0	1	5	4	5	5	1	2	0	1	0	0	0	0	0	**24**
2:00 AM	0	0	0	0	7	3	6	4	7	0	0	1	0	0	0	0	0	**28**
3:00 AM	0	0	0	0	1	5	7	3	6	3	0	0	0	0	0	0	0	**25**
4:00 AM	0	0	0	3	13	7	19	30	10	5	2	1	0	0	0	0	0	**90**
5:00 AM	0	0	0	1	14	25	38	56	30	5	1	1	0	0	0	0	0	**171**
6:00 AM	0	1	1	2	18	32	64	52	22	9	5	0	0	0	0	0	0	**206**
7:00 AM	0	1	0	1	28	39	39	52	10	4	1	1	0	0	0	0	0	**176**
8:00 AM	0	0	0	2	30	38	35	36	17	1	2	1	0	0	0	0	0	**162**
9:00 AM	1	0	0	4	50	34	30	22	5	8	0	0	0	0	0	0	0	**154**
10:00 AM	0	0	0	5	23	41	34	30	7	5	3	0	0	0	0	0	0	**148**
11:00 AM	0	0	0	8	26	42	25	39	19	5	0	0	0	0	0	0	0	**164**
12:00 PM	0	1	1	3	25	39	28	34	22	3	0	0	0	0	0	0	0	**156**
1:00 PM	0	0	1	1	37	26	31	38	20	1	0	0	0	0	0	0	0	**155**
2:00 PM	0	0	0	1	32	31	36	42	19	4	2	1	0	0	0	0	1	**169**
3:00 PM	0	0	0	2	17	18	50	41	18	7	2	1	0	0	0	0	0	**156**
4:00 PM	0	0	0	2	12	37	44	58	21	7	4	1	0	0	0	0	0	**186**
5:00 PM	0	0	0	3	23	30	37	35	18	4	1	0	0	0	0	0	0	**151**
6:00 PM	0	0	0	1	6	23	46	44	22	8	4	3	0	0	0	0	0	**157**
7:00 PM	0	0	0	3	19	9	17	24	21	5	3	0	0	0	0	0	0	**101**
8:00 PM	0	0	0	1	9	12	19	18	13	3	0	0	0	0	0	0	0	**75**
9:00 PM	0	0	0	1	5	14	11	18	11	4	3	0	0	0	0	0	0	**67**
10:00 PM	0	0	0	0	7	5	17	6	2	1	1	0	0	0	0	0	0	**39**
11:00 PM	0	0	0	0	7	5	7	6	5	1	1	0	0	0	0	0	0	**32**
Total	**1**	**3**	**5**	**48**	**420**	**526**	**648**	**698**	**328**	**99**	**35**	**12**	**0**	**0**	**0**	**0**	**1**	**2,824**
Percent	**0.0%**	**0.1%**	**0.2%**	**1.7%**	**14.9%**	**18.6%**	**22.9%**	**24.7%**	**11.6%**	**3.5%**	**1.2%**	**0.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	38.3	mph	Mean (Average) Speed	38.0	mph
85th Percentile	45.6	mph	10 mph Pace	35.1 - 45.1	mph
95th Percentile	50.1	mph	Percent in Pace	47.9	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Tuesday, March 03, 2015
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	4	8	7	3	0	4	3	0	0	0	0	0	0	**32**
1:00 AM	0	0	0	0	1	3	5	4	3	1	0	1	0	0	0	0	0	**18**
2:00 AM	0	0	0	0	4	5	5	2	2	0	1	0	0	0	0	0	0	**19**
3:00 AM	0	0	0	2	0	1	1	3	5	4	0	0	0	0	0	0	0	**16**
4:00 AM	0	0	0	1	4	3	8	16	11	3	1	2	0	0	0	0	0	**49**
5:00 AM	0	0	0	7	10	12	16	17	19	7	2	0	0	0	0	0	0	**90**
6:00 AM	3	1	4	8	16	19	24	32	22	12	2	0	0	0	0	0	0	**143**
7:00 AM	26	15	9	8	15	14	24	18	22	10	0	0	0	0	0	0	0	**161**
8:00 AM	0	1	3	7	11	29	36	31	13	10	2	0	0	0	0	0	0	**143**
9:00 AM	0	0	6	11	26	34	30	24	16	7	1	0	0	0	0	0	0	**155**
10:00 AM	0	0	1	7	18	38	43	36	11	9	0	0	0	0	0	0	0	**163**
11:00 AM	0	0	3	11	35	38	28	38	18	6	0	0	0	0	0	0	0	**177**
12:00 PM	2	8	7	14	24	19	31	36	24	14	0	0	0	0	0	0	0	**179**
1:00 PM	2	1	1	5	23	31	51	35	22	9	1	0	0	0	0	0	0	**181**
2:00 PM	0	0	6	16	22	38	43	34	22	5	2	0	0	0	0	0	1	**189**
3:00 PM	6	11	15	13	28	38	53	37	18	7	0	0	0	0	0	0	0	**226**
4:00 PM	11	12	6	10	31	52	40	43	28	12	1	0	0	0	0	0	0	**246**
5:00 PM	10	9	12	24	36	46	35	41	44	14	4	2	0	0	0	0	0	**277**
6:00 PM	0	0	3	11	9	20	23	31	23	17	3	1	0	0	0	0	0	**141**
7:00 PM	0	0	1	2	4	7	14	19	21	12	2	0	0	0	0	0	0	**82**
8:00 PM	0	0	0	3	1	6	13	14	19	3	2	0	0	0	0	0	0	**61**
9:00 PM	0	0	0	1	6	10	14	16	11	2	0	0	0	0	0	0	0	**60**
10:00 PM	0	0	1	3	4	11	10	11	7	3	1	0	1	0	0	0	0	**52**
11:00 PM	0	0	0	1	1	2	3	7	3	4	1	0	0	0	0	0	0	**22**
Total	**60**	**58**	**78**	**168**	**333**	**484**	**557**	**548**	**384**	**175**	**29**	**6**	**1**	**0**	**0**	**0**	**1**	**2,882**
Percent	**2.1%**	**2.0%**	**2.7%**	**5.8%**	**11.6%**	**16.8%**	**19.3%**	**19.0%**	**13.3%**	**6.1%**	**1.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	37.4	mph	Mean (Average) Speed	36.4	mph
85th Percentile	46.5	mph	10 mph Pace	33.8 - 43.8	mph
95th Percentile	51.0	mph	Percent in Pace	38.9	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Wednesday, March 04, 2015
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	5	2	7	8	3	0	0	1	0	0	0	0	0	**27**
1:00 AM	0	0	0	2	7	6	8	3	2	1	1	0	0	0	0	0	0	**30**
2:00 AM	0	0	0	3	7	5	4	3	3	0	0	0	0	0	0	0	0	**25**
3:00 AM	0	0	0	1	2	3	6	6	5	2	1	0	0	0	0	0	0	**26**
4:00 AM	0	0	0	0	7	11	11	18	13	4	3	0	0	0	0	0	0	**67**
5:00 AM	0	0	0	0	14	14	35	42	29	8	4	0	0	0	0	0	0	**146**
6:00 AM	1	0	0	2	22	38	49	50	29	9	4	2	0	0	0	0	0	**206**
7:00 AM	0	0	0	2	21	42	54	59	19	8	3	0	0	0	0	0	0	**208**
8:00 AM	0	0	0	4	25	34	29	26	17	7	1	0	0	0	0	0	0	**143**
9:00 AM	0	0	0	0	38	24	34	35	15	4	2	0	0	0	0	0	0	**152**
10:00 AM	0	0	0	3	13	33	56	33	10	7	3	0	1	0	0	0	0	**159**
11:00 AM	0	0	3	3	19	23	40	43	17	5	1	0	0	0	0	0	0	**154**
12:00 PM	0	0	3	0	21	34	35	41	17	6	1	1	0	0	0	0	0	**159**
1:00 PM	0	0	0	3	19	41	37	36	16	14	2	0	0	0	0	0	0	**168**
2:00 PM	0	0	0	5	33	46	48	42	21	4	1	1	0	0	0	0	0	**201**
3:00 PM	2	0	1	2	14	40	44	36	16	7	4	2	0	0	0	0	0	**168**
4:00 PM	0	1	0	0	20	26	47	42	25	10	0	0	0	1	0	0	0	**172**
5:00 PM	1	0	0	3	15	16	34	59	35	7	6	4	2	0	0	0	0	**182**
6:00 PM	0	0	0	3	15	30	31	34	20	2	2	0	0	0	0	0	1	**138**
7:00 PM	0	0	1	3	14	15	33	34	11	0	0	0	0	0	0	0	0	**111**
8:00 PM	0	0	1	2	14	19	28	17	5	0	1	0	0	0	0	0	0	**87**
9:00 PM	0	0	0	1	9	14	22	17	6	2	3	0	0	0	0	0	0	**74**
10:00 PM	0	0	1	1	9	13	10	8	5	3	0	0	0	0	0	0	0	**50**
11:00 PM	0	0	0	0	7	10	8	6	3	1	0	0	0	0	0	0	0	**35**
Total	**4**	**1**	**10**	**44**	**370**	**539**	**710**	**698**	**342**	**111**	**43**	**11**	**3**	**1**	**0**	**0**	**1**	**2,888**
Percent	**0.1%**	**0.0%**	**0.3%**	**1.5%**	**12.8%**	**18.7%**	**24.6%**	**24.2%**	**11.8%**	**3.8%**	**1.5%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	38.3	mph	Mean (Average) Speed	38.4	mph
85th Percentile	45.9	mph	10 mph Pace	34.2 - 44.2	mph
95th Percentile	50.8	mph	Percent in Pace	49.0	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Wednesday, March 04, 2015
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	2	2	3	5	3	3	2	0	0	0	0	0	0	**21**
1:00 AM	0	0	0	0	0	2	3	4	1	0	1	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	1	1	3	4	3	6	2	0	0	0	0	0	0	0	**20**
3:00 AM	0	0	0	0	0	0	5	6	0	3	0	0	0	0	0	0	0	**14**
4:00 AM	0	0	0	2	5	9	17	23	11	9	5	0	0	0	0	0	0	**81**
5:00 AM	0	0	0	0	6	6	11	16	24	7	1	0	0	0	0	0	0	**71**
6:00 AM	19	4	4	8	13	30	26	33	18	11	1	1	1	0	0	0	0	**169**
7:00 AM	0	0	3	2	8	29	36	40	32	12	5	0	4	0	0	0	1	**172**
8:00 AM	1	3	6	13	10	24	36	42	23	14	2	1	2	0	0	0	0	**177**
9:00 AM	0	3	3	5	14	17	27	31	27	8	3	0	0	0	0	0	0	**138**
10:00 AM	1	5	7	9	32	31	31	36	22	7	1	0	0	0	0	0	0	**182**
11:00 AM	0	0	9	19	11	36	51	52	27	6	0	1	0	0	0	0	0	**212**
12:00 PM	0	1	4	11	23	32	48	40	20	14	0	0	0	0	0	0	0	**193**
1:00 PM	0	0	0	5	15	30	40	48	19	5	4	1	0	0	0	0	0	**167**
2:00 PM	2	7	25	15	36	30	40	34	19	11	0	0	0	0	0	0	0	**219**
3:00 PM	27	10	10	18	30	48	31	25	18	7	0	0	0	0	0	0	0	**224**
4:00 PM	1	1	1	13	21	41	49	52	27	11	0	1	0	0	0	0	0	**218**
5:00 PM	48	15	11	28	40	31	52	27	28	9	2	1	0	0	0	0	0	**292**
6:00 PM	0	6	6	8	15	28	24	40	17	11	7	2	1	0	0	0	1	**166**
7:00 PM	0	0	1	12	27	22	24	18	11	1	0	1	0	0	0	0	0	**117**
8:00 PM	0	0	0	5	12	19	27	11	2	1	1	0	0	0	0	0	0	**78**
9:00 PM	0	0	0	0	2	12	19	6	7	0	2	8	0	0	1	0	0	**57**
10:00 PM	0	0	0	7	4	9	10	12	8	3	2	0	0	0	0	0	0	**55**
11:00 PM	0	0	1	2	4	11	4	8	3	2	2	0	0	0	0	0	0	**37**
Total	**99**	**55**	**91**	**184**	**331**	**502**	**618**	**612**	**373**	**157**	**41**	**17**	**8**	**0**	**1**	**0**	**2**	**3,091**
Percent	**3.2%**	**1.8%**	**2.9%**	**6.0%**	**10.7%**	**16.2%**	**20.0%**	**19.8%**	**12.1%**	**5.1%**	**1.3%**	**0.5%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	37.1	mph	Mean (Average) Speed	36.2	mph
85th Percentile	46.5	mph	10 mph Pace	33.8 - 43.8	mph
95th Percentile	51.4	mph	Percent in Pace	40.6	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Thursday, March 05, 2015
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	3	4	7	2	1	1	0	0	0	0	0	0	0	0	**18**
1:00 AM	0	0	0	3	10	5	6	4	2	0	1	0	0	0	0	0	0	**31**
2:00 AM	0	0	0	1	9	6	5	4	3	3	0	0	0	0	0	0	0	**31**
3:00 AM	0	1	0	0	4	9	8	6	7	1	3	1	0	0	0	0	0	**40**
4:00 AM	0	0	0	0	8	18	15	17	21	5	0	0	0	0	0	0	0	**84**
5:00 AM	0	0	0	0	5	14	22	35	41	12	4	2	0	0	0	0	0	**135**
6:00 AM	1	0	0	0	17	26	57	61	38	16	2	0	0	0	0	0	0	**218**
7:00 AM	0	0	0	1	18	54	49	34	23	10	1	1	0	0	0	0	0	**191**
8:00 AM	0	0	0	2	12	47	39	42	13	8	3	2	1	0	0	0	0	**169**
9:00 AM	0	0	2	3	20	36	45	39	8	4	1	0	0	0	0	0	0	**158**
10:00 AM	0	0	0	3	29	35	38	37	18	2	0	1	0	0	0	0	0	**163**
11:00 AM	0	0	0	3	20	39	53	26	19	4	3	0	0	0	0	0	0	**167**
12:00 PM	0	0	2	4	25	34	31	45	15	5	1	1	0	0	0	0	0	**163**
1:00 PM	0	0	0	6	28	39	41	41	8	8	3	1	0	0	0	0	0	**175**
2:00 PM	0	0	0	1	36	40	32	30	16	5	2	0	0	0	0	0	0	**162**
3:00 PM	0	0	0	2	31	38	37	29	12	8	1	2	1	0	0	0	0	**161**
4:00 PM	0	0	0	3	28	33	31	54	27	7	2	0	4	0	0	0	0	**189**
5:00 PM	0	0	0	2	24	26	27	51	23	11	2	0	0	1	0	0	0	**167**
6:00 PM	0	0	0	0	11	39	41	39	11	10	2	0	0	0	0	0	0	**153**
7:00 PM	0	0	0	2	10	24	28	17	6	4	1	0	0	0	0	0	0	**92**
8:00 PM	0	0	0	2	7	14	12	17	7	3	0	0	0	0	0	0	0	**62**
9:00 PM	0	0	0	4	9	9	18	8	6	1	0	0	0	0	0	0	0	**55**
10:00 PM	0	0	2	1	4	7	5	12	2	0	1	0	0	0	0	0	0	**34**
11:00 PM	0	0	0	1	9	11	2	4	3	0	0	1	1	0	0	0	0	**32**
Total	**1**	**1**	**6**	**47**	**378**	**610**	**644**	**653**	**330**	**127**	**33**	**12**	**7**	**1**	**0**	**0**	**0**	**2,850**
Percent	**0.0%**	**0.0%**	**0.2%**	**1.6%**	**13.3%**	**21.4%**	**22.6%**	**22.9%**	**11.6%**	**4.5%**	**1.2%**	**0.4%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	37.8	mph	Mean (Average) Speed	38.2	mph
85th Percentile	45.6	mph	10 mph Pace	34.0 - 44.0	mph
95th Percentile	51.0	mph	Percent in Pace	46.2	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Thursday, March 05, 2015
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	2	6	3	5	1	4	0	0	0	0	0	0	0	0	**21**
1:00 AM	0	0	0	3	11	5	6	1	1	2	0	0	0	0	0	0	0	**29**
2:00 AM	0	0	0	1	3	1	3	2	4	1	1	1	0	0	0	0	0	**17**
3:00 AM	0	0	0	0	0	5	9	7	6	1	1	3	0	0	0	0	0	**32**
4:00 AM	0	0	0	4	11	14	14	17	7	1	0	0	0	0	0	0	0	**68**
5:00 AM	0	0	0	0	1	11	10	20	22	11	3	0	0	0	0	0	0	**78**
6:00 AM	0	0	0	3	12	28	38	22	31	10	2	2	0	0	0	0	0	**148**
7:00 AM	2	3	4	3	14	23	42	34	25	11	2	0	0	0	1	0	0	**164**
8:00 AM	0	0	1	4	13	30	29	29	28	19	3	1	0	0	0	0	0	**157**
9:00 AM	0	0	3	11	12	36	33	23	23	11	4	0	0	0	0	0	0	**156**
10:00 AM	16	1	5	9	21	38	43	25	22	3	1	0	0	0	0	0	0	**184**
11:00 AM	12	7	12	7	35	39	48	32	20	7	2	0	0	0	0	0	0	**221**
12:00 PM	14	15	23	14	14	28	37	38	9	6	1	0	0	0	0	0	0	**199**
1:00 PM	0	2	10	24	40	38	42	20	8	4	4	1	0	0	0	0	0	**193**
2:00 PM	4	6	7	28	19	27	50	47	22	13	4	0	0	0	0	0	0	**227**
3:00 PM	10	8	19	21	37	34	36	30	27	8	4	0	0	0	0	0	0	**234**
4:00 PM	15	14	6	24	30	34	46	58	37	10	2	0	3	0	0	0	0	**279**
5:00 PM	9	10	8	12	28	48	47	31	22	18	1	0	0	0	0	0	0	**234**
6:00 PM	4	3	16	32	26	25	25	38	24	6	2	1	0	0	0	0	0	**202**
7:00 PM	1	0	0	3	13	21	20	15	12	9	1	0	0	0	0	0	0	**95**
8:00 PM	0	0	0	1	6	4	17	15	16	10	1	1	0	0	0	0	0	**71**
9:00 PM	0	0	0	5	7	14	15	11	4	5	1	0	0	0	0	0	0	**62**
10:00 PM	0	0	0	3	7	8	8	7	11	6	1	0	0	0	0	0	0	**51**
11:00 PM	0	0	1	4	3	7	7	9	8	2	1	0	0	0	0	0	0	**42**
Total	**87**	**69**	**115**	**218**	**369**	**521**	**630**	**532**	**393**	**174**	**42**	**10**	**3**	**0**	**1**	**0**	**0**	**3,164**
Percent	**2.7%**	**2.2%**	**3.6%**	**6.9%**	**11.7%**	**16.5%**	**19.9%**	**16.8%**	**12.4%**	**5.5%**	**1.3%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	36.7	mph	Mean (Average) Speed	35.7	mph
85th Percentile	46.3	mph	10 mph Pace	31.5 - 41.5	mph
95th Percentile	51.2	mph	Percent in Pace	38.5	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	2	5	5	4	5	2	1	0	0	0	0	0	0	0	**25**
1:00 AM	0	0	0	2	7	5	6	4	2	1	1	0	0	0	0	0	0	**28**
2:00 AM	0	0	0	1	8	5	5	4	4	1	0	0	0	0	0	0	0	**28**
3:00 AM	0	0	0	0	2	6	7	5	6	2	1	0	0	0	0	0	0	**29**
4:00 AM	0	0	0	1	9	12	15	22	15	5	2	0	0	0	0	0	0	**81**
5:00 AM	0	0	0	0	11	18	32	44	33	8	3	1	0	0	0	0	0	**150**
6:00 AM	1	0	0	1	19	32	57	54	30	11	4	1	0	0	0	0	0	**210**
7:00 AM	0	0	0	1	22	45	47	48	17	7	2	1	0	0	0	0	0	**190**
8:00 AM	0	0	0	3	22	40	34	35	16	5	2	1	0	0	0	0	0	**158**
9:00 AM	0	0	1	2	36	31	36	32	9	5	1	0	0	0	0	0	0	**153**
10:00 AM	0	0	0	4	22	36	43	33	12	5	2	0	0	0	0	0	0	**157**
11:00 AM	0	0	1	5	22	35	39	36	18	5	1	0	0	0	0	0	0	**162**
12:00 PM	0	0	2	2	24	36	31	40	18	5	1	1	0	0	0	0	0	**160**
1:00 PM	0	0	0	3	28	35	36	38	15	8	2	0	0	0	0	0	0	**165**
2:00 PM	0	0	0	2	34	39	39	38	19	4	2	1	0	0	0	0	0	**178**
3:00 PM	1	0	0	2	21	32	44	35	15	7	2	2	0	0	0	0	0	**161**
4:00 PM	0	0	0	2	20	32	41	51	24	8	2	0	1	0	0	0	0	**181**
5:00 PM	0	0	0	3	21	24	33	48	25	7	3	1	1	0	0	0	0	**166**
6:00 PM	0	0	0	1	11	31	39	39	18	7	3	1	0	0	0	0	0	**150**
7:00 PM	0	0	0	3	14	16	26	25	13	3	1	0	0	0	0	0	0	**101**
8:00 PM	0	0	0	2	10	15	20	17	8	2	0	0	0	0	0	0	0	**74**
9:00 PM	0	0	0	2	8	12	17	14	8	2	2	0	0	0	0	0	0	**65**
10:00 PM	0	0	1	1	7	8	11	9	3	1	1	0	0	0	0	0	0	**42**
11:00 PM	0	0	0	0	8	9	6	5	4	1	0	0	0	0	0	0	0	**33**
Total	**2**	**0**	**6**	**45**	**391**	**559**	**668**	**681**	**334**	**111**	**38**	**10**	**2**	**0**	**0**	**0**	**0**	**2,847**
Percent	**0.1%**	**0.0%**	**0.2%**	**1.6%**	**13.7%**	**19.6%**	**23.5%**	**23.9%**	**11.7%**	**3.9%**	**1.3%**	**0.4%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	38.0	mph	Mean (Average) Speed	38.2	mph
85th Percentile	45.6	mph	10 mph Pace	34.9 - 44.9	mph
95th Percentile	50.6	mph	Percent in Pace	47.6	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 03

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	2	4	4	5	3	2	2	2	0	0	0	0	0	0	**24**
1:00 AM	0	0	0	1	4	3	5	3	2	1	0	0	0	0	0	0	0	**19**
2:00 AM	0	0	0	1	3	3	4	2	4	1	1	0	0	0	0	0	0	**19**
3:00 AM	0	0	0	1	0	2	5	5	4	3	0	1	0	0	0	0	0	**21**
4:00 AM	0	0	0	2	7	9	13	19	10	4	2	1	0	0	0	0	0	**67**
5:00 AM	0	0	0	2	6	10	12	18	22	8	2	0	0	0	0	0	0	**80**
6:00 AM	7	2	3	6	14	26	29	29	24	11	2	1	0	0	0	0	0	**154**
7:00 AM	9	6	5	4	12	22	34	31	26	11	2	0	1	0	0	0	0	**163**
8:00 AM	0	1	3	8	11	28	34	34	21	14	2	1	1	0	0	0	0	**158**
9:00 AM	0	1	4	9	17	29	30	26	22	9	3	0	0	0	0	0	0	**150**
10:00 AM	6	2	4	8	24	36	39	32	18	6	1	0	0	0	0	0	0	**176**
11:00 AM	4	2	8	12	27	38	42	41	22	6	1	0	0	0	0	0	0	**203**
12:00 PM	5	8	11	13	20	26	39	38	18	11	0	0	0	0	0	0	0	**189**
1:00 PM	1	1	4	11	26	33	44	34	16	6	3	1	0	0	0	0	0	**180**
2:00 PM	2	4	13	20	26	32	44	38	21	10	2	0	0	0	0	0	0	**212**
3:00 PM	14	10	15	17	32	40	40	31	21	7	1	0	0	0	0	0	0	**228**
4:00 PM	9	9	4	16	27	42	45	51	31	11	1	0	1	0	0	0	0	**247**
5:00 PM	22	11	10	21	35	42	45	33	31	14	2	1	0	0	0	0	0	**267**
6:00 PM	1	3	8	17	17	24	24	36	21	11	4	1	0	0	0	0	0	**167**
7:00 PM	0	0	1	6	15	17	19	17	15	7	1	0	0	0	0	0	0	**98**
8:00 PM	0	0	0	3	6	10	19	13	12	5	1	0	0	0	0	0	0	**69**
9:00 PM	0	0	0	2	5	12	16	11	7	2	1	3	0	0	0	0	0	**59**
10:00 PM	0	0	0	4	5	9	9	10	9	4	1	0	0	0	0	0	0	**51**
11:00 PM	0	0	1	2	3	7	5	8	5	3	1	0	0	0	0	0	0	**35**
Total	**80**	**60**	**94**	**188**	**346**	**504**	**601**	**563**	**384**	**167**	**36**	**10**	**3**	**0**	**0**	**0**	**0**	**3,036**
Percent	**2.6%**	**2.0%**	**3.1%**	**6.2%**	**11.4%**	**16.6%**	**19.8%**	**18.5%**	**12.6%**	**5.5%**	**1.2%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	36.9	mph	Mean (Average) Speed	36.1	mph
85th Percentile	46.5	mph	10 mph Pace	33.8 - 43.8	mph
95th Percentile	51.2	mph	Percent in Pace	39.2	%

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Location: SR 58 NORTH OF FAIRVIEW
Date Range: 3/3/2015 - 3/9/2015
Site Code: 03

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	3/3/2015			3/4/2015			3/5/2015			3/6/2015			3/7/2015			3/8/2015			3/9/2015					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	32	32	64	27	21	48	18	21	39	-	-	-	-	-	-	-	-	-	-	-	-	26	25	50
1:00 AM	24	18	42	30	11	41	31	29	60	-	-	-	-	-	-	-	-	-	-	-	-	28	19	48
2:00 AM	28	19	47	25	20	45	31	17	48	-	-	-	-	-	-	-	-	-	-	-	-	28	19	47
3:00 AM	25	16	41	26	14	40	40	32	72	-	-	-	-	-	-	-	-	-	-	-	-	30	21	51
4:00 AM	90	49	139	67	81	148	84	68	152	-	-	-	-	-	-	-	-	-	-	-	-	80	66	146
5:00 AM	171	90	261	146	71	217	135	78	213	-	-	-	-	-	-	-	-	-	-	-	-	151	80	230
6:00 AM	206	143	349	206	169	375	218	148	366	-	-	-	-	-	-	-	-	-	-	-	-	210	153	363
7:00 AM	176	161	337	208	172	380	191	164	355	-	-	-	-	-	-	-	-	-	-	-	-	192	166	357
8:00 AM	162	143	305	143	177	320	169	157	326	-	-	-	-	-	-	-	-	-	-	-	-	158	159	317
9:00 AM	154	155	309	152	138	290	158	156	314	-	-	-	-	-	-	-	-	-	-	-	-	155	150	304
10:00 AM	148	163	311	159	182	341	163	184	347	-	-	-	-	-	-	-	-	-	-	-	-	157	176	333
11:00 AM	164	177	341	154	212	366	167	221	388	-	-	-	-	-	-	-	-	-	-	-	-	162	203	365
12:00 PM	156	179	335	159	193	352	163	199	362	-	-	-	-	-	-	-	-	-	-	-	-	159	190	350
1:00 PM	155	181	336	168	167	335	175	193	368	-	-	-	-	-	-	-	-	-	-	-	-	166	180	346
2:00 PM	169	189	358	201	219	420	162	227	389	-	-	-	-	-	-	-	-	-	-	-	-	177	212	389
3:00 PM	156	226	382	168	224	392	161	234	395	-	-	-	-	-	-	-	-	-	-	-	-	162	228	390
4:00 PM	186	246	432	172	218	390	189	279	468	-	-	-	-	-	-	-	-	-	-	-	-	182	248	430
5:00 PM	151	277	428	182	292	474	167	234	401	-	-	-	-	-	-	-	-	-	-	-	-	167	268	434
6:00 PM	157	141	298	138	166	304	153	202	355	-	-	-	-	-	-	-	-	-	-	-	-	149	170	319
7:00 PM	101	82	183	111	117	228	92	95	187	-	-	-	-	-	-	-	-	-	-	-	-	101	98	199
8:00 PM	75	61	136	87	78	165	62	71	133	-	-	-	-	-	-	-	-	-	-	-	-	75	70	145
9:00 PM	67	60	127	74	57	131	55	62	117	-	-	-	-	-	-	-	-	-	-	-	-	65	60	125
10:00 PM	39	52	91	50	55	105	34	51	85	-	-	-	-	-	-	-	-	-	-	-	-	41	53	94
11:00 PM	32	22	54	35	37	72	32	42	74	-	-	-	-	-	-	-	-	-	-	-	-	33	34	67
Total	**2,824**	**2,882**	**5,706**	**2,888**	**3,091**	**5,979**	**2,850**	**3,164**	**6,014**	-	-	-	-	-	-	-	-	-	-	-	-	**2,854**	**3,046**	**5,900**
Percent	**49%**	**51%**	-	**48%**	**52%**	-	**47%**	**53%**	-	-	-	-	-	-	-	-	-	-	-	-	-	**48%**	**52%**	-

1. Mid-week average includes data between Tuesday and Thursday.

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Vehicle Classification Report Summary

Location: SR 200 EAST OF FAIRVIEW

Count Direction: Eastbound / Westbound

Date Range: 3/3/2015 to 3/5/2015

Site Code: 04

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	22	1,114	2,094	113	269	68	40	68	545	338	17	0	307	4,995
Percent	0.4%	22.3%	41.9%	2.3%	5.4%	1.4%	0.8%	1.4%	10.9%	6.8%	0.3%	0.0%	6.1%	100%
Westbound	44	1,480	1,439	86	154	290	41	143	261	264	18	4	475	4,699
Percent	0.9%	31.5%	30.6%	1.8%	3.3%	6.2%	0.9%	3.0%	5.6%	5.6%	0.4%	0.1%	10.1%	100%
Total	66	2,594	3,533	199	423	358	81	211	806	602	35	4	782	9,694
Percent	0.7%	26.8%	36.4%	2.1%	4.4%	3.7%	0.8%	2.2%	8.3%	6.2%	0.4%	0.0%	8.1%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Mark Skaggs:425-250-0777
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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Tuesday, March 03, 2015
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	4	0	0	0	0	0	9	2	0	0	1	**17**
1:00 AM	0	1	3	0	0	0	0	0	6	3	0	0	1	**14**
2:00 AM	0	4	1	1	0	0	0	0	6	2	0	0	1	**15**
3:00 AM	0	2	11	0	1	1	0	0	6	1	0	0	2	**24**
4:00 AM	0	13	41	0	0	0	0	0	9	4	0	0	2	**69**
5:00 AM	0	14	67	3	17	0	0	2	10	4	0	0	3	**120**
6:00 AM	1	12	73	5	16	3	2	3	6	7	0	0	5	**133**
7:00 AM	0	28	58	5	9	0	1	2	5	11	0	0	21	**140**
8:00 AM	1	25	48	4	4	2	3	1	7	13	0	0	10	**118**
9:00 AM	0	21	37	4	1	4	0	2	15	6	0	0	4	**94**
10:00 AM	0	27	48	3	2	4	2	0	9	5	0	0	18	**118**
11:00 AM	0	29	29	1	4	2	0	1	5	9	0	0	6	**86**
12:00 PM	0	26	41	0	2	1	2	1	10	5	0	0	8	**96**
1:00 PM	1	24	49	0	1	3	1	3	4	3	0	0	5	**94**
2:00 PM	0	30	34	0	2	3	1	0	8	6	0	0	3	**87**
3:00 PM	0	41	47	1	6	0	0	0	13	4	1	0	2	**115**
4:00 PM	0	44	33	2	1	1	1	1	5	9	0	0	7	**104**
5:00 PM	0	37	52	6	4	2	0	0	10	4	1	0	6	**122**
6:00 PM	0	16	40	1	2	0	1	1	3	4	1	0	4	**73**
7:00 PM	0	12	18	0	1	0	0	0	6	1	0	0	1	**39**
8:00 PM	0	8	13	0	1	0	0	1	4	3	0	0	3	**33**
9:00 PM	0	9	14	0	0	0	0	0	5	7	0	0	1	**36**
10:00 PM	0	5	5	0	0	0	0	1	8	5	0	0	2	**26**
11:00 PM	1	4	7	0	1	0	0	0	1	3	0	0	1	**18**
Total	**4**	**433**	**773**	**36**	**75**	**26**	**14**	**19**	**170**	**121**	**3**	**0**	**117**	**1,791**
Percent	**0.2%**	**24.2%**	**43.2%**	**2.0%**	**4.2%**	**1.5%**	**0.8%**	**1.1%**	**9.5%**	**6.8%**	**0.2%**	**0.0%**	**6.5%**	

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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Tuesday, March 03, 2015
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	1	0	0	0	0	0	2	0	0	0	3	**7**
1:00 AM	0	2	3	0	0	0	0	0	3	1	0	0	2	**11**
2:00 AM	0	5	2	1	0	0	0	0	0	3	0	0	2	**13**
3:00 AM	0	1	3	0	1	1	0	0	0	0	0	0	1	**7**
4:00 AM	1	4	10	3	2	2	0	0	5	2	0	0	3	**32**
5:00 AM	1	21	22	0	5	3	1	0	7	3	0	0	1	**64**
6:00 AM	0	18	28	0	6	3	0	7	3	2	0	0	6	**73**
7:00 AM	1	35	47	1	4	4	1	5	2	2	0	0	13	**115**
8:00 AM	0	32	16	0	2	1	0	2	3	3	0	0	11	**70**
9:00 AM	0	43	19	1	0	4	1	3	4	8	0	0	20	**103**
10:00 AM	1	33	25	1	1	10	1	6	4	4	2	0	10	**98**
11:00 AM	1	43	32	1	2	3	0	6	5	8	1	0	16	**118**
12:00 PM	0	35	38	1	2	4	0	2	9	5	0	0	9	**105**
1:00 PM	0	34	41	0	2	8	0	1	4	5	1	0	12	**108**
2:00 PM	2	53	30	0	4	6	2	3	4	10	1	1	10	**126**
3:00 PM	1	68	40	2	11	11	0	5	5	6	2	0	12	**163**
4:00 PM	2	74	29	2	6	13	0	4	2	5	0	0	17	**154**
5:00 PM	2	42	50	4	6	11	2	17	2	3	0	0	6	**145**
6:00 PM	2	21	31	1	0	6	0	2	5	1	0	0	6	**75**
7:00 PM	0	14	14	3	2	3	0	1	3	5	0	0	10	**55**
8:00 PM	1	17	7	2	1	1	0	1	2	1	0	0	9	**42**
9:00 PM	0	6	10	1	2	2	0	0	2	3	2	0	2	**30**
10:00 PM	0	6	2	1	0	2	0	2	1	2	0	0	5	**21**
11:00 PM	0	3	1	0	0	0	0	1	0	4	0	0	4	**13**
Total	**15**	**611**	**501**	**25**	**59**	**98**	**8**	**68**	**77**	**86**	**9**	**1**	**190**	**1,748**
Percent	**0.9%**	**35.0%**	**28.7%**	**1.4%**	**3.4%**	**5.6%**	**0.5%**	**3.9%**	**4.4%**	**4.9%**	**0.5%**	**0.1%**	**10.9%**	

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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

DATA SOLUTIONS

Wednesday, March 04, 2015
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	3	3	1	0	0	0	0	4	6	0	0	1	**19**
1:00 AM	0	1	3	1	0	0	0	1	3	3	0	0	0	**12**
2:00 AM	0	6	2	1	0	0	0	0	3	2	0	0	0	**14**
3:00 AM	0	6	9	0	1	0	0	0	6	3	0	0	1	**26**
4:00 AM	0	8	32	2	2	1	0	1	3	6	0	0	3	**58**
5:00 AM	0	12	75	1	12	2	1	1	3	5	0	0	6	**118**
6:00 AM	0	10	77	3	10	1	2	1	9	6	1	0	4	**124**
7:00 AM	2	35	61	3	9	1	0	3	10	8	0	0	13	**145**
8:00 AM	0	19	58	2	4	1	1	5	12	8	1	0	11	**122**
9:00 AM	0	18	45	2	4	1	1	1	11	11	3	0	6	**103**
10:00 AM	2	26	46	2	4	1	2	2	8	5	1	0	11	**110**
11:00 AM	0	33	43	5	1	3	1	0	14	6	0	0	13	**119**
12:00 PM	1	27	43	5	3	0	0	2	19	15	0	0	11	**126**
1:00 PM	1	22	43	3	6	3	0	5	11	6	0	0	6	**106**
2:00 PM	0	36	44	4	7	1	1	3	13	3	1	0	5	**118**
3:00 PM	1	39	54	4	5	2	1	1	17	11	2	0	10	**147**
4:00 PM	0	42	44	1	2	0	1	0	8	2	0	0	1	**101**
5:00 PM	2	36	53	1	6	0	0	1	8	7	0	0	0	**114**
6:00 PM	0	16	26	1	4	1	1	0	3	1	0	0	3	**56**
7:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	**3**
8:00 PM	0	0	1	1	0	0	0	0	0	1	0	0	0	**3**
9:00 PM	0	3	1	0	0	0	0	0	2	0	0	0	1	**7**
10:00 PM	0	1	10	1	0	0	0	0	9	1	0	0	0	**22**
11:00 PM	0	3	10	0	1	0	0	0	17	1	0	0	1	**33**
Total	**10**	**402**	**786**	**44**	**81**	**18**	**12**	**27**	**193**	**117**	**9**	**0**	**107**	**1,806**
Percent	**0.6%**	**22.3%**	**43.5%**	**2.4%**	**4.5%**	**1.0%**	**0.7%**	**1.5%**	**10.7%**	**6.5%**	**0.5%**	**0.0%**	**5.9%**	

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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

DATA SOLUTIONS

Wednesday, March 04, 2015
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	6	2	0	0	3	0	0	0	2	0	0	3	**16**
1:00 AM	0	2	0	0	0	0	0	0	4	2	0	0	2	**10**
2:00 AM	0	6	1	1	0	1	0	2	0	1	0	0	8	**20**
3:00 AM	0	5	2	0	1	0	0	0	1	0	0	0	2	**11**
4:00 AM	0	7	9	0	2	1	0	1	4	2	0	0	4	**30**
5:00 AM	0	20	16	1	0	2	0	1	1	4	0	0	4	**49**
6:00 AM	0	22	28	1	3	7	1	4	4	3	0	0	7	**80**
7:00 AM	0	54	37	2	4	10	0	8	1	1	0	0	7	**124**
8:00 AM	1	26	20	0	1	5	0	4	2	5	0	0	14	**78**
9:00 AM	0	28	30	2	0	7	0	3	4	3	0	0	17	**94**
10:00 AM	1	40	23	0	4	4	0	7	2	2	1	0	17	**101**
11:00 AM	3	41	30	1	1	6	1	6	8	16	1	0	23	**137**
12:00 PM	4	38	32	3	7	9	2	1	7	9	0	0	10	**122**
1:00 PM	0	28	46	2	4	5	2	2	3	6	1	0	7	**106**
2:00 PM	0	42	43	1	2	8	1	2	10	7	0	1	14	**131**
3:00 PM	2	47	61	9	4	5	2	1	5	12	1	0	9	**158**
4:00 PM	1	42	71	4	10	7	1	4	7	4	0	0	6	**157**
5:00 PM	1	48	56	8	7	12	2	3	4	13	1	0	6	**161**
6:00 PM	0	16	24	1	6	3	1	2	0	3	0	0	2	**58**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	**2**
9:00 PM	0	4	4	1	0	5	0	1	6	5	0	0	3	**29**
10:00 PM	0	2	7	1	1	1	0	1	3	4	0	0	1	**21**
11:00 PM	1	2	3	1	1	2	0	1	4	2	0	0	1	**18**
Total	**14**	**526**	**546**	**39**	**58**	**103**	**13**	**54**	**80**	**106**	**5**	**1**	**168**	**1,713**
Percent	**0.8%**	**30.7%**	**31.9%**	**2.3%**	**3.4%**	**6.0%**	**0.8%**	**3.2%**	**4.7%**	**6.2%**	**0.3%**	**0.1%**	**9.8%**	

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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

DATA SOLUTIONS

Thursday, March 05, 2015
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	4	0	0	0	0	0	6	2	0	0	1	**14**
1:00 AM	0	0	0	0	0	0	0	0	5	5	0	0	3	**13**
2:00 AM	0	0	4	0	0	0	0	0	3	1	0	0	0	**8**
3:00 AM	2	4	9	2	2	1	0	0	7	9	0	0	0	**36**
4:00 AM	0	11	30	2	5	0	1	0	6	2	0	0	3	**60**
5:00 AM	0	11	62	2	25	2	2	0	6	2	1	0	2	**115**
6:00 AM	1	17	65	6	25	3	0	1	19	5	0	0	5	**147**
7:00 AM	0	30	50	3	9	4	3	3	13	11	0	0	12	**138**
8:00 AM	1	22	46	2	14	5	4	3	15	9	1	0	6	**128**
9:00 AM	0	20	38	1	7	2	1	0	8	8	1	0	12	**98**
10:00 AM	0	21	47	4	9	1	1	5	14	15	0	0	13	**130**
11:00 AM	1	34	36	3	4	0	1	4	15	6	2	0	2	**108**
12:00 PM	0	33	43	4	7	0	0	1	27	9	0	0	8	**132**
1:00 PM	2	29	38	1	2	1	0	2	18	7	0	0	9	**109**
2:00 PM	1	33	47	1	4	5	0	2	15	6	0	0	6	**120**
3:00 PM	0	13	16	2	0	0	1	1	5	3	0	0	1	**42**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**8**	**279**	**535**	**33**	**113**	**24**	**14**	**22**	**182**	**100**	**5**	**0**	**83**	**1,398**
Percent	**0.6%**	**20.0%**	**38.3%**	**2.4%**	**8.1%**	**1.7%**	**1.0%**	**1.6%**	**13.0%**	**7.2%**	**0.4%**	**0.0%**	**5.9%**	

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Thursday, March 05, 2015
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	5	1	0	3	0	0	5	0	0	0	3	**17**
1:00 AM	0	3	1	0	0	1	1	0	2	1	0	0	1	**10**
2:00 AM	0	0	2	1	0	1	0	0	7	1	0	0	2	**14**
3:00 AM	2	2	2	0	0	0	0	0	2	2	0	0	0	**10**
4:00 AM	0	4	12	0	3	1	0	1	2	3	0	0	3	**29**
5:00 AM	0	10	24	1	5	6	1	1	5	2	0	0	1	**56**
6:00 AM	1	25	41	0	2	5	1	2	2	9	0	0	5	**93**
7:00 AM	1	42	37	3	8	11	4	2	3	2	0	0	2	**115**
8:00 AM	1	24	23	4	3	8	1	0	13	8	0	0	7	**92**
9:00 AM	0	25	31	2	1	8	0	2	9	8	0	1	13	**100**
10:00 AM	4	35	36	1	5	9	1	2	8	5	2	0	17	**125**
11:00 AM	2	53	40	2	3	6	2	2	10	7	0	1	11	**139**
12:00 PM	1	33	31	2	0	8	6	5	10	11	1	0	15	**123**
1:00 PM	2	36	41	1	3	10	0	2	17	6	1	0	21	**140**
2:00 PM	1	40	55	3	4	8	1	1	8	7	0	0	11	**139**
3:00 PM	0	11	11	1	0	4	2	1	1	0	0	0	5	**36**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**15**	**343**	**392**	**22**	**37**	**89**	**20**	**21**	**104**	**72**	**4**	**2**	**117**	**1,238**
Percent	**1.2%**	**27.7%**	**31.7%**	**1.8%**	**3.0%**	**7.2%**	**1.6%**	**1.7%**	**8.4%**	**5.8%**	**0.3%**	**0.2%**	**9.5%**	

Mark Skaggs:425-250-0777
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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	4	0	0	0	0	0	6	3	0	0	1	**16**
1:00 AM	0	1	2	0	0	0	0	0	5	4	0	0	1	**13**
2:00 AM	0	3	2	1	0	0	0	0	4	2	0	0	0	**12**
3:00 AM	1	4	10	1	1	1	0	0	6	4	0	0	1	**29**
4:00 AM	0	11	34	1	2	0	0	0	6	4	0	0	3	**61**
5:00 AM	0	12	68	2	18	1	1	1	6	4	0	0	4	**117**
6:00 AM	1	13	72	5	17	2	1	2	11	6	0	0	5	**135**
7:00 AM	1	31	56	4	9	2	1	3	9	10	0	0	15	**141**
8:00 AM	1	22	51	3	7	3	3	3	11	10	1	0	9	**124**
9:00 AM	0	20	40	2	4	2	1	1	11	8	1	0	7	**97**
10:00 AM	1	25	47	3	5	2	2	2	10	8	0	0	14	**119**
11:00 AM	0	32	36	3	3	2	1	2	11	7	1	0	7	**105**
12:00 PM	0	29	42	3	4	0	1	1	19	10	0	0	9	**118**
1:00 PM	1	25	43	1	3	2	0	3	11	5	0	0	7	**101**
2:00 PM	0	33	42	2	4	3	1	2	12	5	0	0	5	**109**
3:00 PM	0	31	39	2	4	1	1	1	12	6	1	0	4	**102**
4:00 PM	0	29	26	1	1	0	1	0	4	4	0	0	3	**69**
5:00 PM	1	24	35	2	3	1	0	0	6	4	0	0	2	**78**
6:00 PM	0	11	22	1	2	0	1	0	2	2	0	0	2	**43**
7:00 PM	0	4	7	0	0	0	0	0	2	0	0	0	0	**13**
8:00 PM	0	3	5	0	0	0	0	0	1	1	0	0	1	**11**
9:00 PM	0	4	5	0	0	0	0	0	2	2	0	0	1	**14**
10:00 PM	0	2	5	0	0	0	0	0	6	2	0	0	1	**16**
11:00 PM	0	2	6	0	1	0	0	0	6	1	0	0	1	**17**
Total	**7**	**373**	**699**	**37**	**88**	**22**	**15**	**21**	**179**	**112**	**4**	**0**	**103**	**1,660**
Percent	**0.4%**	**22.5%**	**42.1%**	**2.2%**	**5.3%**	**1.3%**	**0.9%**	**1.3%**	**10.8%**	**6.7%**	**0.2%**	**0.0%**	**6.2%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

DATA SOLUTIONS

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	2	3	0	0	2	0	0	2	1	0	0	3	**13**
1:00 AM	0	2	1	0	0	0	0	0	3	1	0	0	2	**9**
2:00 AM	0	4	2	1	0	1	0	1	2	2	0	0	4	**17**
3:00 AM	1	3	2	0	1	0	0	0	1	1	0	0	1	**10**
4:00 AM	0	5	10	1	2	1	0	1	4	2	0	0	3	**29**
5:00 AM	0	17	21	1	3	4	1	1	4	3	0	0	2	**57**
6:00 AM	0	22	32	0	4	5	1	4	3	5	0	0	6	**82**
7:00 AM	1	44	40	2	5	8	2	5	2	2	0	0	7	**118**
8:00 AM	1	27	20	1	2	5	0	2	6	5	0	0	11	**80**
9:00 AM	0	32	27	2	0	6	0	3	6	6	0	0	17	**99**
10:00 AM	2	36	28	1	3	8	1	5	5	4	2	0	15	**110**
11:00 AM	2	46	34	1	2	5	1	5	8	10	1	0	17	**132**
12:00 PM	2	35	34	2	3	7	3	3	9	8	0	0	11	**117**
1:00 PM	1	33	43	1	3	8	1	2	8	6	1	0	13	**120**
2:00 PM	1	45	43	1	3	7	1	2	7	8	0	1	12	**131**
3:00 PM	1	42	37	4	5	7	1	2	4	6	1	0	9	**119**
4:00 PM	1	39	33	2	5	7	0	3	3	3	0	0	8	**104**
5:00 PM	1	30	35	4	4	8	1	7	2	5	0	0	4	**101**
6:00 PM	1	12	18	1	2	3	0	1	2	1	0	0	3	**44**
7:00 PM	0	5	5	1	1	1	0	0	1	2	0	0	3	**19**
8:00 PM	0	6	3	1	0	0	0	0	1	0	0	0	3	**14**
9:00 PM	0	3	5	1	1	2	0	0	3	3	1	0	2	**21**
10:00 PM	0	3	3	1	0	1	0	1	1	2	0	0	2	**14**
11:00 PM	0	2	1	0	0	1	0	1	1	2	0	0	2	**10**
Total	**15**	**495**	**480**	**29**	**49**	**97**	**13**	**49**	**88**	**88**	**6**	**1**	**160**	**1,570**
Percent	**1.0%**	**31.5%**	**30.6%**	**1.8%**	**3.1%**	**6.2%**	**0.8%**	**3.1%**	**5.6%**	**5.6%**	**0.4%**	**0.1%**	**10.2%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

DATA SOLUTIONS

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	1	2	3	1	0	0	0	0	6	5	0	0	1	**18**
1:00 AM	0	1	3	1	0	0	0	1	4	3	0	0	0	**13**
2:00 AM	0	5	2	1	0	0	0	0	4	2	0	0	0	**14**
3:00 AM	0	5	10	0	1	0	0	0	6	2	0	0	1	**25**
4:00 AM	0	10	35	1	1	1	0	1	5	5	0	0	3	**62**
5:00 AM	0	13	72	2	14	1	1	1	5	5	0	0	5	**119**
6:00 AM	0	11	76	4	12	2	2	2	8	6	1	0	4	**127**
7:00 AM	1	33	60	4	9	1	0	3	8	9	0	0	16	**143**
8:00 AM	0	21	55	3	4	1	2	4	10	10	1	0	11	**121**
9:00 AM	0	19	42	3	3	2	1	1	12	9	2	0	5	**100**
10:00 AM	1	26	47	2	3	2	2	1	8	5	1	0	13	**113**
11:00 AM	0	32	38	4	2	3	1	0	11	7	0	0	11	**108**
12:00 PM	1	27	42	3	3	0	1	2	16	12	0	0	10	**116**
1:00 PM	1	23	45	2	4	3	0	4	9	5	0	0	6	**102**
2:00 PM	0	34	41	3	5	2	1	2	11	4	1	0	4	**108**
3:00 PM	1	40	52	3	5	1	1	1	16	9	2	0	7	**136**
4:00 PM	0	43	40	1	2	0	1	0	7	4	0	0	3	**102**
5:00 PM	1	36	53	3	5	1	0	1	9	6	0	0	2	**117**
6:00 PM	0	16	31	1	3	1	1	0	3	2	0	0	3	**62**
7:00 PM	0	4	8	0	0	0	0	0	2	0	0	0	0	**15**
8:00 PM	0	3	5	1	0	0	0	0	1	2	0	0	1	**13**
9:00 PM	0	5	5	0	0	0	0	0	3	2	0	0	1	**17**
10:00 PM	0	2	8	1	0	0	0	0	9	2	0	0	1	**23**
11:00 PM	0	3	9	0	1	0	0	0	12	2	0	0	1	**28**
Total	**8**	**412**	**782**	**41**	**79**	**21**	**13**	**24**	**185**	**118**	**7**	**0**	**110**	**1,801**
Percent	**0.4%**	**22.9%**	**43.4%**	**2.3%**	**4.4%**	**1.1%**	**0.7%**	**1.4%**	**10.3%**	**6.6%**	**0.4%**	**0.0%**	**6.1%**	

Mark Skaggs:425-250-0777
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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	2	0	0	2	0	0	1	1	0	0	3	**13**
1:00 AM	0	2	1	0	0	0	0	0	4	2	0	0	2	**10**
2:00 AM	0	6	1	1	0	1	0	1	0	2	0	0	6	**18**
3:00 AM	0	4	2	0	1	0	0	0	1	0	0	0	2	**10**
4:00 AM	0	6	9	1	2	1	0	1	4	2	0	0	4	**31**
5:00 AM	0	20	18	1	2	2	0	1	3	4	0	0	3	**54**
6:00 AM	0	21	28	1	4	6	1	5	4	3	0	0	7	**78**
7:00 AM	0	48	40	2	4	8	0	7	1	1	0	0	9	**121**
8:00 AM	1	28	19	0	1	4	0	3	2	4	0	0	13	**75**
9:00 AM	0	33	26	2	0	6	0	3	4	5	0	0	18	**97**
10:00 AM	1	38	24	0	3	6	0	7	3	3	1	0	15	**100**
11:00 AM	2	42	31	1	1	5	1	6	7	13	1	0	21	**131**
12:00 PM	3	37	34	2	5	7	1	1	8	8	0	0	10	**116**
1:00 PM	0	30	44	1	3	6	1	2	3	6	1	0	9	**107**
2:00 PM	1	46	39	1	3	7	1	2	8	8	0	1	13	**129**
3:00 PM	2	54	54	7	6	7	1	2	5	10	1	0	10	**160**
4:00 PM	1	53	57	3	9	9	1	4	5	4	0	0	10	**156**
5:00 PM	1	46	54	7	7	12	2	8	3	10	1	0	6	**156**
6:00 PM	1	18	26	1	4	4	1	2	2	2	0	0	3	**64**
7:00 PM	0	5	5	1	1	1	0	0	1	2	0	0	3	**18**
8:00 PM	0	6	3	1	0	0	0	0	1	0	0	0	4	**15**
9:00 PM	0	5	6	1	1	4	0	1	5	4	1	0	3	**29**
10:00 PM	0	3	5	1	1	1	0	1	2	3	0	0	2	**21**
11:00 PM	1	2	2	1	1	1	0	1	3	3	0	0	2	**16**
Total	**14**	**554**	**531**	**34**	**58**	**101**	**11**	**59**	**79**	**99**	**6**	**1**	**175**	**1,725**
Percent	**0.8%**	**32.1%**	**30.8%**	**2.0%**	**3.4%**	**5.9%**	**0.7%**	**3.4%**	**4.6%**	**5.8%**	**0.4%**	**0.1%**	**10.2%**	

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Vehicle Speed Report Summary

Location: SR 200 EAST OF FAIRVIEW

Count Direction: Eastbound / Westbound

Date Range: 3/3/2015 to 3/5/2015

Site Code: 04

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	1	1	7	23	174	319	454	711	1,075	1,030	677	326	126	55	14	1	1	4,995
Percent	0.0%	0.0%	0.1%	0.5%	3.5%	6.4%	9.1%	14.2%	21.5%	20.6%	13.6%	6.5%	2.5%	1.1%	0.3%	0.0%	0.0%	100%
Westbound	0	2	14	51	177	292	408	615	880	928	758	381	141	43	8	1	0	4,699
Percent	0.0%	0.0%	0.3%	1.1%	3.8%	6.2%	8.7%	13.1%	18.7%	19.7%	16.1%	8.1%	3.0%	0.9%	0.2%	0.0%	0.0%	100%
Total	1	3	21	74	351	611	862	1,326	1,955	1,958	1,435	707	267	98	22	2	1	9,694
Percent	0.0%	0.0%	0.2%	0.8%	3.6%	6.3%	8.9%	13.7%	20.2%	20.2%	14.8%	7.3%	2.8%	1.0%	0.2%	0.0%	0.0%	100%

Total Study Percentile Speed Summary		
Eastbound		
50th Percentile (Median)	48.8	mph
85th Percentile	57.9	mph
95th Percentile	63.8	mph
Westbound		
50th Percentile (Median)	49.7	mph
85th Percentile	58.8	mph
95th Percentile	64.0	mph
Allbound		
50th Percentile (Median)	######	mph
85th Percentile	######	mph
95th Percentile	######	mph

Total Study Speed Statistics		
Eastbound		
Mean (Average) Speed	48.3	mph
10 mph Pace	44.7 - 54.7	mph
Percent in Pace	42.4	%
Westbound		
Mean (Average) Speed	48.7	mph
10 mph Pace	46.1 - 56.1	mph
Percent in Pace	40.1	%
Allbound		
Mean (Average) Speed	######	mph
10 mph Pace	######	mph
Percent in Pace	######	%

Total Study Speeding Fact		
Allbound		
Posted Speed Limit	######	mph
Vehicle Exceeding Speed Limit	#VALUE!	veh
Percentage Exceeding Speed Limit	######	%
Mean Exceeding Speed	######	mph

Mark Skaggs:425-250-0777
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Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Tuesday, March 03, 2015
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	0	4	2	2	1	4	1	2	0	0	0	0	0	0	**17**
1:00 AM	0	0	0	1	3	2	2	1	2	1	1	1	0	0	0	0	0	**14**
2:00 AM	0	0	0	0	2	4	4	1	0	2	2	0	0	0	0	0	0	**15**
3:00 AM	0	0	0	0	2	3	0	4	0	4	3	2	3	3	0	0	0	**24**
4:00 AM	0	0	0	0	1	2	3	7	18	9	12	5	7	5	0	0	0	**69**
5:00 AM	0	0	0	1	6	7	7	17	13	31	19	14	4	1	0	0	0	**120**
6:00 AM	0	0	0	0	4	7	4	24	17	35	25	8	4	1	3	1	0	**133**
7:00 AM	1	1	3	1	3	8	17	20	32	38	11	3	1	0	1	0	0	**140**
8:00 AM	0	0	0	1	3	5	12	20	34	22	14	5	1	1	0	0	0	**118**
9:00 AM	0	0	0	0	4	7	8	17	23	23	9	1	2	0	0	0	0	**94**
10:00 AM	0	0	0	0	3	11	14	23	27	21	14	2	3	0	0	0	0	**118**
11:00 AM	0	0	0	0	3	8	12	13	21	14	10	2	3	0	0	0	0	**86**
12:00 PM	0	0	0	1	6	5	0	7	24	28	14	8	2	1	0	0	0	**96**
1:00 PM	0	0	0	1	3	7	7	6	25	18	13	11	3	0	0	0	0	**94**
2:00 PM	0	0	0	0	1	4	7	17	30	10	15	3	0	0	0	0	0	**87**
3:00 PM	0	0	0	1	4	7	9	11	20	25	18	6	5	5	3	0	1	**115**
4:00 PM	0	0	0	1	4	1	17	21	20	22	13	5	0	0	0	0	0	**104**
5:00 PM	0	0	0	1	2	12	10	21	20	23	21	7	3	2	0	0	0	**122**
6:00 PM	0	0	0	0	5	1	4	8	22	19	10	1	2	1	0	0	0	**73**
7:00 PM	0	0	0	0	1	1	7	3	6	6	9	3	2	1	0	0	0	**39**
8:00 PM	0	0	0	1	1	2	7	9	4	6	1	0	2	0	0	0	0	**33**
9:00 PM	0	0	0	0	0	4	8	5	6	6	4	2	0	0	1	0	0	**36**
10:00 PM	0	0	0	0	6	3	4	3	2	6	2	0	0	0	0	0	0	**26**
11:00 PM	0	0	0	0	1	3	1	2	3	3	4	1	0	0	0	0	0	**18**
Total	**1**	**1**	**4**	**10**	**72**	**116**	**166**	**261**	**373**	**373**	**246**	**90**	**47**	**21**	**8**	**1**	**1**	**1,791**
Percent	**0.1%**	**0.1%**	**0.2%**	**0.6%**	**4.0%**	**6.5%**	**9.3%**	**14.6%**	**20.8%**	**20.8%**	**13.7%**	**5.0%**	**2.6%**	**1.2%**	**0.4%**	**0.1%**	**0.1%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	48.3	mph	Mean (Average) Speed	48.0	mph
85th Percentile	57.5	mph	10 mph Pace	46.1 - 56.1	mph
95th Percentile	64.2	mph	Percent in Pace	42.2	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Tuesday, March 03, 2015
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	3	1	1	1	1	0	0	0	0	0	0	0	0	**7**
1:00 AM	0	0	0	1	1	2	2	1	2	0	1	1	0	0	0	0	0	**11**
2:00 AM	0	0	0	0	1	0	1	7	3	0	1	0	0	0	0	0	0	**13**
3:00 AM	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	0	0	**7**
4:00 AM	0	0	0	0	4	5	3	5	5	2	5	1	1	1	0	0	0	**32**
5:00 AM	0	0	0	1	2	3	7	14	11	13	8	3	0	1	1	0	0	**64**
6:00 AM	0	0	0	0	2	11	4	3	14	11	16	6	4	2	0	0	0	**73**
7:00 AM	0	0	0	0	9	8	10	9	12	17	24	13	9	4	0	0	0	**115**
8:00 AM	0	0	0	0	2	3	8	9	13	20	10	1	4	0	0	0	0	**70**
9:00 AM	0	0	0	2	7	10	15	9	20	18	16	5	1	0	0	0	0	**103**
10:00 AM	0	0	0	1	1	12	9	19	12	24	15	3	2	0	0	0	0	**98**
11:00 AM	0	0	0	0	1	9	11	20	31	23	13	9	0	1	0	0	0	**118**
12:00 PM	0	0	0	5	7	4	9	12	26	19	13	8	2	0	0	0	0	**105**
1:00 PM	0	0	0	0	5	4	10	9	22	34	14	7	3	0	0	0	0	**108**
2:00 PM	0	0	0	0	1	4	7	26	22	27	31	6	2	0	0	0	0	**126**
3:00 PM	0	0	3	6	11	10	20	21	29	29	23	8	2	1	0	0	0	**163**
4:00 PM	0	0	0	0	0	2	7	20	35	45	29	11	5	0	0	0	0	**154**
5:00 PM	0	0	6	2	8	8	11	10	13	28	35	21	3	0	0	0	0	**145**
6:00 PM	0	0	0	0	2	2	3	11	18	19	11	5	1	1	2	0	0	**75**
7:00 PM	0	0	0	1	3	5	13	4	9	9	6	4	1	0	0	0	0	**55**
8:00 PM	0	0	0	2	2	4	5	11	10	4	3	1	0	0	0	0	0	**42**
9:00 PM	0	0	0	3	3	3	5	5	3	3	2	1	1	1	0	0	0	**30**
10:00 PM	0	0	0	0	6	2	3	4	1	4	1	0	0	0	0	0	0	**21**
11:00 PM	0	0	0	1	0	3	2	5	0	0	1	0	1	0	0	0	0	**13**
Total	**0**	**0**	**9**	**25**	**81**	**116**	**167**	**236**	**313**	**350**	**279**	**114**	**42**	**12**	**4**	**0**	**0**	**1,748**
Percent	**0.0%**	**0.0%**	**0.5%**	**1.4%**	**4.6%**	**6.6%**	**9.6%**	**13.5%**	**17.9%**	**20.0%**	**16.0%**	**6.5%**	**2.4%**	**0.7%**	**0.2%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	49.0	mph	Mean (Average) Speed	47.8	mph
85th Percentile	57.9	mph	10 mph Pace	46.1 - 56.1	mph
95th Percentile	63.3	mph	Percent in Pace	39.9	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Wednesday, March 04, 2015
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	2	3	1	4	0	5	2	1	1	0	0	0	0	0	**19**
1:00 AM	0	0	0	0	0	1	2	1	2	4	0	2	0	0	0	0	0	**12**
2:00 AM	0	0	0	1	1	7	1	2	0	0	1	1	0	0	0	0	0	**14**
3:00 AM	0	0	0	0	0	2	4	2	5	2	5	1	2	3	0	0	0	**26**
4:00 AM	0	0	0	0	2	4	8	6	9	7	11	5	3	3	0	0	0	**58**
5:00 AM	0	0	0	0	3	3	9	17	22	23	17	12	10	2	0	0	0	**118**
6:00 AM	0	0	0	1	3	4	4	12	23	45	23	7	2	0	0	0	0	**124**
7:00 AM	0	0	0	0	2	7	7	23	40	37	17	9	2	1	0	0	0	**145**
8:00 AM	0	0	0	0	4	4	7	16	34	30	15	9	2	1	0	0	0	**122**
9:00 AM	0	0	0	0	1	6	13	19	28	17	14	4	1	0	0	0	0	**103**
10:00 AM	0	0	0	1	2	3	12	10	20	38	15	6	2	1	0	0	0	**110**
11:00 AM	0	0	0	0	5	5	13	26	35	20	10	2	2	1	0	0	0	**119**
12:00 PM	0	0	0	0	2	6	11	25	31	24	16	5	2	4	0	0	0	**126**
1:00 PM	0	0	0	0	0	3	13	20	23	17	17	10	3	0	0	0	0	**106**
2:00 PM	0	0	0	1	3	7	6	27	22	27	7	12	4	2	0	0	0	**118**
3:00 PM	0	0	0	0	6	8	15	25	43	24	10	14	2	0	0	0	0	**147**
4:00 PM	0	0	0	0	1	4	2	11	23	28	14	13	4	0	1	0	0	**101**
5:00 PM	0	0	0	0	2	6	11	13	23	24	17	14	3	1	0	0	0	**114**
6:00 PM	0	0	0	0	2	4	7	14	13	11	1	1	2	1	0	0	0	**56**
7:00 PM	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	**3**
8:00 PM	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	**3**
9:00 PM	0	0	0	0	0	1	2	1	0	3	0	0	0	0	0	0	0	**7**
10:00 PM	0	0	0	0	2	3	3	2	4	5	2	0	1	0	0	0	0	**22**
11:00 PM	0	0	0	0	5	8	3	2	4	7	1	2	1	0	0	0	0	**33**
Total	**0**	**0**	**0**	**6**	**50**	**97**	**159**	**276**	**409**	**396**	**214**	**130**	**48**	**20**	**1**	**0**	**0**	**1,806**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**2.8%**	**5.4%**	**8.8%**	**15.3%**	**22.6%**	**21.9%**	**11.8%**	**7.2%**	**2.7%**	**1.1%**	**0.1%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	48.8	mph	Mean (Average) Speed	48.6	mph
85th Percentile	58.2	mph	10 mph Pace	44.5 - 54.5	mph
95th Percentile	63.5	mph	Percent in Pace	45.7	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Wednesday, March 04, 2015
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	2	3	3	5	0	0	2	0	1	0	0	0	**16**
1:00 AM	0	0	0	0	1	2	4	0	0	2	0	0	1	0	0	0	0	**10**
2:00 AM	0	0	0	1	1	5	7	1	1	2	1	0	1	0	0	0	0	**20**
3:00 AM	0	0	0	0	1	0	0	2	3	3	1	1	0	0	0	0	0	**11**
4:00 AM	0	0	0	1	3	1	2	2	6	4	6	2	1	2	0	0	0	**30**
5:00 AM	0	0	0	0	0	3	6	6	15	7	9	3	0	0	0	0	0	**49**
6:00 AM	0	0	0	0	1	2	6	11	12	17	21	6	4	0	0	0	0	**80**
7:00 AM	0	0	0	0	2	9	2	12	28	23	23	21	4	0	0	0	0	**124**
8:00 AM	0	0	1	1	2	3	5	8	20	11	12	10	3	2	0	0	0	**78**
9:00 AM	0	0	0	1	7	10	8	10	10	22	12	10	4	0	0	0	0	**94**
10:00 AM	0	0	0	0	1	1	3	12	20	24	29	8	2	1	0	0	0	**101**
11:00 AM	0	0	0	2	4	7	8	20	24	31	30	8	3	0	0	0	0	**137**
12:00 PM	0	0	0	1	9	7	5	19	17	30	18	10	4	1	1	0	0	**122**
1:00 PM	0	0	1	0	0	1	6	13	25	23	22	11	3	1	0	0	0	**106**
2:00 PM	0	0	0	0	0	3	13	20	34	28	13	13	5	2	0	0	0	**131**
3:00 PM	0	2	2	1	5	8	10	17	29	33	23	20	7	1	0	0	0	**158**
4:00 PM	0	0	0	0	0	4	10	11	19	36	28	29	15	3	2	0	0	**157**
5:00 PM	0	0	0	0	2	11	6	27	37	42	27	5	2	2	0	0	0	**161**
6:00 PM	0	0	0	3	6	4	12	10	9	8	4	1	1	0	0	0	0	**58**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	**2**
9:00 PM	0	0	0	1	10	8	2	2	2	4	0	0	0	0	0	0	0	**29**
10:00 PM	0	0	0	2	1	9	2	3	2	1	1	0	0	0	0	0	0	**21**
11:00 PM	0	0	0	1	5	3	2	1	1	1	1	2	1	0	0	0	0	**18**
Total	**0**	**2**	**4**	**15**	**61**	**104**	**123**	**210**	**319**	**352**	**281**	**162**	**61**	**16**	**3**	**0**	**0**	**1,713**
Percent	**0.0%**	**0.1%**	**0.2%**	**0.9%**	**3.6%**	**6.1%**	**7.2%**	**12.3%**	**18.6%**	**20.5%**	**16.4%**	**9.5%**	**3.6%**	**0.9%**	**0.2%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	50.1	mph	Mean (Average) Speed	49.3	mph
85th Percentile	59.5	mph	10 mph Pace	47.2 - 57.2	mph
95th Percentile	64.4	mph	Percent in Pace	42.3	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Thursday, March 05, 2015
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	3	4	0	1	2	3	1	0	0	0	0	0	0	**14**
1:00 AM	0	0	0	2	0	4	4	0	2	1	0	0	0	0	0	0	0	**13**
2:00 AM	0	0	0	0	1	2	0	0	4	0	0	1	0	0	0	0	0	**8**
3:00 AM	0	0	0	1	5	4	7	3	3	4	5	2	2	0	0	0	0	**36**
4:00 AM	0	0	0	0	3	3	1	11	3	7	14	10	3	4	1	0	0	**60**
5:00 AM	0	0	0	0	4	7	5	5	22	26	18	17	5	5	1	0	0	**115**
6:00 AM	0	0	0	0	4	10	13	19	27	23	35	13	2	0	1	0	0	**147**
7:00 AM	0	0	0	0	4	11	4	25	27	24	23	15	3	2	0	0	0	**138**
8:00 AM	0	0	2	0	1	5	8	13	45	24	22	5	2	1	0	0	0	**128**
9:00 AM	0	0	0	2	2	4	6	10	22	26	16	6	3	0	1	0	0	**98**
10:00 AM	0	0	1	1	6	5	16	19	27	33	12	8	2	0	0	0	0	**130**
11:00 AM	0	0	0	0	6	8	12	14	23	22	14	7	0	1	1	0	0	**108**
12:00 PM	0	0	0	0	3	7	18	16	33	23	18	10	3	1	0	0	0	**132**
1:00 PM	0	0	0	1	5	14	14	15	15	23	15	6	1	0	0	0	0	**109**
2:00 PM	0	0	0	0	4	11	13	16	31	19	18	5	3	0	0	0	0	**120**
3:00 PM	0	0	0	0	1	7	8	7	7	3	6	1	2	0	0	0	0	**42**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**3**	**7**	**52**	**106**	**129**	**174**	**293**	**261**	**217**	**106**	**31**	**14**	**5**	**0**	**0**	**1,398**
Percent	**0.0%**	**0.0%**	**0.2%**	**0.5%**	**3.7%**	**7.6%**	**9.2%**	**12.4%**	**21.0%**	**18.7%**	**15.5%**	**7.6%**	**2.2%**	**1.0%**	**0.4%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	48.8	mph	Mean (Average) Speed	48.4	mph
85th Percentile	58.6	mph	10 mph Pace	44.5 - 54.5	mph
95th Percentile	63.3	mph	Percent in Pace	40.3	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Thursday, March 05, 2015
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	1	1	5	2	0	3	3	0	1	0	1	0	0	0	0	**17**
1:00 AM	0	0	0	1	0	1	2	1	1	4	0	0	0	0	0	0	0	**10**
2:00 AM	0	0	0	0	0	5	5	1	2	1	0	0	0	0	0	0	0	**14**
3:00 AM	0	0	0	0	0	0	2	1	0	1	5	1	0	0	0	0	0	**10**
4:00 AM	0	0	0	0	0	0	4	4	9	1	3	4	1	3	0	0	0	**29**
5:00 AM	0	0	0	1	3	1	5	5	15	11	6	4	5	0	0	0	0	**56**
6:00 AM	0	0	0	0	1	3	8	14	14	16	19	13	2	3	0	0	0	**93**
7:00 AM	0	0	0	0	0	2	1	16	20	19	28	16	6	6	0	1	0	**115**
8:00 AM	0	0	0	0	2	7	9	10	26	13	13	8	3	1	0	0	0	**92**
9:00 AM	0	0	0	3	4	5	5	16	15	22	10	16	4	0	0	0	0	**100**
10:00 AM	0	0	0	0	3	11	19	9	25	25	15	15	3	0	0	0	0	**125**
11:00 AM	0	0	0	0	7	11	9	28	34	23	23	3	1	0	0	0	0	**139**
12:00 PM	0	0	0	5	7	9	11	15	19	26	20	8	2	1	0	0	0	**123**
1:00 PM	0	0	0	0	3	7	21	21	12	32	31	9	3	0	1	0	0	**140**
2:00 PM	0	0	0	0	0	5	15	18	41	26	21	7	5	1	0	0	0	**139**
3:00 PM	0	0	0	0	0	3	2	7	12	6	3	1	2	0	0	0	0	**36**
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**0**	**0**	**1**	**11**	**35**	**72**	**118**	**169**	**248**	**226**	**198**	**105**	**38**	**15**	**1**	**1**	**0**	**1,238**
Percent	**0.0%**	**0.0%**	**0.1%**	**0.9%**	**2.8%**	**5.8%**	**9.5%**	**13.7%**	**20.0%**	**18.3%**	**16.0%**	**8.5%**	**3.1%**	**1.2%**	**0.1%**	**0.1%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	49.4	mph	Mean (Average) Speed	49	mph
85th Percentile	59.3	mph	10 mph Pace	45.4 - 55.4	mph
95th Percentile	64.2	mph	Percent in Pace	39.9	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	3	2	2	1	4	2	1	0	0	0	0	0	0	**16**
1:00 AM	0	0	0	1	1	2	3	1	2	2	0	1	0	0	0	0	0	**13**
2:00 AM	0	0	0	0	1	4	2	1	1	1	1	1	0	0	0	0	0	**12**
3:00 AM	0	0	0	0	2	3	4	3	3	3	4	2	2	2	0	0	0	**28**
4:00 AM	0	0	0	0	2	3	4	8	10	8	12	7	4	4	0	0	0	**62**
5:00 AM	0	0	0	0	4	6	7	13	19	27	18	14	6	3	0	0	0	**117**
6:00 AM	0	0	0	0	4	7	7	18	22	34	28	9	3	0	1	0	0	**133**
7:00 AM	0	0	1	0	3	9	9	23	33	33	17	9	2	1	0	0	0	**140**
8:00 AM	0	0	1	0	3	5	9	16	38	25	17	6	2	1	0	0	0	**123**
9:00 AM	0	0	0	1	2	6	9	15	24	22	13	4	2	0	0	0	0	**98**
10:00 AM	0	0	0	1	4	6	14	17	25	31	14	5	2	0	0	0	0	**119**
11:00 AM	0	0	0	0	5	7	12	18	26	19	11	4	2	1	0	0	0	**105**
12:00 PM	0	0	0	0	4	6	10	16	29	25	16	8	2	2	0	0	0	**118**
1:00 PM	0	0	0	1	3	8	11	14	21	19	15	9	2	0	0	0	0	**103**
2:00 PM	0	0	0	0	3	7	9	20	28	19	13	7	2	1	0	0	0	**109**
3:00 PM	0	0	0	0	4	7	11	14	23	17	11	7	3	2	1	0	0	**100**
4:00 PM	0	0	0	0	2	2	6	11	14	17	9	6	1	0	0	0	0	**68**
5:00 PM	0	0	0	0	1	6	7	11	14	16	13	7	2	1	0	0	0	**78**
6:00 PM	0	0	0	0	2	2	4	7	12	10	4	1	1	1	0	0	0	**44**
7:00 PM	0	0	0	0	0	0	3	1	2	2	3	1	1	0	0	0	0	**13**
8:00 PM	0	0	0	0	1	1	3	3	1	2	0	0	1	0	0	0	0	**12**
9:00 PM	0	0	0	0	0	2	3	2	2	3	1	1	0	0	0	0	0	**14**
10:00 PM	0	0	0	0	3	2	2	2	2	4	1	0	0	0	0	0	0	**16**
11:00 PM	0	0	0	0	2	4	1	1	2	3	2	1	0	0	0	0	0	**16**
Total	**0**	**0**	**2**	**5**	**59**	**107**	**152**	**236**	**357**	**344**	**224**	**110**	**40**	**19**	**2**	**0**	**0**	**1,657**
Percent	**0.0%**	**0.0%**	**0.1%**	**0.3%**	**3.6%**	**6.5%**	**9.2%**	**14.2%**	**21.5%**	**20.8%**	**13.5%**	**6.6%**	**2.4%**	**1.1%**	**0.1%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	48.8	mph	Mean (Average) Speed	48.3	mph
85th Percentile	57.9	mph	10 mph Pace	44.7 - 54.7	mph
95th Percentile	63.8	mph	Percent in Pace	42.4	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 04

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	3	2	1	2	3	0	0	1	0	0	0	0	0	**12**
1:00 AM	0	0	0	1	1	2	3	1	1	2	0	0	0	0	0	0	0	**11**
2:00 AM	0	0	0	0	1	3	4	3	2	1	1	0	0	0	0	0	0	**15**
3:00 AM	0	0	0	0	0	0	1	1	1	2	2	1	0	0	0	0	0	**8**
4:00 AM	0	0	0	0	2	2	3	4	7	2	5	2	1	2	0	0	0	**30**
5:00 AM	0	0	0	1	2	2	6	8	14	10	8	3	2	0	0	0	0	**56**
6:00 AM	0	0	0	0	1	5	6	9	13	15	19	8	3	2	0	0	0	**81**
7:00 AM	0	0	0	0	4	6	4	12	20	20	25	17	6	3	0	0	0	**117**
8:00 AM	0	0	0	0	2	4	7	9	20	15	12	6	3	1	0	0	0	**79**
9:00 AM	0	0	0	2	6	8	9	12	15	21	13	10	3	0	0	0	0	**99**
10:00 AM	0	0	0	0	2	8	10	13	19	24	20	9	2	0	0	0	0	**107**
11:00 AM	0	0	0	1	4	9	9	23	30	26	22	7	1	0	0	0	0	**132**
12:00 PM	0	0	0	4	8	7	8	15	21	25	17	9	3	1	0	0	0	**118**
1:00 PM	0	0	0	0	3	4	12	14	20	30	22	9	3	0	0	0	0	**117**
2:00 PM	0	0	0	0	0	4	12	21	32	27	22	9	4	1	0	0	0	**132**
3:00 PM	0	1	2	2	5	7	11	15	23	23	16	10	4	1	0	0	0	**120**
4:00 PM	0	0	0	0	0	2	6	10	18	27	19	13	7	1	1	0	0	**104**
5:00 PM	0	0	2	1	3	6	6	12	17	23	21	9	2	1	0	0	0	**103**
6:00 PM	0	0	0	1	3	2	5	7	9	9	5	2	1	0	1	0	0	**45**
7:00 PM	0	0	0	0	1	2	4	1	3	3	2	1	0	0	0	0	0	**17**
8:00 PM	0	0	0	1	1	2	2	4	3	1	1	0	0	0	0	0	0	**15**
9:00 PM	0	0	0	1	4	4	2	2	2	2	1	0	0	0	0	0	0	**18**
10:00 PM	0	0	0	1	2	4	2	2	1	2	1	0	0	0	0	0	0	**15**
11:00 PM	0	0	0	1	2	2	1	2	0	0	1	1	1	0	0	0	0	**11**
Total	**0**	**1**	**4**	**17**	**60**	**97**	**134**	**202**	**294**	**310**	**255**	**127**	**46**	**13**	**2**	**0**	**0**	**1,562**
Percent	**0.0%**	**0.1%**	**0.3%**	**1.1%**	**3.8%**	**6.2%**	**8.6%**	**12.9%**	**18.8%**	**19.8%**	**16.3%**	**8.1%**	**2.9%**	**0.8%**	**0.1%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	49.7	mph	Mean (Average) Speed	48.7	mph
85th Percentile	58.8	mph	10 mph Pace	46.1 - 56.1	mph
95th Percentile	64.0	mph	Percent in Pace	40.1	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 EAST OF FAIRVIEW
Date Range: 3/3/2015 - 3/9/2015
Site Code: 04

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	3/3/2015			3/4/2015			3/5/2015			3/6/2015			3/7/2015			3/8/2015			3/9/2015					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	17	7	24	19	16	35	14	17	31	-	-	-	-	-	-	-	-	-	-	-	-	17	13	30
1:00 AM	14	11	25	12	10	22	13	10	23	-	-	-	-	-	-	-	-	-	-	-	-	13	10	23
2:00 AM	15	13	28	14	20	34	8	14	22	-	-	-	-	-	-	-	-	-	-	-	-	12	16	28
3:00 AM	24	7	31	26	11	37	36	10	46	-	-	-	-	-	-	-	-	-	-	-	-	29	9	38
4:00 AM	69	32	101	58	30	88	60	29	89	-	-	-	-	-	-	-	-	-	-	-	-	62	30	93
5:00 AM	120	64	184	118	49	167	115	56	171	-	-	-	-	-	-	-	-	-	-	-	-	118	56	174
6:00 AM	133	73	206	124	80	204	147	93	240	-	-	-	-	-	-	-	-	-	-	-	-	135	82	217
7:00 AM	140	115	255	145	124	269	138	115	253	-	-	-	-	-	-	-	-	-	-	-	-	141	118	259
8:00 AM	118	70	188	122	78	200	128	92	220	-	-	-	-	-	-	-	-	-	-	-	-	123	80	203
9:00 AM	94	103	197	103	94	197	98	100	198	-	-	-	-	-	-	-	-	-	-	-	-	98	99	197
10:00 AM	118	98	216	110	101	211	130	125	255	-	-	-	-	-	-	-	-	-	-	-	-	119	108	227
11:00 AM	86	118	204	119	137	256	108	139	247	-	-	-	-	-	-	-	-	-	-	-	-	104	131	236
12:00 PM	96	105	201	126	122	248	132	123	255	-	-	-	-	-	-	-	-	-	-	-	-	118	117	235
1:00 PM	94	108	202	106	106	212	109	140	249	-	-	-	-	-	-	-	-	-	-	-	-	103	118	221
2:00 PM	87	126	213	118	131	249	120	139	259	-	-	-	-	-	-	-	-	-	-	-	-	108	132	240
3:00 PM	115	163	278	147	158	305	42	36	78	-	-	-	-	-	-	-	-	-	-	-	-	101	119	220
4:00 PM	104	154	258	101	157	258	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	68	104	172
5:00 PM	122	145	267	114	161	275	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	79	102	181
6:00 PM	73	75	148	56	58	114	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	43	44	87
7:00 PM	39	55	94	3	0	3	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	14	18	32
8:00 PM	33	42	75	3	2	5	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	12	15	27
9:00 PM	36	30	66	7	29	36	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	14	20	34
10:00 PM	26	21	47	22	21	43	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	16	14	30
11:00 PM	18	13	31	33	18	51	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	17	10	27
Total	**1,791**	**1,748**	**3,539**	**1,806**	**1,713**	**3,519**	**1,398**	**1,238**	**2,636**	-	-	-	-	-	-	-	-	-	-	-	-	**1,665**	**1,566**	**3,231**
Percent	**51%**	**49%**	-	**51%**	**49%**	-	**53%**	**47%**	-	-	-	-	-	-	-	-	-	-	-	-	-	**52%**	**48%**	-

1. Mid-week average includes data between Tuesday and Thursday.

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Vehicle Classification Report Summary

Location: SR 201 WEST OF FAIRVIEW

Count Direction: Eastbound / Westbound

Date Range: 3/3/2015 to 3/5/2015

Site Code: 05

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Eastbound	13	879	310	13	29	95	21	245	35	82	17	0	614	2,353
Percent	0.6%	37.4%	13.2%	0.6%	1.2%	4.0%	0.9%	10.4%	1.5%	3.5%	0.7%	0.0%	26.1%	100%
Westbound	7	537	915	48	100	28	23	24	337	279	2	0	118	2,418
Percent	0.3%	22.2%	37.8%	2.0%	4.1%	1.2%	1.0%	1.0%	13.9%	11.5%	0.1%	0.0%	4.9%	100%
Total	20	1,416	1,225	61	129	123	44	269	372	361	19	0	732	4,771
Percent	0.4%	29.7%	25.7%	1.3%	2.7%	2.6%	0.9%	5.6%	7.8%	7.6%	0.4%	0.0%	15.3%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Mark Skaggs:425-250-0777
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Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Tuesday, March 03, 2015
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	1	0	0	0	0	0	1	1	0	0	0	**5**
1:00 AM	0	3	1	0	0	0	0	0	1	0	0	0	2	**7**
2:00 AM	0	7	0	0	0	0	0	0	1	2	0	0	0	**10**
3:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	1	**3**
4:00 AM	0	8	1	0	0	0	1	6	1	0	0	0	6	**23**
5:00 AM	0	8	5	0	0	0	2	8	0	0	0	0	3	**26**
6:00 AM	0	10	7	1	0	5	1	8	0	0	0	0	2	**34**
7:00 AM	0	36	7	0	0	3	0	10	0	1	0	0	21	**78**
8:00 AM	0	14	1	0	0	0	1	4	0	1	0	0	18	**39**
9:00 AM	0	19	3	0	0	2	0	1	0	1	0	0	17	**43**
10:00 AM	0	18	0	0	1	2	1	5	1	1	0	0	26	**55**
11:00 AM	0	20	3	0	1	2	0	6	1	1	0	0	21	**55**
12:00 PM	0	21	4	0	0	4	2	1	0	1	0	0	17	**50**
1:00 PM	0	16	2	0	0	2	0	5	0	0	1	0	10	**36**
2:00 PM	0	21	1	0	0	2	0	7	0	1	2	0	18	**52**
3:00 PM	0	14	11	0	0	0	0	7	0	2	0	0	2	**36**
4:00 PM	0	14	9	0	3	3	1	8	1	2	0	0	10	**51**
5:00 PM	0	18	10	0	0	1	0	5	2	0	0	0	10	**46**
6:00 PM	0	4	11	0	2	0	0	3	0	1	0	0	3	**24**
7:00 PM	0	6	4	0	0	1	0	2	0	0	0	0	2	**15**
8:00 PM	0	4	1	0	0	0	0	2	0	2	0	0	2	**11**
9:00 PM	0	7	1	0	0	2	0	1	1	1	0	0	0	**13**
10:00 PM	0	1	6	0	0	1	0	0	1	0	0	0	1	**10**
11:00 PM	0	3	1	0	0	0	0	0	1	0	0	0	0	**5**
Total	**0**	**274**	**90**	**1**	**7**	**30**	**9**	**90**	**12**	**19**	**3**	**0**	**192**	**727**
Percent	**0.0%**	**37.7%**	**12.4%**	**0.1%**	**1.0%**	**4.1%**	**1.2%**	**12.4%**	**1.7%**	**2.6%**	**0.4%**	**0.0%**	**26.4%**	

Mark Skaggs:425-250-0777
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Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Tuesday, March 03, 2015
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	3	0	0	0	0	0	6	0	0	0	0	**12**
1:00 AM	0	3	0	0	0	0	0	0	1	1	0	0	0	**5**
2:00 AM	0	5	1	0	0	0	0	0	1	0	0	0	1	**8**
3:00 AM	0	0	1	0	1	0	0	0	1	0	0	0	0	**3**
4:00 AM	0	5	5	1	0	0	0	0	1	0	0	0	1	**13**
5:00 AM	0	8	11	0	0	0	0	0	3	0	0	0	0	**22**
6:00 AM	0	5	17	2	3	0	0	0	14	10	0	0	3	**54**
7:00 AM	0	22	24	0	4	0	0	0	2	11	0	0	2	**65**
8:00 AM	0	11	19	0	2	1	0	0	6	4	0	0	3	**46**
9:00 AM	0	5	11	0	1	0	0	0	11	4	0	0	3	**35**
10:00 AM	0	11	17	1	1	1	0	0	11	4	0	0	1	**47**
11:00 AM	0	7	18	0	1	0	2	1	11	9	1	0	6	**56**
12:00 PM	0	11	24	0	2	1	0	1	11	4	0	0	3	**57**
1:00 PM	0	6	16	3	1	1	0	1	8	4	0	0	3	**43**
2:00 PM	0	12	14	2	0	0	0	2	7	3	0	0	2	**42**
3:00 PM	0	12	26	0	2	0	1	0	5	4	0	0	4	**54**
4:00 PM	0	6	14	2	0	1	0	1	3	0	0	0	3	**30**
5:00 PM	0	14	27	1	3	2	1	0	1	1	0	0	0	**50**
6:00 PM	0	2	16	0	1	0	1	0	3	0	0	0	0	**23**
7:00 PM	0	4	8	0	0	0	1	0	1	1	0	0	0	**15**
8:00 PM	0	2	7	1	1	0	0	0	3	0	0	0	1	**15**
9:00 PM	0	4	5	0	0	0	0	0	0	1	0	0	0	**10**
10:00 PM	0	3	4	0	0	0	0	1	1	1	0	0	0	**10**
11:00 PM	0	4	2	0	0	0	0	0	1	1	0	0	0	**8**
Total	**0**	**165**	**290**	**13**	**23**	**7**	**6**	**7**	**112**	**63**	**1**	**0**	**36**	**723**
Percent	**0.0%**	**22.8%**	**40.1%**	**1.8%**	**3.2%**	**1.0%**	**0.8%**	**1.0%**	**15.5%**	**8.7%**	**0.1%**	**0.0%**	**5.0%**	

Mark Skaggs:425-250-0777
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Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Wednesday, March 04, 2015
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	2	0	0	0	0	0	0	1	0	0	0	**3**
1:00 AM	0	2	1	0	0	0	0	0	0	1	0	0	0	**4**
2:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	1	**3**
3:00 AM	0	0	2	0	0	0	0	1	1	0	0	0	2	**6**
4:00 AM	0	4	3	0	0	1	0	0	0	1	0	0	0	**9**
5:00 AM	0	7	11	0	2	2	0	4	0	0	0	0	7	**33**
6:00 AM	0	6	14	1	1	0	0	7	3	3	0	0	3	**38**
7:00 AM	0	12	14	1	1	3	0	5	1	4	0	0	16	**57**
8:00 AM	0	11	4	0	0	2	0	1	2	7	1	0	13	**41**
9:00 AM	0	2	9	0	1	3	1	0	3	4	0	0	17	**40**
10:00 AM	0	15	8	0	1	4	0	6	0	2	1	0	18	**55**
11:00 AM	0	18	14	2	0	3	0	1	0	2	1	0	14	**55**
12:00 PM	0	31	7	0	1	2	1	6	1	3	1	0	23	**76**
1:00 PM	0	22	6	0	1	3	0	6	1	1	1	0	14	**55**
2:00 PM	1	20	7	0	0	3	1	5	1	4	1	0	23	**66**
3:00 PM	5	19	5	2	1	6	0	7	1	2	0	0	22	**70**
4:00 PM	0	19	9	0	1	3	0	4	1	3	0	0	8	**48**
5:00 PM	0	15	17	0	1	1	0	4	0	3	0	0	2	**43**
6:00 PM	0	15	3	0	0	1	1	9	0	1	0	0	8	**38**
7:00 PM	0	7	4	0	0	1	0	0	0	1	0	0	4	**17**
8:00 PM	0	4	2	0	0	0	0	0	1	2	0	0	3	**12**
9:00 PM	0	3	4	0	0	0	1	1	0	1	0	0	1	**11**
10:00 PM	0	1	3	0	0	0	0	0	1	0	0	0	4	**9**
11:00 PM	0	3	0	0	0	0	0	1	0	0	0	0	6	**10**
Total	**6**	**238**	**149**	**6**	**11**	**38**	**5**	**68**	**17**	**46**	**6**	**0**	**209**	**799**
Percent	**0.8%**	**29.8%**	**18.6%**	**0.8%**	**1.4%**	**4.8%**	**0.6%**	**8.5%**	**2.1%**	**5.8%**	**0.8%**	**0.0%**	**26.2%**	

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Wednesday, March 04, 2015
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	1	0	0	0	0	0	1	1	0	0	0	**3**
1:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	**7**
2:00 AM	0	1	3	0	0	0	0	0	1	0	0	0	0	**5**
3:00 AM	0	0	3	0	0	0	0	0	2	1	0	0	0	**6**
4:00 AM	0	1	7	0	1	0	0	0	4	1	0	0	1	**15**
5:00 AM	0	4	14	1	1	0	0	0	1	1	0	0	0	**22**
6:00 AM	0	6	21	2	3	0	0	0	17	9	0	0	4	**62**
7:00 AM	0	7	22	0	0	0	0	0	9	12	0	0	1	**51**
8:00 AM	0	7	14	2	5	0	1	1	6	4	0	0	3	**43**
9:00 AM	0	1	19	1	4	1	0	0	12	4	0	0	3	**45**
10:00 AM	0	8	20	0	2	0	1	0	1	7	0	0	4	**43**
11:00 AM	1	12	12	0	2	1	2	2	21	16	0	0	5	**74**
12:00 PM	1	23	20	0	2	1	0	0	6	8	0	0	4	**65**
1:00 PM	0	13	18	2	4	1	0	2	7	5	0	0	2	**54**
2:00 PM	0	15	23	1	2	3	0	0	14	11	0	0	3	**72**
3:00 PM	0	14	22	0	4	1	0	1	7	6	0	0	3	**58**
4:00 PM	1	14	22	2	0	0	0	0	0	6	0	0	1	**46**
5:00 PM	0	14	24	4	6	2	1	2	8	5	0	0	1	**67**
6:00 PM	0	6	10	1	1	0	0	0	2	0	0	0	0	**20**
7:00 PM	0	5	15	1	0	1	0	0	2	3	0	0	2	**29**
8:00 PM	0	4	4	0	2	0	0	0	1	5	0	0	1	**17**
9:00 PM	0	1	5	0	0	1	0	1	0	5	0	0	0	**13**
10:00 PM	0	1	4	0	1	0	0	0	0	4	0	0	0	**10**
11:00 PM	0	2	3	0	0	0	0	0	0	1	0	0	0	**6**
Total	**3**	**163**	**309**	**17**	**40**	**12**	**5**	**9**	**122**	**115**	**0**	**0**	**38**	**833**
Percent	**0.4%**	**19.6%**	**37.1%**	**2.0%**	**4.8%**	**1.4%**	**0.6%**	**1.1%**	**14.6%**	**13.8%**	**0.0%**	**0.0%**	**4.6%**	

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Thursday, March 05, 2015
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	**1**
1:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	1	**3**
2:00 AM	0	1	1	0	0	0	0	0	0	1	0	0	2	**5**
3:00 AM	0	3	0	0	0	1	0	0	0	0	0	0	3	**7**
4:00 AM	0	5	1	1	0	1	1	2	0	0	0	0	4	**15**
5:00 AM	0	13	2	0	0	1	2	8	0	0	0	0	3	**29**
6:00 AM	0	23	4	0	1	3	1	9	0	1	0	0	4	**46**
7:00 AM	3	34	0	0	0	1	1	13	0	3	0	0	22	**77**
8:00 AM	0	22	6	0	0	3	0	3	0	1	0	0	12	**47**
9:00 AM	0	16	3	0	0	1	0	3	0	1	1	0	17	**42**
10:00 AM	2	36	3	0	0	0	1	3	1	2	1	0	25	**74**
11:00 AM	0	22	4	2	2	3	0	4	0	0	2	0	15	**54**
12:00 PM	0	34	6	1	1	3	0	8	1	0	2	0	16	**72**
1:00 PM	0	21	4	0	0	1	0	5	0	2	0	0	14	**47**
2:00 PM	0	22	6	0	1	2	0	5	0	0	0	0	16	**52**
3:00 PM	0	20	5	0	3	0	1	5	0	0	1	0	13	**48**
4:00 PM	2	18	9	0	1	3	0	5	1	2	0	0	14	**55**
5:00 PM	0	17	6	2	1	1	0	1	0	2	1	0	10	**41**
6:00 PM	0	20	3	0	0	1	0	6	1	0	0	0	9	**40**
7:00 PM	0	23	2	0	0	1	0	1	0	1	0	0	5	**33**
8:00 PM	0	2	0	0	0	0	0	3	1	1	0	0	2	**9**
9:00 PM	0	11	1	0	0	1	0	3	0	0	0	0	2	**18**
10:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	2	**4**
11:00 PM	0	2	5	0	0	0	0	0	0	0	0	0	1	**8**
Total	**7**	**367**	**71**	**6**	**11**	**27**	**7**	**87**	**6**	**17**	**8**	**0**	**213**	**827**
Percent	**0.8%**	**44.4%**	**8.6%**	**0.7%**	**1.3%**	**3.3%**	**0.8%**	**10.5%**	**0.7%**	**2.1%**	**1.0%**	**0.0%**	**25.8%**	

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Thursday, March 05, 2015
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	0	2	0	0	0	0	0	4	0	0	0	0	**6**
1:00 AM	0	0	1	0	0	0	0	0	1	1	0	0	0	**3**
2:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
3:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
4:00 AM	0	1	10	1	0	0	0	0	1	3	0	0	1	**17**
5:00 AM	0	4	12	0	0	0	0	0	2	3	0	0	2	**23**
6:00 AM	0	12	19	0	4	1	0	0	8	10	0	0	3	**57**
7:00 AM	3	17	23	2	4	2	0	1	5	8	0	0	2	**67**
8:00 AM	0	11	24	1	4	1	3	1	5	5	1	0	3	**59**
9:00 AM	0	9	23	1	2	0	1	0	8	13	0	0	4	**61**
10:00 AM	0	21	19	1	3	0	0	2	6	8	0	0	2	**62**
11:00 AM	0	18	13	2	1	2	2	1	8	9	0	0	3	**59**
12:00 PM	0	17	24	1	2	0	1	1	12	7	0	0	4	**69**
1:00 PM	0	12	15	0	3	0	0	0	10	6	0	0	5	**51**
2:00 PM	0	13	19	3	4	0	0	1	5	5	0	0	2	**52**
3:00 PM	0	14	18	3	1	0	0	0	2	6	0	0	3	**47**
4:00 PM	0	13	22	2	1	1	3	0	2	5	0	0	2	**51**
5:00 PM	0	10	17	1	8	0	0	0	5	0	0	0	2	**43**
6:00 PM	0	9	16	0	0	1	0	1	2	3	0	0	1	**33**
7:00 PM	0	15	16	0	0	0	1	0	2	1	0	0	2	**37**
8:00 PM	0	2	10	0	0	0	0	0	5	3	0	0	1	**21**
9:00 PM	0	5	3	0	0	0	0	0	3	0	0	0	0	**11**
10:00 PM	0	2	5	0	0	0	0	0	3	2	0	0	1	**13**
11:00 PM	1	2	3	0	0	1	1	0	4	3	0	0	1	**16**
Total	**4**	**209**	**316**	**18**	**37**	**9**	**12**	**8**	**103**	**101**	**1**	**0**	**44**	**862**
Percent	**0.5%**	**24.2%**	**36.7%**	**2.1%**	**4.3%**	**1.0%**	**1.4%**	**0.9%**	**11.9%**	**11.7%**	**0.1%**	**0.0%**	**5.1%**	

Mark Skaggs:425-250-0777
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Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Total Study Average
Eastbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	1	1	0	0	0	0	0	0	1	0	0	0	**3**
1:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	1	**4**
2:00 AM	0	3	0	0	0	0	0	0	0	1	0	0	1	**5**
3:00 AM	0	1	1	0	0	0	0	1	0	0	0	0	2	**5**
4:00 AM	0	6	2	0	0	1	1	3	0	0	0	0	3	**16**
5:00 AM	0	9	6	0	1	1	1	7	0	0	0	0	4	**29**
6:00 AM	0	13	8	1	1	3	1	8	1	1	0	0	3	**40**
7:00 AM	1	27	7	0	0	2	0	9	0	3	0	0	20	**69**
8:00 AM	0	16	4	0	0	2	0	3	1	3	0	0	14	**43**
9:00 AM	0	12	5	0	0	2	0	1	1	2	0	0	17	**40**
10:00 AM	1	23	4	0	1	2	1	5	1	2	1	0	23	**64**
11:00 AM	0	20	7	1	1	3	0	4	0	1	1	0	17	**55**
12:00 PM	0	29	6	0	1	3	1	5	1	1	1	0	19	**67**
1:00 PM	0	20	4	0	0	2	0	5	0	1	1	0	13	**46**
2:00 PM	0	21	5	0	0	2	0	6	0	2	1	0	19	**56**
3:00 PM	2	18	7	1	1	2	0	6	0	1	0	0	12	**50**
4:00 PM	1	17	9	0	2	3	0	6	1	2	0	0	11	**52**
5:00 PM	0	17	11	1	1	1	0	3	1	2	0	0	7	**44**
6:00 PM	0	13	6	0	1	1	0	6	0	1	0	0	7	**35**
7:00 PM	0	12	3	0	0	1	0	1	0	1	0	0	4	**22**
8:00 PM	0	3	1	0	0	0	0	2	1	2	0	0	2	**11**
9:00 PM	0	7	2	0	0	1	0	2	0	1	0	0	1	**14**
10:00 PM	0	1	3	0	0	0	0	0	1	0	0	0	2	**7**
11:00 PM	0	3	2	0	0	0	0	0	0	0	0	0	2	**7**
Total	**5**	**294**	**105**	**4**	**10**	**32**	**5**	**83**	**9**	**28**	**5**	**0**	**204**	**784**
Percent	**0.6%**	**37.5%**	**13.4%**	**0.5%**	**1.3%**	**4.1%**	**0.6%**	**10.6%**	**1.1%**	**3.6%**	**0.6%**	**0.0%**	**26.0%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Total Study Average
Westbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	1	2	0	0	0	0	0	4	0	0	0	0	**7**
1:00 AM	0	2	1	0	0	0	0	0	1	1	0	0	0	**5**
2:00 AM	0	2	2	0	0	0	0	0	1	0	0	0	0	**5**
3:00 AM	0	1	2	0	0	0	0	0	1	0	0	0	0	**4**
4:00 AM	0	2	7	1	0	0	0	0	2	1	0	0	1	**14**
5:00 AM	0	5	12	0	0	0	0	0	2	1	0	0	1	**21**
6:00 AM	0	8	19	1	3	0	0	0	13	10	0	0	3	**57**
7:00 AM	1	15	23	1	3	1	0	0	5	10	0	0	2	**61**
8:00 AM	0	10	19	1	4	1	1	1	6	4	0	0	3	**50**
9:00 AM	0	5	18	1	2	0	0	0	10	7	0	0	3	**46**
10:00 AM	0	13	19	1	2	0	0	1	6	6	0	0	2	**50**
11:00 AM	0	12	14	1	1	1	2	1	13	11	0	0	5	**61**
12:00 PM	0	17	23	0	2	1	0	1	10	6	0	0	4	**64**
1:00 PM	0	10	16	2	3	1	0	1	8	5	0	0	3	**49**
2:00 PM	0	13	19	2	2	1	0	1	9	6	0	0	2	**55**
3:00 PM	0	13	22	1	2	0	0	0	5	5	0	0	3	**51**
4:00 PM	0	11	19	2	0	1	1	0	2	4	0	0	2	**42**
5:00 PM	0	13	23	2	6	1	1	1	5	2	0	0	1	**55**
6:00 PM	0	6	14	0	1	0	0	0	2	1	0	0	0	**24**
7:00 PM	0	8	13	0	0	0	1	0	2	2	0	0	1	**27**
8:00 PM	0	3	7	0	1	0	0	0	3	3	0	0	1	**18**
9:00 PM	0	3	4	0	0	0	0	0	1	2	0	0	0	**10**
10:00 PM	0	2	4	0	0	0	0	0	1	2	0	0	0	**9**
11:00 PM	0	3	3	0	0	0	0	0	2	2	0	0	0	**10**
Total	**1**	**178**	**305**	**16**	**32**	**8**	**6**	**7**	**114**	**91**	**0**	**0**	**37**	**795**
Percent	**0.1%**	**22.4%**	**38.4%**	**2.0%**	**4.0%**	**1.0%**	**0.8%**	**0.9%**	**14.3%**	**11.4%**	**0.0%**	**0.0%**	**4.7%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

3-Day (Tuesday - Thursday) Average
Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	2	0	0	0	0	0	0	1	0	0	0	**4**
1:00 AM	0	2	1	0	0	0	0	0	0	1	0	0	1	**5**
2:00 AM	0	4	0	0	0	0	0	0	0	1	0	0	1	**5**
3:00 AM	0	0	1	0	0	0	0	1	1	0	0	0	2	**5**
4:00 AM	0	5	2	0	0	1	0	2	0	1	0	0	2	**14**
5:00 AM	0	7	9	0	1	1	1	5	0	0	0	0	6	**31**
6:00 AM	0	7	12	1	1	2	0	7	2	2	0	0	3	**37**
7:00 AM	0	20	12	1	1	3	0	7	1	3	0	0	18	**64**
8:00 AM	0	12	3	0	0	1	0	2	1	5	1	0	15	**40**
9:00 AM	0	8	7	0	1	3	1	0	2	3	0	0	17	**41**
10:00 AM	0	16	5	0	1	3	0	6	0	2	1	0	21	**55**
11:00 AM	0	19	10	1	0	3	0	3	0	2	1	0	16	**55**
12:00 PM	0	28	6	0	1	3	1	4	1	2	1	0	21	**67**
1:00 PM	0	20	5	0	1	3	0	6	1	1	1	0	13	**49**
2:00 PM	1	20	5	0	0	3	1	6	1	3	1	0	21	**61**
3:00 PM	3	17	7	1	1	4	0	7	1	2	0	0	15	**59**
4:00 PM	0	17	9	0	2	3	0	5	1	3	0	0	9	**49**
5:00 PM	0	16	15	0	1	1	0	4	1	2	0	0	5	**44**
6:00 PM	0	11	6	0	1	1	1	7	0	1	0	0	6	**33**
7:00 PM	0	7	4	0	0	1	0	1	0	1	0	0	3	**16**
8:00 PM	0	4	2	0	0	0	0	1	1	2	0	0	3	**12**
9:00 PM	0	4	3	0	0	1	1	1	0	1	0	0	1	**12**
10:00 PM	0	1	4	0	0	0	0	0	1	0	0	0	3	**9**
11:00 PM	0	3	0	0	0	0	0	1	0	0	0	0	4	**8**
Total	**4**	**250**	**129**	**4**	**10**	**35**	**6**	**75**	**15**	**37**	**5**	**0**	**203**	**775**
Percent	**0.5%**	**32.3%**	**16.7%**	**0.6%**	**1.2%**	**4.6%**	**0.8%**	**9.7%**	**2.0%**	**4.8%**	**0.6%**	**0.0%**	**26.2%**	

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

3-Day (Tuesday - Thursday) Average
Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	2	0	0	0	0	0	3	1	0	0	0	**6**
1:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	**6**
2:00 AM	0	2	2	0	0	0	0	0	1	0	0	0	0	**6**
3:00 AM	0	0	2	0	0	0	0	0	2	1	0	0	0	**5**
4:00 AM	0	2	6	0	1	0	0	0	3	1	0	0	1	**14**
5:00 AM	0	5	13	1	1	0	0	0	2	1	0	0	0	**22**
6:00 AM	0	6	20	2	3	0	0	0	16	9	0	0	4	**59**
7:00 AM	0	12	23	0	1	0	0	0	7	12	0	0	1	**56**
8:00 AM	0	8	16	1	4	0	1	1	6	4	0	0	3	**44**
9:00 AM	0	2	16	1	3	1	0	0	12	4	0	0	3	**42**
10:00 AM	0	9	19	0	2	0	1	0	4	6	0	0	3	**44**
11:00 AM	1	10	14	0	2	1	2	2	18	14	0	0	5	**68**
12:00 PM	1	19	21	0	2	1	0	0	8	7	0	0	4	**62**
1:00 PM	0	11	17	2	3	1	0	2	7	5	0	0	2	**50**
2:00 PM	0	14	20	1	1	2	0	1	12	8	0	0	3	**62**
3:00 PM	0	13	23	0	3	1	0	1	6	5	0	0	3	**57**
4:00 PM	1	11	19	2	0	0	0	0	1	4	0	0	2	**41**
5:00 PM	0	14	25	3	5	2	1	1	6	4	0	0	1	**61**
6:00 PM	0	5	12	1	1	0	0	0	2	0	0	0	0	**21**
7:00 PM	0	5	13	1	0	1	0	0	2	2	0	0	1	**24**
8:00 PM	0	3	5	0	2	0	0	0	2	3	0	0	1	**16**
9:00 PM	0	2	5	0	0	1	0	1	0	4	0	0	0	**12**
10:00 PM	0	2	4	0	1	0	0	0	0	3	0	0	0	**10**
11:00 PM	0	3	3	0	0	0	0	0	0	1	0	0	0	**7**
Total	**2**	**164**	**303**	**16**	**34**	**10**	**5**	**8**	**119**	**98**	**0**	**0**	**37**	**796**
Percent	**0.3%**	**20.6%**	**38.0%**	**2.0%**	**4.3%**	**1.3%**	**0.7%**	**1.0%**	**14.9%**	**12.3%**	**0.0%**	**0.0%**	**4.7%**	

Mark Skaggs:425-250-0777
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Vehicle Speed Report Summary

Location: SR 201 WEST OF FAIRVIEW

Count Direction: Eastbound / Westbound

Date Range: 3/3/2015 to 3/5/2015

Site Code: 05

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Eastbound	0	1	0	0	7	44	109	255	420	467	457	351	174	50	11	5	2	2,353
Percent	0.0%	0.0%	0.0%	0.0%	0.3%	1.9%	4.6%	10.8%	17.8%	19.8%	19.4%	14.9%	7.4%	2.1%	0.5%	0.2%	0.1%	100%
Westbound	3	3	2	2	5	45	111	247	477	633	501	268	79	32	8	1	1	2,418
Percent	0.1%	0.1%	0.1%	0.1%	0.2%	1.9%	4.6%	10.2%	19.7%	26.2%	20.7%	11.1%	3.3%	1.3%	0.3%	0.0%	0.0%	100%
Total	3	4	2	2	12	89	220	502	897	1,100	958	619	253	82	19	6	3	4,771
Percent	0.1%	0.1%	0.0%	0.0%	0.3%	1.9%	4.6%	10.5%	18.8%	23.1%	20.1%	13.0%	5.3%	1.7%	0.4%	0.1%	0.1%	100%

Total Study Percentile Speed Summary		
Eastbound		
50th Percentile (Median)	53.5	mph
85th Percentile	63.3	mph
95th Percentile	67.8	mph
Westbound		
50th Percentile (Median)	52.6	mph
85th Percentile	60.2	mph
95th Percentile	64.9	mph
Allbound		
50th Percentile (Median)	######	mph
85th Percentile	######	mph
95th Percentile	######	mph

Total Study Speed Statistics		
Eastbound		
Mean (Average) Speed	53.6	mph
10 mph Pace	47.9 - 57.9	mph
Percent in Pace	40.5	%
Westbound		
Mean (Average) Speed	52.2	mph
10 mph Pace	47.4 - 57.4	mph
Percent in Pace	49.5	%
Allbound		
Mean (Average) Speed	######	mph
10 mph Pace	######	mph
Percent in Pace	######	%

Total Study Speeding Fact		
Allbound		
Posted Speed Limit	######	mph
Vehicle Exceeding Speed Limit	#VALUE!	veh
Percentage Exceeding Speed Limit	######	%
Mean Exceeding Speed	######	mph

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Tuesday, March 03, 2015
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	2	1	1	0	0	1	0	0	0	**5**
1:00 AM	0	0	0	0	0	0	0	2	0	2	1	1	1	0	0	0	0	**7**
2:00 AM	0	0	0	0	0	0	1	0	0	1	6	1	1	0	0	0	0	**10**
3:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	**3**
4:00 AM	0	0	0	0	0	0	0	5	4	2	3	3	4	2	0	0	0	**23**
5:00 AM	0	0	0	0	0	0	0	0	1	4	5	15	1	0	0	0	0	**26**
6:00 AM	0	0	0	0	0	0	0	0	1	6	8	12	5	0	1	1	0	**34**
7:00 AM	0	0	0	0	0	3	9	8	20	15	12	5	5	1	0	0	0	**78**
8:00 AM	0	0	0	0	0	0	0	2	8	13	10	2	1	3	0	0	0	**39**
9:00 AM	0	0	0	0	0	0	1	5	8	14	13	0	2	0	0	0	0	**43**
10:00 AM	0	0	0	0	0	2	6	9	15	7	6	3	5	1	1	0	0	**55**
11:00 AM	0	0	0	0	0	1	7	9	13	9	7	6	2	1	0	0	0	**55**
12:00 PM	0	0	0	0	0	2	1	6	12	11	8	4	5	0	1	0	0	**50**
1:00 PM	0	0	0	0	0	0	1	1	10	8	6	6	2	1	0	0	1	**36**
2:00 PM	0	0	0	0	0	1	5	7	9	7	10	8	2	1	2	0	0	**52**
3:00 PM	0	0	0	0	0	0	0	0	4	9	5	14	3	1	0	0	0	**36**
4:00 PM	0	0	0	0	0	0	3	1	6	10	8	12	10	1	0	0	0	**51**
5:00 PM	0	0	0	0	0	1	3	7	9	9	4	9	2	1	0	0	1	**46**
6:00 PM	0	0	0	0	0	0	0	3	2	7	5	5	1	1	0	0	0	**24**
7:00 PM	0	0	0	0	0	0	3	2	3	2	1	3	1	0	0	0	0	**15**
8:00 PM	0	0	0	0	0	1	1	1	0	1	3	2	2	0	0	0	0	**11**
9:00 PM	0	0	0	0	0	0	0	1	2	4	4	2	0	0	0	0	0	**13**
10:00 PM	0	0	0	0	0	0	0	3	0	1	2	1	1	1	1	0	0	**10**
11:00 PM	0	0	0	0	0	0	3	0	0	0	1	1	0	0	0	0	0	**5**
Total	**0**	**0**	**0**	**0**	**0**	**11**	**44**	**72**	**130**	**144**	**129**	**115**	**57**	**16**	**6**	**1**	**2**	**727**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.5%**	**6.1%**	**9.9%**	**17.9%**	**19.8%**	**17.7%**	**15.8%**	**7.8%**	**2.2%**	**0.8%**	**0.1%**	**0.3%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	53.7	mph	Mean (Average) Speed	53.9	mph
85th Percentile	64.0	mph	10 mph Pace	47.4 - 57.4	mph
95th Percentile	68.7	mph	Percent in Pace	40.2	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Tuesday, March 03, 2015
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	1	4	4	2	0	0	1	0	0	0	0	**12**
1:00 AM	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	0	0	0	1	4	2	0	1	0	0	0	0	0	0	**8**
3:00 AM	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	0	0	0	5	2	3	3	0	0	0	0	0	0	**13**
5:00 AM	0	0	0	0	0	0	1	5	5	7	4	0	0	0	0	0	0	**22**
6:00 AM	0	0	0	0	0	0	2	4	19	12	7	10	0	0	0	0	0	**54**
7:00 AM	0	0	0	0	1	1	2	4	24	19	10	3	1	0	0	0	0	**65**
8:00 AM	0	0	0	0	2	0	2	10	12	12	5	2	0	0	1	0	0	**46**
9:00 AM	0	0	0	0	0	0	0	2	6	18	4	3	1	0	1	0	0	**35**
10:00 AM	0	0	0	0	0	0	1	5	12	14	8	3	3	1	0	0	0	**47**
11:00 AM	0	0	1	2	0	3	6	9	14	11	7	2	0	1	0	0	0	**56**
12:00 PM	0	0	0	0	0	1	3	5	12	18	9	7	2	0	0	0	0	**57**
1:00 PM	0	0	0	0	0	2	1	4	9	11	12	4	0	0	0	0	0	**43**
2:00 PM	0	0	0	0	0	1	1	2	15	15	6	1	1	0	0	0	0	**42**
3:00 PM	0	0	0	0	0	2	9	0	4	14	14	10	1	0	0	0	0	**54**
4:00 PM	0	1	0	0	0	5	2	2	2	8	7	3	0	0	0	0	0	**30**
5:00 PM	0	0	0	0	0	0	3	2	7	8	16	11	2	1	0	0	0	**50**
6:00 PM	0	0	0	0	0	0	2	3	3	5	4	3	3	0	0	0	0	**23**
7:00 PM	0	0	0	0	0	0	0	3	4	3	3	1	1	0	0	0	0	**15**
8:00 PM	0	0	0	0	0	1	3	0	6	2	2	1	0	0	0	0	0	**15**
9:00 PM	0	0	0	0	0	0	1	1	0	2	1	4	0	1	0	0	0	**10**
10:00 PM	0	0	0	0	0	0	1	1	1	3	3	0	1	0	0	0	0	**10**
11:00 PM	0	0	0	0	0	0	2	2	1	1	2	0	0	0	0	0	0	**8**
Total	**0**	**1**	**1**	**2**	**3**	**16**	**45**	**82**	**164**	**190**	**128**	**68**	**17**	**4**	**2**	**0**	**0**	**723**
Percent	**0.0%**	**0.1%**	**0.1%**	**0.3%**	**0.4%**	**2.2%**	**6.2%**	**11.3%**	**22.7%**	**26.3%**	**17.7%**	**9.4%**	**2.4%**	**0.6%**	**0.3%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	51.0	mph	Mean (Average) Speed	51	mph
85th Percentile	59.1	mph	10 mph Pace	46.8 - 56.8	mph
95th Percentile	63.5	mph	Percent in Pace	51.6	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Wednesday, March 04, 2015
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	**3**
1:00 AM	0	0	0	0	0	0	1	0	0	2	0	0	1	0	0	0	0	**4**
2:00 AM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	**3**
3:00 AM	0	0	0	0	0	0	1	1	0	0	1	1	2	0	0	0	0	**6**
4:00 AM	0	0	0	0	0	0	0	1	1	1	1	1	3	1	0	0	0	**9**
5:00 AM	0	0	0	0	0	0	3	3	1	7	11	6	0	1	0	1	0	**33**
6:00 AM	0	0	0	0	0	0	1	1	5	8	11	7	2	2	0	1	0	**38**
7:00 AM	0	0	0	0	0	0	0	7	7	14	12	10	4	3	0	0	0	**57**
8:00 AM	0	0	0	0	1	0	4	9	10	10	2	5	0	0	0	0	0	**41**
9:00 AM	0	0	0	0	1	0	1	6	8	10	2	8	1	2	1	0	0	**40**
10:00 AM	0	0	0	0	0	0	1	5	21	6	11	8	2	0	1	0	0	**55**
11:00 AM	0	0	0	0	0	0	6	5	7	8	10	14	5	0	0	0	0	**55**
12:00 PM	0	0	0	0	0	0	4	14	17	13	17	6	4	1	0	0	0	**76**
1:00 PM	0	1	0	0	0	0	1	6	13	14	10	6	3	0	0	1	0	**55**
2:00 PM	0	0	0	0	0	0	0	8	20	18	7	9	3	1	0	0	0	**66**
3:00 PM	0	0	0	0	1	8	5	8	14	13	11	3	7	0	0	0	0	**70**
4:00 PM	0	0	0	0	1	0	2	5	9	7	7	13	3	1	0	0	0	**48**
5:00 PM	0	0	0	0	0	0	0	5	3	13	11	5	5	1	0	0	0	**43**
6:00 PM	0	0	0	0	0	0	0	3	4	13	6	8	4	0	0	0	0	**38**
7:00 PM	0	0	0	0	0	1	2	2	3	2	5	1	0	0	1	0	0	**17**
8:00 PM	0	0	0	0	0	0	1	5	2	2	2	0	0	0	0	0	0	**12**
9:00 PM	0	0	0	0	0	0	0	1	2	3	0	1	1	2	1	0	0	**11**
10:00 PM	0	0	0	0	0	1	1	0	5	1	1	0	0	0	0	0	0	**9**
11:00 PM	0	0	0	0	0	0	1	2	1	1	5	0	0	0	0	0	0	**10**
Total	**0**	**1**	**0**	**0**	**4**	**10**	**36**	**97**	**154**	**166**	**145**	**114**	**50**	**15**	**4**	**3**	**0**	**799**
Percent	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**0.5%**	**1.3%**	**4.5%**	**12.1%**	**19.3%**	**20.8%**	**18.1%**	**14.3%**	**6.3%**	**1.9%**	**0.5%**	**0.4%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	52.3	mph	Mean (Average) Speed	53.1	mph
85th Percentile	62.6	mph	10 mph Pace	44.5 - 54.5	mph
95th Percentile	67.1	mph	Percent in Pace	40.9	%

Mark Skaggs:425-250-0777
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Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Wednesday, March 04, 2015
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	**3**
1:00 AM	0	0	0	0	0	0	1	0	0	4	1	1	0	0	0	0	0	**7**
2:00 AM	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	**5**
3:00 AM	0	0	0	0	0	0	1	2	0	1	2	0	0	0	0	0	0	**6**
4:00 AM	0	0	0	0	0	4	0	1	2	4	4	0	0	0	0	0	0	**15**
5:00 AM	0	0	0	0	0	0	1	2	3	6	6	2	2	0	0	0	0	**22**
6:00 AM	0	0	0	0	0	1	1	1	12	22	17	8	0	0	0	0	0	**62**
7:00 AM	0	0	0	0	0	0	1	2	9	17	18	3	1	0	0	0	0	**51**
8:00 AM	0	0	0	0	0	4	1	4	6	11	10	4	0	2	1	0	0	**43**
9:00 AM	0	0	0	0	0	0	1	2	11	16	7	5	2	1	0	0	0	**45**
10:00 AM	0	0	0	0	0	0	0	6	6	16	11	3	1	0	0	0	0	**43**
11:00 AM	1	0	0	0	0	0	4	11	10	21	21	5	1	0	0	0	0	**74**
12:00 PM	1	0	1	0	0	1	0	5	9	17	21	9	1	0	0	0	0	**65**
1:00 PM	0	0	0	0	0	1	3	7	13	17	10	2	1	0	0	0	0	**54**
2:00 PM	0	0	0	0	0	0	1	7	12	29	15	7	0	1	0	0	0	**72**
3:00 PM	1	0	0	0	0	3	1	7	14	9	14	6	3	0	0	0	0	**58**
4:00 PM	0	0	0	0	0	0	1	1	10	5	11	13	3	2	0	0	0	**46**
5:00 PM	0	0	0	0	0	0	2	11	4	15	24	6	4	0	1	0	0	**67**
6:00 PM	0	0	0	0	0	0	1	1	4	4	2	2	4	2	0	0	0	**20**
7:00 PM	0	0	0	0	0	1	1	1	2	15	4	4	1	0	0	0	0	**29**
8:00 PM	0	0	0	0	0	0	2	2	2	7	2	2	0	0	0	0	0	**17**
9:00 PM	0	0	0	0	0	2	0	2	2	3	0	3	1	0	0	0	0	**13**
10:00 PM	0	0	0	0	0	0	0	1	2	2	1	2	0	2	0	0	0	**10**
11:00 PM	0	0	0	0	0	0	1	1	0	2	0	1	0	1	0	0	0	**6**
Total	**3**	**0**	**1**	**0**	**0**	**17**	**24**	**77**	**134**	**246**	**203**	**90**	**25**	**11**	**2**	**0**	**0**	**833**
Percent	**0.4%**	**0.0%**	**0.1%**	**0.0%**	**0.0%**	**2.0%**	**2.9%**	**9.2%**	**16.1%**	**29.5%**	**24.4%**	**10.8%**	**3.0%**	**1.3%**	**0.2%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	53.5	mph	Mean (Average) Speed	52.8	mph
85th Percentile	59.9	mph	10 mph Pace	50.6 - 60.6	mph
95th Percentile	64.6	mph	Percent in Pace	54.9	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Thursday, March 05, 2015
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0	1	0	**5**
3:00 AM	0	0	0	0	0	0	0	1	2	0	0	0	4	0	0	0	0	**7**
4:00 AM	0	0	0	0	0	0	0	3	2	4	2	2	2	0	0	0	0	**15**
5:00 AM	0	0	0	0	0	0	0	1	5	6	8	3	4	1	1	0	0	**29**
6:00 AM	0	0	0	0	0	0	2	1	8	11	8	8	5	3	0	0	0	**46**
7:00 AM	0	0	0	0	0	2	3	6	18	17	11	13	5	2	0	0	0	**77**
8:00 AM	0	0	0	0	0	0	2	4	9	6	15	6	5	0	0	0	0	**47**
9:00 AM	0	0	0	0	0	0	0	6	9	7	9	9	1	1	0	0	0	**42**
10:00 AM	0	0	0	0	0	1	2	9	15	13	23	6	5	0	0	0	0	**74**
11:00 AM	0	0	0	0	0	1	0	12	5	12	15	5	3	1	0	0	0	**54**
12:00 PM	0	0	0	0	0	9	6	8	4	12	15	12	4	2	0	0	0	**72**
1:00 PM	0	0	0	0	0	1	0	3	7	9	14	9	3	1	0	0	0	**47**
2:00 PM	0	0	0	0	0	0	2	9	13	9	4	4	9	2	0	0	0	**52**
3:00 PM	0	0	0	0	0	0	3	1	9	8	12	10	5	0	0	0	0	**48**
4:00 PM	0	0	0	0	0	4	2	6	2	14	11	10	4	2	0	0	0	**55**
5:00 PM	0	0	0	0	0	0	0	1	8	13	8	7	2	2	0	0	0	**41**
6:00 PM	0	0	0	0	0	4	0	1	8	3	8	12	3	1	0	0	0	**40**
7:00 PM	0	0	0	0	3	1	0	10	9	5	2	1	1	1	0	0	0	**33**
8:00 PM	0	0	0	0	0	0	0	0	1	1	6	1	0	0	0	0	0	**9**
9:00 PM	0	0	0	0	0	0	3	0	1	4	7	2	1	0	0	0	0	**18**
10:00 PM	0	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	**4**
11:00 PM	0	0	0	0	0	0	1	2	0	0	3	1	1	0	0	0	0	**8**
Total	**0**	**0**	**0**	**0**	**3**	**23**	**29**	**86**	**136**	**157**	**183**	**122**	**67**	**19**	**1**	**1**	**0**	**827**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.4%**	**2.8%**	**3.5%**	**10.4%**	**16.4%**	**19.0%**	**22.1%**	**14.8%**	**8.1%**	**2.3%**	**0.1%**	**0.1%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	54.4	mph	Mean (Average) Speed	53.8	mph
85th Percentile	63.1	mph	10 mph Pace	51.4 - 61.4	mph
95th Percentile	67.6	mph	Percent in Pace	42.4	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Thursday, March 05, 2015
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	2	3	0	0	1	0	0	0	0	0	**6**
1:00 AM	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	**3**
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**
3:00 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	**3**
4:00 AM	0	0	0	0	0	0	2	0	4	6	2	2	1	0	0	0	0	**17**
5:00 AM	0	0	0	0	0	0	1	5	6	4	4	3	0	0	0	0	0	**23**
6:00 AM	0	0	0	0	0	0	4	7	13	14	12	3	3	1	0	0	0	**57**
7:00 AM	0	0	0	0	0	0	2	10	19	12	14	7	1	2	0	0	0	**67**
8:00 AM	0	0	0	0	0	5	5	10	11	6	11	4	7	0	0	0	0	**59**
9:00 AM	0	0	0	0	0	0	5	3	11	19	12	9	2	0	0	0	0	**61**
10:00 AM	0	0	0	0	0	0	5	9	14	20	12	0	1	0	0	1	0	**62**
11:00 AM	0	0	0	0	0	0	3	4	16	13	6	11	4	2	0	0	0	**59**
12:00 PM	0	0	0	0	0	1	5	9	20	14	14	4	1	1	0	0	0	**69**
1:00 PM	0	0	0	0	0	1	1	4	5	17	14	6	3	0	0	0	0	**51**
2:00 PM	0	1	0	0	0	1	1	2	8	16	13	9	0	1	0	0	0	**52**
3:00 PM	0	0	0	0	0	0	1	2	7	16	6	9	3	1	2	0	0	**47**
4:00 PM	0	0	0	0	0	0	0	4	4	13	11	12	6	1	0	0	0	**51**
5:00 PM	0	0	0	0	0	0	1	1	3	3	11	16	3	3	1	0	1	**43**
6:00 PM	0	1	0	0	0	2	2	1	12	9	3	1	1	1	0	0	0	**33**
7:00 PM	0	0	0	0	2	1	0	1	8	5	15	3	0	2	0	0	0	**37**
8:00 PM	0	0	0	0	0	0	1	6	2	3	4	3	1	1	0	0	0	**21**
9:00 PM	0	0	0	0	0	1	2	0	5	0	1	2	0	0	0	0	0	**11**
10:00 PM	0	0	0	0	0	0	1	3	2	3	2	1	0	1	0	0	0	**13**
11:00 PM	0	0	0	0	0	0	0	4	5	4	2	1	0	0	0	0	0	**16**
Total	**0**	**2**	**0**	**0**	**2**	**12**	**42**	**88**	**179**	**197**	**170**	**110**	**37**	**17**	**4**	**1**	**1**	**862**
Percent	**0.0%**	**0.2%**	**0.0%**	**0.0%**	**0.2%**	**1.4%**	**4.9%**	**10.2%**	**20.8%**	**22.9%**	**19.7%**	**12.8%**	**4.3%**	**2.0%**	**0.5%**	**0.1%**	**0.1%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	52.8	mph	Mean (Average) Speed	52.7	mph
85th Percentile	61.3	mph	10 mph Pace	46.1 - 56.1	mph
95th Percentile	66.4	mph	Percent in Pace	45.9	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Total Study Average
Eastbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	**2**
1:00 AM	0	0	0	0	0	0	0	1	0	2	0	0	1	0	0	0	0	**4**
2:00 AM	0	0	0	0	0	0	0	1	0	0	3	1	0	0	0	0	0	**5**
3:00 AM	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	**4**
4:00 AM	0	0	0	0	0	0	0	3	2	2	2	2	3	1	0	0	0	**15**
5:00 AM	0	0	0	0	0	0	1	1	2	6	8	8	2	1	0	0	0	**29**
6:00 AM	0	0	0	0	0	0	1	1	5	8	9	9	4	2	0	1	0	**40**
7:00 AM	0	0	0	0	0	2	4	7	15	15	12	9	5	2	0	0	0	**71**
8:00 AM	0	0	0	0	0	0	2	5	9	10	9	4	2	1	0	0	0	**42**
9:00 AM	0	0	0	0	0	0	1	6	8	10	8	6	1	1	0	0	0	**41**
10:00 AM	0	0	0	0	0	1	3	8	17	9	13	6	4	0	1	0	0	**62**
11:00 AM	0	0	0	0	0	1	4	9	8	10	11	8	3	1	0	0	0	**55**
12:00 PM	0	0	0	0	0	4	4	9	11	12	13	7	4	1	0	0	0	**65**
1:00 PM	0	0	0	0	0	0	1	3	10	10	10	7	3	1	0	0	0	**45**
2:00 PM	0	0	0	0	0	0	2	8	14	11	7	7	5	1	1	0	0	**56**
3:00 PM	0	0	0	0	0	3	3	3	9	10	9	9	5	0	0	0	0	**51**
4:00 PM	0	0	0	0	0	1	2	4	6	10	9	12	6	1	0	0	0	**51**
5:00 PM	0	0	0	0	0	0	1	4	7	12	8	7	3	1	0	0	0	**43**
6:00 PM	0	0	0	0	0	1	0	2	5	8	6	8	3	1	0	0	0	**34**
7:00 PM	0	0	0	0	1	1	2	5	5	3	3	2	1	0	0	0	0	**23**
8:00 PM	0	0	0	0	0	0	1	2	1	1	4	1	1	0	0	0	0	**11**
9:00 PM	0	0	0	0	0	0	1	1	2	4	4	2	1	1	0	0	0	**16**
10:00 PM	0	0	0	0	0	0	1	1	2	1	1	1	0	0	0	0	0	**7**
11:00 PM	0	0	0	0	0	0	2	1	0	0	3	1	0	0	0	0	0	**7**
Total	**0**	**0**	**0**	**0**	**1**	**14**	**37**	**86**	**140**	**154**	**152**	**117**	**59**	**16**	**2**	**1**	**0**	**779**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**1.8%**	**4.7%**	**11.0%**	**18.0%**	**19.8%**	**19.5%**	**15.0%**	**7.6%**	**2.1%**	**0.3%**	**0.1%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	53.5	mph	Mean (Average) Speed	53.6	mph
85th Percentile	63.3	mph	10 mph Pace	47.9 - 57.9	mph
95th Percentile	67.8	mph	Percent in Pace	40.5	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 05

Total Study Average
Westbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	**5**
1:00 AM	0	0	0	0	0	0	1	2	0	1	0	1	0	0	0	0	0	**5**
2:00 AM	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	**4**
3:00 AM	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	**4**
4:00 AM	0	0	0	0	0	1	1	2	3	4	3	1	0	0	0	0	0	**15**
5:00 AM	0	0	0	0	0	0	1	4	5	6	5	2	1	0	0	0	0	**24**
6:00 AM	0	0	0	0	0	0	2	4	15	16	12	7	1	0	0	0	0	**57**
7:00 AM	0	0	0	0	0	0	2	5	17	16	14	4	1	1	0	0	0	**60**
8:00 AM	0	0	0	0	1	3	3	8	10	10	9	3	2	1	1	0	0	**51**
9:00 AM	0	0	0	0	0	0	2	2	9	18	8	6	2	0	0	0	0	**47**
10:00 AM	0	0	0	0	0	0	2	7	11	17	10	2	2	0	0	0	0	**51**
11:00 AM	0	0	0	1	0	1	4	8	13	15	11	6	2	1	0	0	0	**62**
12:00 PM	0	0	0	0	0	1	3	6	14	16	15	7	1	0	0	0	0	**63**
1:00 PM	0	0	0	0	0	1	2	5	9	15	12	4	1	0	0	0	0	**49**
2:00 PM	0	0	0	0	0	1	1	4	12	20	11	6	0	1	0	0	0	**56**
3:00 PM	0	0	0	0	0	2	4	3	8	13	11	8	2	0	1	0	0	**52**
4:00 PM	0	0	0	0	0	2	1	2	5	9	10	9	3	1	0	0	0	**42**
5:00 PM	0	0	0	0	0	0	2	5	5	9	17	11	3	1	1	0	0	**54**
6:00 PM	0	0	0	0	0	1	2	2	6	6	3	2	3	1	0	0	0	**26**
7:00 PM	0	0	0	0	1	1	0	2	5	8	7	3	1	1	0	0	0	**29**
8:00 PM	0	0	0	0	0	0	2	3	3	4	3	2	0	0	0	0	0	**17**
9:00 PM	0	0	0	0	0	1	1	1	2	2	1	3	0	0	0	0	0	**11**
10:00 PM	0	0	0	0	0	0	1	2	2	3	2	1	0	1	0	0	0	**12**
11:00 PM	0	0	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	**9**
Total	**0**	**0**	**0**	**1**	**2**	**15**	**38**	**83**	**159**	**212**	**167**	**91**	**25**	**9**	**3**	**0**	**0**	**805**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.2%**	**1.9%**	**4.7%**	**10.3%**	**19.8%**	**26.3%**	**20.7%**	**11.3%**	**3.1%**	**1.1%**	**0.4%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	52.6	mph	Mean (Average) Speed	52.2	mph
85th Percentile	60.2	mph	10 mph Pace	47.4 - 57.4	mph
95th Percentile	64.9	mph	Percent in Pace	49.5	%

Mark Skaggs:425-250-0777
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Location: SR 201 WEST OF FAIRVIEW
Date Range: 3/3/2015 - 3/9/2015
Site Code: 05

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	3/3/2015			3/4/2015			3/5/2015			3/6/2015			3/7/2015			3/8/2015			3/9/2015					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	5	12	17	3	3	6	1	6	7	-	-	-	-	-	-	-	-	-	-	-	-	3	7	10
1:00 AM	7	5	12	4	7	11	3	3	6	-	-	-	-	-	-	-	-	-	-	-	-	5	5	10
2:00 AM	10	8	18	3	5	8	5	1	6	-	-	-	-	-	-	-	-	-	-	-	-	6	5	11
3:00 AM	3	3	6	6	6	12	7	3	10	-	-	-	-	-	-	-	-	-	-	-	-	5	4	9
4:00 AM	23	13	36	9	15	24	15	17	32	-	-	-	-	-	-	-	-	-	-	-	-	16	15	31
5:00 AM	26	22	48	33	22	55	29	23	52	-	-	-	-	-	-	-	-	-	-	-	-	29	22	52
6:00 AM	34	54	88	38	62	100	46	57	103	-	-	-	-	-	-	-	-	-	-	-	-	39	58	97
7:00 AM	78	65	143	57	51	108	77	67	144	-	-	-	-	-	-	-	-	-	-	-	-	71	61	132
8:00 AM	39	46	85	41	43	84	47	59	106	-	-	-	-	-	-	-	-	-	-	-	-	42	49	92
9:00 AM	43	35	78	40	45	85	42	61	103	-	-	-	-	-	-	-	-	-	-	-	-	42	47	89
10:00 AM	55	47	102	55	43	98	74	62	136	-	-	-	-	-	-	-	-	-	-	-	-	61	51	112
11:00 AM	55	56	111	55	74	129	54	59	113	-	-	-	-	-	-	-	-	-	-	-	-	55	63	118
12:00 PM	50	57	107	76	65	141	72	69	141	-	-	-	-	-	-	-	-	-	-	-	-	66	64	130
1:00 PM	36	43	79	55	54	109	47	51	98	-	-	-	-	-	-	-	-	-	-	-	-	46	49	95
2:00 PM	52	42	94	66	72	138	52	52	104	-	-	-	-	-	-	-	-	-	-	-	-	57	55	112
3:00 PM	36	54	90	70	58	128	48	47	95	-	-	-	-	-	-	-	-	-	-	-	-	51	53	104
4:00 PM	51	30	81	48	46	94	55	51	106	-	-	-	-	-	-	-	-	-	-	-	-	51	42	94
5:00 PM	46	50	96	43	67	110	41	43	84	-	-	-	-	-	-	-	-	-	-	-	-	43	53	97
6:00 PM	24	23	47	38	20	58	40	33	73	-	-	-	-	-	-	-	-	-	-	-	-	34	25	59
7:00 PM	15	15	30	17	29	46	33	37	70	-	-	-	-	-	-	-	-	-	-	-	-	22	27	49
8:00 PM	11	15	26	12	17	29	9	21	30	-	-	-	-	-	-	-	-	-	-	-	-	11	18	28
9:00 PM	13	10	23	11	13	24	18	11	29	-	-	-	-	-	-	-	-	-	-	-	-	14	11	25
10:00 PM	10	10	20	9	10	19	4	13	17	-	-	-	-	-	-	-	-	-	-	-	-	8	11	19
11:00 PM	5	8	13	10	6	16	8	16	24	-	-	-	-	-	-	-	-	-	-	-	-	8	10	18
Total	**727**	**723**	**1,450**	**799**	**833**	**1,632**	**827**	**862**	**1,689**	-	-	-	-	-	-	-	-	-	-	-	-	**784**	**806**	**1,590**
Percent	**50%**	**50%**	-	**49%**	**51%**	-	**49%**	**51%**	-	-	-	-	-	-	-	-	-	-	-	-	-	**49%**	**51%**	-

1. Mid-week average includes data between Tuesday and Thursday.

Mark Skaggs:425-250-0777
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Vehicle Classification Report Summary

Location: SR 200 SOUTH OF FAIRVIEW

Count Direction: Northbound / Southbound

Date Range: 3/3/2015 to 3/5/2015

Site Code: 06

	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
Study Total														
Northbound	19	2,533	5,345	125	341	95	45	118	461	240	18	10	339	9,689
Percent	0.2%	26.1%	55.2%	1.3%	3.5%	1.0%	0.5%	1.2%	4.8%	2.5%	0.2%	0.1%	3.5%	100%
Southbound	25	1,274	5,461	179	1,484	79	86	132	418	256	25	7	283	9,709
Percent	0.3%	13.1%	56.2%	1.8%	15.3%	0.8%	0.9%	1.4%	4.3%	2.6%	0.3%	0.1%	2.9%	100%
Total	44	3,807	10,806	304	1,825	174	131	250	879	496	43	17	622	19,398
Percent	0.2%	19.6%	55.7%	1.6%	9.4%	0.9%	0.7%	1.3%	4.5%	2.6%	0.2%	0.1%	3.2%	100%

FHWA Vehicle Classification	
Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Tuesday, March 03, 2015
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	5	9	1	0	0	0	0	2	0	0	0	1	**18**
1:00 AM	0	1	5	0	0	0	0	0	1	1	0	2	3	**13**
2:00 AM	0	4	5	1	0	0	0	0	1	1	0	0	0	**12**
3:00 AM	0	5	14	0	7	1	1	0	2	0	0	0	3	**33**
4:00 AM	0	17	59	1	1	1	0	3	3	2	0	0	4	**91**
5:00 AM	0	30	116	1	10	0	1	5	7	3	1	0	2	**176**
6:00 AM	0	42	180	3	11	3	3	2	13	12	0	0	8	**277**
7:00 AM	0	43	111	6	14	2	0	4	7	16	0	0	14	**217**
8:00 AM	0	34	99	4	12	1	2	4	5	3	0	0	7	**171**
9:00 AM	0	39	85	2	13	1	1	2	8	5	1	0	7	**164**
10:00 AM	0	31	97	2	9	4	0	3	9	2	1	0	7	**165**
11:00 AM	0	38	85	1	9	2	1	2	6	3	1	0	3	**151**
12:00 PM	0	46	93	4	7	2	1	0	9	4	0	0	10	**176**
1:00 PM	0	43	96	3	9	0	0	3	7	7	0	0	9	**177**
2:00 PM	1	34	117	2	8	3	1	0	9	4	0	0	4	**183**
3:00 PM	0	74	131	2	2	0	0	1	7	2	0	0	11	**230**
4:00 PM	0	48	130	2	8	1	1	2	4	4	0	0	4	**204**
5:00 PM	0	83	119	0	5	0	0	1	10	5	1	0	3	**227**
6:00 PM	0	59	94	3	3	1	0	0	2	3	0	0	5	**170**
7:00 PM	0	48	55	0	3	3	0	0	7	0	0	0	4	**120**
8:00 PM	0	25	43	0	8	0	0	1	1	0	0	0	1	**79**
9:00 PM	0	14	23	0	1	0	0	1	6	0	0	0	1	**46**
10:00 PM	0	13	22	0	0	0	0	1	1	0	0	0	2	**39**
11:00 PM	0	10	16	0	0	0	0	0	4	1	0	0	3	**34**
Total	**1**	**786**	**1,804**	**38**	**140**	**25**	**12**	**35**	**131**	**78**	**5**	**2**	**116**	**3,173**
Percent	**0.0%**	**24.8%**	**56.9%**	**1.2%**	**4.4%**	**0.8%**	**0.4%**	**1.1%**	**4.1%**	**2.5%**	**0.2%**	**0.1%**	**3.7%**	

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Tuesday, March 03, 2015
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	1	3	0	1	0	0	0	1	1	0	0	0	**7**
1:00 AM	0	3	12	0	2	0	0	0	1	1	0	0	2	**21**
2:00 AM	0	3	4	0	0	0	0	0	0	1	0	0	1	**9**
3:00 AM	0	0	5	0	1	0	0	0	1	1	0	0	0	**8**
4:00 AM	0	8	10	1	2	0	0	0	2	1	0	0	0	**24**
5:00 AM	0	17	41	0	6	0	0	0	3	0	0	0	4	**71**
6:00 AM	0	30	93	0	15	1	2	3	6	3	0	0	7	**160**
7:00 AM	2	39	133	1	16	0	1	1	8	7	1	0	0	**209**
8:00 AM	0	16	112	3	33	2	1	2	3	6	0	0	1	**179**
9:00 AM	1	13	92	4	26	1	2	2	8	7	1	0	12	**169**
10:00 AM	2	30	99	3	17	3	2	3	6	4	0	0	4	**173**
11:00 AM	0	14	111	3	28	3	2	3	12	6	2	0	6	**190**
12:00 PM	0	30	115	0	30	1	1	1	6	1	0	0	6	**191**
1:00 PM	0	24	113	4	31	2	4	5	13	4	0	1	5	**206**
2:00 PM	0	20	119	8	37	3	1	7	13	6	2	0	6	**222**
3:00 PM	1	32	154	7	40	2	3	2	9	7	0	0	11	**268**
4:00 PM	0	29	179	6	49	1	5	3	12	4	1	0	6	**295**
5:00 PM	0	26	167	1	58	3	2	2	11	9	0	0	5	**284**
6:00 PM	1	19	91	2	15	1	2	4	1	3	0	0	7	**146**
7:00 PM	0	20	42	3	13	0	1	0	3	4	0	0	5	**91**
8:00 PM	0	9	31	2	9	0	0	3	1	1	1	0	5	**62**
9:00 PM	0	8	23	0	11	0	1	0	4	2	0	0	1	**50**
10:00 PM	0	10	19	0	4	2	0	2	1	0	0	1	3	**42**
11:00 PM	0	2	6	1	1	0	0	1	1	1	0	0	0	**13**
Total	**7**	**403**	**1,774**	**49**	**445**	**25**	**30**	**44**	**126**	**80**	**8**	**2**	**97**	**3,090**
Percent	**0.2%**	**13.0%**	**57.4%**	**1.6%**	**14.4%**	**0.8%**	**1.0%**	**1.4%**	**4.1%**	**2.6%**	**0.3%**	**0.1%**	**3.1%**	

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

DATA SOLUTIONS

Wednesday, March 04, 2015
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	13	4	0	0	1	0	0	6	0	0	0	2	**26**
1:00 AM	0	3	4	1	1	0	0	0	1	1	0	2	1	**14**
2:00 AM	0	6	9	0	0	0	0	0	1	0	0	0	3	**19**
3:00 AM	0	7	17	0	0	0	0	0	1	0	0	0	3	**28**
4:00 AM	0	9	50	1	2	3	1	1	1	1	0	0	3	**72**
5:00 AM	0	25	109	3	6	3	2	0	1	6	0	0	6	**161**
6:00 AM	0	33	171	1	10	2	4	2	10	3	0	0	5	**241**
7:00 AM	2	49	126	6	8	2	1	5	11	27	1	1	10	**249**
8:00 AM	0	36	104	2	5	1	1	5	8	5	1	0	10	**178**
9:00 AM	0	46	90	4	4	1	0	2	15	4	1	0	7	**174**
10:00 AM	1	47	96	8	8	3	0	2	10	4	2	0	5	**186**
11:00 AM	0	47	96	5	4	2	0	1	10	7	0	0	3	**175**
12:00 PM	0	39	98	0	1	3	1	1	13	4	0	0	7	**167**
1:00 PM	0	56	112	2	2	3	3	2	9	4	0	0	8	**201**
2:00 PM	1	52	112	5	6	0	2	4	9	4	2	0	3	**200**
3:00 PM	0	72	116	1	4	0	0	2	7	2	1	0	6	**211**
4:00 PM	1	90	117	1	10	6	1	0	3	1	0	0	6	**236**
5:00 PM	0	82	139	0	4	1	0	1	7	2	0	1	5	**242**
6:00 PM	0	49	78	1	3	0	0	0	2	1	0	0	1	**135**
7:00 PM	0	41	58	1	2	0	0	0	5	4	0	0	6	**117**
8:00 PM	0	35	56	1	0	0	0	1	5	2	0	0	1	**101**
9:00 PM	0	17	30	0	1	0	0	0	5	0	0	0	6	**59**
10:00 PM	0	7	17	0	0	0	0	2	3	1	0	0	0	**30**
11:00 PM	0	9	10	0	0	0	0	2	5	0	0	0	1	**27**
Total	**5**	**870**	**1,819**	**43**	**81**	**31**	**16**	**33**	**148**	**83**	**8**	**4**	**108**	**3,249**
Percent	**0.2%**	**26.8%**	**56.0%**	**1.3%**	**2.5%**	**1.0%**	**0.5%**	**1.0%**	**4.6%**	**2.6%**	**0.2%**	**0.1%**	**3.3%**	

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Wednesday, March 04, 2015
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	10	1	1	1	0	0	3	0	0	0	0	**20**
1:00 AM	0	5	5	0	1	1	0	0	1	2	0	0	1	**16**
2:00 AM	0	7	8	1	0	0	0	0	1	1	0	0	1	**19**
3:00 AM	0	1	5	0	1	0	0	0	1	0	0	0	1	**9**
4:00 AM	0	6	20	1	5	1	0	1	2	2	0	0	2	**40**
5:00 AM	0	19	48	0	12	1	1	0	2	3	0	0	3	**89**
6:00 AM	0	40	83	1	20	3	0	2	4	5	0	1	4	**163**
7:00 AM	1	43	136	5	14	0	0	1	4	2	0	0	5	**211**
8:00 AM	0	30	118	1	24	1	4	3	11	6	2	0	5	**205**
9:00 AM	0	25	96	1	21	2	4	1	6	3	0	0	4	**163**
10:00 AM	0	32	111	3	22	1	3	1	11	6	0	0	8	**198**
11:00 AM	2	21	115	8	31	1	3	2	9	1	0	0	8	**201**
12:00 PM	1	22	124	1	27	0	1	3	9	3	0	0	7	**198**
1:00 PM	0	17	133	4	34	3	3	5	11	0	2	0	2	**214**
2:00 PM	0	21	120	7	39	2	3	2	14	3	2	0	6	**219**
3:00 PM	1	30	141	8	30	3	1	1	6	13	0	0	6	**240**
4:00 PM	2	29	160	6	68	2	2	3	9	10	0	0	6	**297**
5:00 PM	0	40	175	3	47	0	2	1	9	10	0	0	8	**295**
6:00 PM	0	31	106	1	29	1	0	1	4	5	0	0	7	**185**
7:00 PM	0	19	53	2	30	0	0	0	4	3	1	0	4	**116**
8:00 PM	0	7	42	3	5	0	1	1	3	0	0	0	5	**67**
9:00 PM	0	5	23	1	2	0	1	1	7	1	0	0	2	**43**
10:00 PM	0	6	24	2	2	1	1	0	2	2	1	1	2	**44**
11:00 PM	0	2	10	0	0	0	0	0	3	2	0	0	1	**18**
Total	**7**	**462**	**1,866**	**60**	**465**	**24**	**30**	**29**	**136**	**83**	**8**	**2**	**98**	**3,270**
Percent	**0.2%**	**14.1%**	**57.1%**	**1.8%**	**14.2%**	**0.7%**	**0.9%**	**0.9%**	**4.2%**	**2.5%**	**0.2%**	**0.1%**	**3.0%**	

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Thursday, March 05, 2015
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	2	0	0	0	0	0	3	0	0	1	2	**12**
1:00 AM	0	3	5	1	0	0	0	1	2	0	0	2	4	**18**
2:00 AM	0	7	6	0	0	0	0	0	0	1	0	0	5	**19**
3:00 AM	0	7	17	0	1	0	0	0	1	3	0	0	2	**31**
4:00 AM	0	19	47	2	2	0	0	3	3	0	0	0	3	**79**
5:00 AM	0	31	108	0	4	3	2	4	1	5	0	0	1	**159**
6:00 AM	1	40	172	5	10	7	3	3	16	7	0	0	5	**269**
7:00 AM	1	77	103	4	8	7	3	8	9	4	0	0	17	**241**
8:00 AM	0	50	94	2	11	9	1	6	16	5	1	0	11	**206**
9:00 AM	0	38	90	3	8	1	0	3	15	3	1	0	7	**169**
10:00 AM	1	41	88	1	6	1	1	4	8	8	0	0	6	**165**
11:00 AM	3	44	89	2	10	4	2	5	16	4	1	0	4	**184**
12:00 PM	0	55	90	9	8	0	1	0	12	5	1	0	7	**188**
1:00 PM	1	53	101	3	4	0	1	1	9	6	0	0	8	**187**
2:00 PM	1	69	101	2	10	1	0	2	17	6	0	0	6	**215**
3:00 PM	0	71	98	2	6	1	0	2	17	5	0	0	8	**210**
4:00 PM	0	55	129	0	9	1	1	3	5	2	1	0	5	**211**
5:00 PM	3	58	126	4	14	1	0	3	5	5	0	0	2	**221**
6:00 PM	1	53	100	2	4	0	0	0	6	4	0	0	2	**172**
7:00 PM	0	28	52	1	4	1	1	1	7	1	0	0	3	**99**
8:00 PM	0	38	48	0	1	2	0	1	6	3	0	0	0	**99**
9:00 PM	0	24	31	0	0	0	0	0	3	0	0	0	3	**61**
10:00 PM	0	9	19	0	0	0	0	0	2	1	0	0	2	**33**
11:00 PM	1	3	6	1	0	0	1	0	3	1	0	1	2	**19**
Total	**13**	**877**	**1,722**	**44**	**120**	**39**	**17**	**50**	**182**	**79**	**5**	**4**	**115**	**3,267**
Percent	**0.4%**	**26.8%**	**52.7%**	**1.3%**	**3.7%**	**1.2%**	**0.5%**	**1.5%**	**5.6%**	**2.4%**	**0.2%**	**0.1%**	**3.5%**	

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Thursday, March 05, 2015
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	2	4	0	2	0	0	1	4	0	0	0	1	**14**
1:00 AM	0	3	3	1	1	0	0	0	1	1	0	0	1	**11**
2:00 AM	0	1	7	0	1	0	0	0	0	0	0	0	1	**10**
3:00 AM	0	0	3	0	2	1	0	1	3	1	0	0	2	**13**
4:00 AM	0	8	9	1	5	0	0	1	3	2	0	0	1	**30**
5:00 AM	0	18	51	0	12	2	0	1	0	0	0	0	1	**85**
6:00 AM	1	37	97	1	10	1	0	0	8	3	0	0	2	**160**
7:00 AM	0	64	130	1	22	2	3	2	6	5	0	0	6	**241**
8:00 AM	1	27	86	2	18	3	3	6	8	5	1	0	4	**164**
9:00 AM	0	22	93	3	23	3	1	3	13	8	0	0	5	**174**
10:00 AM	2	18	94	7	33	1	2	8	9	10	2	0	4	**190**
11:00 AM	2	23	122	6	37	1	0	5	11	7	0	0	6	**220**
12:00 PM	1	23	110	4	39	1	2	7	6	6	1	0	4	**204**
1:00 PM	0	20	115	5	34	2	4	0	17	10	1	0	8	**216**
2:00 PM	2	28	136	9	43	2	1	4	12	5	0	0	9	**251**
3:00 PM	1	26	156	6	37	1	2	2	13	7	0	0	10	**261**
4:00 PM	1	24	186	8	86	3	3	7	7	7	2	1	3	**338**
5:00 PM	0	13	150	8	69	4	1	1	12	8	1	0	7	**274**
6:00 PM	0	22	114	3	48	1	3	6	4	2	1	0	5	**209**
7:00 PM	0	10	58	4	33	0	0	2	4	2	0	0	1	**114**
8:00 PM	0	10	43	0	9	1	1	0	3	1	0	0	2	**70**
9:00 PM	0	3	23	1	7	1	0	1	5	0	0	1	2	**44**
10:00 PM	0	2	20	0	1	0	0	0	3	1	0	0	3	**30**
11:00 PM	0	5	11	0	2	0	0	1	4	2	0	1	0	**26**
Total	**11**	**409**	**1,821**	**70**	**574**	**30**	**26**	**59**	**156**	**93**	**9**	**3**	**88**	**3,349**
Percent	**0.3%**	**12.2%**	**54.4%**	**2.1%**	**17.1%**	**0.9%**	**0.8%**	**1.8%**	**4.7%**	**2.8%**	**0.3%**	**0.1%**	**2.6%**	

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Total Study Average
Northbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	7	5	0	0	0	0	0	4	0	0	0	2	**18**
1:00 AM	0	2	5	1	0	0	0	0	1	1	0	2	3	**15**
2:00 AM	0	6	7	0	0	0	0	0	1	1	0	0	3	**18**
3:00 AM	0	6	16	0	3	0	0	0	1	1	0	0	3	**30**
4:00 AM	0	15	52	1	2	1	0	2	2	1	0	0	3	**79**
5:00 AM	0	29	111	1	7	2	2	3	3	5	0	0	3	**166**
6:00 AM	0	38	174	3	10	4	3	2	13	7	0	0	6	**260**
7:00 AM	1	56	113	5	10	4	1	6	9	16	0	0	14	**235**
8:00 AM	0	40	99	3	9	4	1	5	10	4	1	0	9	**185**
9:00 AM	0	41	88	3	8	1	0	2	13	4	1	0	7	**168**
10:00 AM	1	40	94	4	8	3	0	3	9	5	1	0	6	**174**
11:00 AM	1	43	90	3	8	3	1	3	11	5	1	0	3	**172**
12:00 PM	0	47	94	4	5	2	1	0	11	4	0	0	8	**176**
1:00 PM	0	51	103	3	5	1	1	2	8	6	0	0	8	**188**
2:00 PM	1	52	110	3	8	1	1	2	12	5	1	0	4	**200**
3:00 PM	0	72	115	2	4	0	0	2	10	3	0	0	8	**216**
4:00 PM	0	64	125	1	9	3	1	2	4	2	0	0	5	**216**
5:00 PM	1	74	128	1	8	1	0	2	7	4	0	0	3	**229**
6:00 PM	0	54	91	2	3	0	0	0	3	3	0	0	3	**159**
7:00 PM	0	39	55	1	3	1	0	0	6	2	0	0	4	**111**
8:00 PM	0	33	49	0	3	1	0	1	4	2	0	0	1	**94**
9:00 PM	0	18	28	0	1	0	0	0	5	0	0	0	3	**55**
10:00 PM	0	10	19	0	0	0	0	1	2	1	0	0	1	**34**
11:00 PM	0	7	11	0	0	0	0	1	4	1	0	0	2	**26**
Total	**5**	**844**	**1,782**	**41**	**114**	**32**	**12**	**39**	**153**	**83**	**5**	**2**	**112**	**3,224**
Percent	**0.2%**	**26.2%**	**55.3%**	**1.3%**	**3.5%**	**1.0%**	**0.4%**	**1.2%**	**4.7%**	**2.6%**	**0.2%**	**0.1%**	**3.5%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Total Study Average
Southbound

Time	FHWA Vehicle Classification													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	Volume
12:00 AM	0	2	6	0	1	0	0	0	3	0	0	0	0	**12**
1:00 AM	0	4	7	0	1	0	0	0	1	1	0	0	1	**15**
2:00 AM	0	4	6	0	0	0	0	0	0	1	0	0	1	**12**
3:00 AM	0	0	4	0	1	0	0	0	2	1	0	0	1	**9**
4:00 AM	0	7	13	1	4	0	0	1	2	2	0	0	1	**31**
5:00 AM	0	18	47	0	10	1	0	0	2	1	0	0	3	**82**
6:00 AM	0	36	91	1	15	2	1	2	6	4	0	0	4	**162**
7:00 AM	1	49	133	2	17	1	1	1	6	5	0	0	4	**220**
8:00 AM	0	24	105	2	25	2	3	4	7	6	1	0	3	**182**
9:00 AM	0	20	94	3	23	2	2	2	9	6	0	0	7	**168**
10:00 AM	1	27	101	4	24	2	2	4	9	7	1	0	5	**187**
11:00 AM	1	19	116	6	32	2	2	3	11	5	1	0	7	**205**
12:00 PM	1	25	116	2	32	1	1	4	7	3	0	0	6	**198**
1:00 PM	0	20	120	4	33	2	4	3	14	5	1	0	5	**211**
2:00 PM	1	23	125	8	40	2	2	4	13	5	1	0	7	**231**
3:00 PM	1	29	150	7	36	2	2	2	9	9	0	0	9	**256**
4:00 PM	1	27	175	7	68	2	3	4	9	7	1	0	5	**309**
5:00 PM	0	26	164	4	58	2	2	1	11	9	0	0	7	**284**
6:00 PM	0	24	104	2	31	1	2	4	3	3	0	0	6	**180**
7:00 PM	0	16	51	3	25	0	0	1	4	3	0	0	3	**106**
8:00 PM	0	9	39	2	8	0	1	1	2	1	0	0	4	**67**
9:00 PM	0	5	23	1	7	0	1	1	5	1	0	0	2	**46**
10:00 PM	0	6	21	1	2	1	0	1	2	1	0	1	3	**39**
11:00 PM	0	3	9	0	1	0	0	1	3	2	0	0	0	**19**
Total	**7**	**423**	**1,820**	**60**	**494**	**25**	**29**	**44**	**140**	**88**	**6**	**1**	**94**	**3,231**
Percent	**0.2%**	**13.1%**	**56.3%**	**1.9%**	**15.3%**	**0.8%**	**0.9%**	**1.4%**	**4.3%**	**2.7%**	**0.2%**	**0.0%**	**2.9%**	

Note: Average only condsidered on days with 24-hours of data.

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

3-Day (Tuesday - Thursday) Average
Northbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	10	6	0	0	1	0	0	5	0	0	0	2	**23**
1:00 AM	0	2	4	1	1	0	0	0	1	1	0	2	2	**14**
2:00 AM	0	5	8	0	0	0	0	0	1	0	0	0	2	**17**
3:00 AM	0	6	16	0	2	0	0	0	1	0	0	0	3	**30**
4:00 AM	0	12	53	1	2	2	1	2	2	1	0	0	3	**78**
5:00 AM	0	27	111	2	7	2	2	2	3	5	0	0	5	**166**
6:00 AM	0	36	174	2	10	2	4	2	11	6	0	0	6	**253**
7:00 AM	1	47	121	6	10	2	1	5	10	23	1	1	11	**238**
8:00 AM	0	35	102	3	7	1	1	5	7	4	1	0	9	**176**
9:00 AM	0	44	88	3	7	1	0	2	13	4	1	0	7	**171**
10:00 AM	1	42	96	6	8	3	0	2	10	3	2	0	6	**179**
11:00 AM	0	44	92	4	6	2	0	1	9	6	0	0	3	**167**
12:00 PM	0	41	96	1	3	3	1	1	12	4	0	0	8	**170**
1:00 PM	0	52	107	2	4	2	2	2	8	5	0	0	8	**193**
2:00 PM	1	46	114	4	7	1	2	3	9	4	1	0	3	**194**
3:00 PM	0	73	121	1	3	0	0	2	7	2	1	0	8	**217**
4:00 PM	1	76	121	1	9	4	1	1	3	2	0	0	5	**225**
5:00 PM	0	82	132	0	4	1	0	1	8	3	0	1	4	**237**
6:00 PM	0	52	83	2	3	0	0	0	2	2	0	0	2	**147**
7:00 PM	0	43	57	1	2	1	0	0	6	3	0	0	5	**118**
8:00 PM	0	32	52	1	3	0	0	1	4	1	0	0	1	**94**
9:00 PM	0	16	28	0	1	0	0	0	5	0	0	0	4	**55**
10:00 PM	0	9	19	0	0	0	0	2	2	1	0	0	1	**33**
11:00 PM	0	9	12	0	0	0	0	1	5	0	0	0	2	**29**
Total	**4**	**842**	**1,814**	**41**	**101**	**29**	**15**	**34**	**142**	**81**	**7**	**3**	**111**	**3,224**
Percent	**0.1%**	**26.1%**	**56.3%**	**1.3%**	**3.1%**	**0.9%**	**0.5%**	**1.0%**	**4.4%**	**2.5%**	**0.2%**	**0.1%**	**3.4%**	

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

3-Day (Tuesday - Thursday) Average
Southbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	3	8	1	1	1	0	0	2	0	0	0	0	**16**
1:00 AM	0	4	7	0	1	1	0	0	1	2	0	0	1	**18**
2:00 AM	0	6	7	1	0	0	0	0	1	1	0	0	1	**16**
3:00 AM	0	1	5	0	1	0	0	0	1	0	0	0	1	**9**
4:00 AM	0	7	17	1	4	1	0	1	2	2	0	0	1	**35**
5:00 AM	0	18	46	0	10	1	1	0	2	2	0	0	3	**83**
6:00 AM	0	37	86	1	18	2	1	2	5	4	0	1	5	**162**
7:00 AM	1	42	135	4	15	0	0	1	5	4	0	0	3	**210**
8:00 AM	0	25	116	2	27	1	3	3	8	6	1	0	4	**196**
9:00 AM	0	21	95	2	23	2	3	1	7	4	0	0	7	**165**
10:00 AM	1	31	107	3	20	2	3	2	9	5	0	0	7	**190**
11:00 AM	1	19	114	6	30	2	3	2	10	3	1	0	7	**197**
12:00 PM	1	25	121	1	28	0	1	2	8	2	0	0	7	**196**
1:00 PM	0	19	126	4	33	3	3	5	12	1	1	0	3	**211**
2:00 PM	0	21	120	7	38	2	2	4	14	4	2	0	6	**220**
3:00 PM	1	31	145	8	33	3	2	1	7	11	0	0	8	**249**
4:00 PM	1	29	166	6	62	2	3	3	10	8	0	0	6	**296**
5:00 PM	0	35	172	2	51	1	2	1	10	10	0	0	7	**291**
6:00 PM	0	27	101	1	24	1	1	2	3	4	0	0	7	**172**
7:00 PM	0	19	49	2	24	0	0	0	4	3	1	0	4	**108**
8:00 PM	0	8	38	3	6	0	1	2	2	0	0	0	5	**65**
9:00 PM	0	6	23	1	5	0	1	1	6	1	0	0	2	**45**
10:00 PM	0	7	22	1	3	1	1	1	2	1	1	1	2	**43**
11:00 PM	0	2	9	0	0	0	0	0	2	2	0	0	1	**16**
Total	**7**	**442**	**1,835**	**56**	**458**	**24**	**30**	**34**	**133**	**82**	**8**	**2**	**98**	**3,210**
Percent	**0.2%**	**13.8%**	**57.2%**	**1.8%**	**14.3%**	**0.8%**	**0.9%**	**1.1%**	**4.1%**	**2.6%**	**0.2%**	**0.1%**	**3.0%**	

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Vehicle Speed Report Summary

Location: SR 200 SOUTH OF FAIRVIEW

Count Direction: Northbound / Southbound

Date Range: 3/3/2015 to 3/5/2015

Site Code: 06

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	1	1	15	11	3	14	62	301	1,203	3,044	3,076	1,386	433	108	20	6	5	9,689
Percent	0.0%	0.0%	0.2%	0.1%	0.0%	0.1%	0.6%	3.1%	12.4%	31.4%	31.7%	14.3%	4.5%	1.1%	0.2%	0.1%	0.1%	100%
Southbound	0	2	10	15	11	11	25	60	207	469	1,501	2,541	2,569	1,599	522	120	47	9,709
Percent	0.0%	0.0%	0.1%	0.2%	0.1%	0.1%	0.3%	0.6%	2.1%	4.8%	15.5%	26.2%	26.5%	16.5%	5.4%	1.2%	0.5%	100%
Total	1	3	25	26	14	25	87	361	1,410	3,513	4,577	3,927	3,002	1,707	542	126	52	19,398
Percent	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.4%	1.9%	7.3%	18.1%	23.6%	20.2%	15.5%	8.8%	2.8%	0.6%	0.3%	100%

Total Study Percentile Speed Summary		
Northbound		
50th Percentile (Median)	55.3	mph
85th Percentile	61.3	mph
95th Percentile	65.5	mph
Southbound		
50th Percentile (Median)	64.9	mph
85th Percentile	71.8	mph
95th Percentile	76.3	mph
Allbound		
50th Percentile (Median)	######	mph
85th Percentile	######	mph
95th Percentile	######	mph

Total Study Speed Statistics		
Northbound		
Mean (Average) Speed	55.3	mph
10 mph Pace	49.9 - 59.9	mph
Percent in Pace	63.5	%
Southbound		
Mean (Average) Speed	64.7	mph
10 mph Pace	60.6 - 70.6	mph
Percent in Pace	53.2	%
Allbound		
Mean (Average) Speed	######	mph
10 mph Pace	######	mph
Percent in Pace	######	%

Total Study Speeding Fact		
Allbound		
Posted Speed Limit	######	mph
Vehicle Exceeding Speed Limit	#VALUE!	veh
Percentage Exceeding Speed Limit	######	%
Mean Exceeding Speed	######	mph

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Tuesday, March 03, 2015
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	2	0	2	3	7	2	1	1	0	0	0	**18**
1:00 AM	0	0	0	0	0	0	1	0	3	3	5	0	1	0	0	0	0	**13**
2:00 AM	0	0	0	0	0	0	0	1	1	0	2	0	7	0	0	1	0	**12**
3:00 AM	0	0	0	0	0	0	0	0	3	5	14	6	4	0	1	0	0	**33**
4:00 AM	0	0	0	0	0	0	1	2	10	28	26	20	3	0	1	0	0	**91**
5:00 AM	0	0	0	0	0	1	1	5	27	54	60	21	4	2	0	0	1	**176**
6:00 AM	0	0	1	0	0	0	1	8	28	92	100	35	11	1	0	0	0	**277**
7:00 AM	0	0	2	0	0	0	1	6	26	71	87	19	3	2	0	0	0	**217**
8:00 AM	0	0	0	1	1	0	0	3	30	53	50	26	6	0	1	0	0	**171**
9:00 AM	0	0	0	0	0	0	0	3	11	32	68	33	11	6	0	0	0	**164**
10:00 AM	0	0	0	0	0	1	0	4	12	48	46	37	15	2	0	0	0	**165**
11:00 AM	0	0	0	0	0	0	1	2	8	44	49	26	16	5	0	0	0	**151**
12:00 PM	0	0	0	0	0	0	0	8	23	54	53	31	6	0	1	0	0	**176**
1:00 PM	0	0	1	0	1	0	0	2	17	48	54	32	16	6	0	0	0	**177**
2:00 PM	0	0	0	0	0	0	0	0	16	47	55	34	24	6	1	0	0	**183**
3:00 PM	0	0	0	0	0	0	0	4	17	66	96	39	7	1	0	0	0	**230**
4:00 PM	0	0	0	1	0	0	0	2	22	42	71	42	16	8	0	0	0	**204**
5:00 PM	0	0	0	0	0	0	0	3	18	78	88	28	12	0	0	0	0	**227**
6:00 PM	0	0	0	1	0	7	9	14	30	56	38	12	3	0	0	0	0	**170**
7:00 PM	0	0	0	0	0	1	0	5	17	46	33	12	5	1	0	0	0	**120**
8:00 PM	0	0	0	0	0	0	2	10	16	16	14	13	7	1	0	0	0	**79**
9:00 PM	0	0	0	0	0	0	1	2	4	13	14	9	3	0	0	0	0	**46**
10:00 PM	0	0	0	0	0	0	0	2	7	10	8	6	5	1	0	0	0	**39**
11:00 PM	0	0	0	0	0	0	0	2	4	7	11	6	2	2	0	0	0	**34**
Total	**0**	**0**	**4**	**3**	**2**	**10**	**20**	**88**	**352**	**916**	**1,049**	**489**	**188**	**45**	**5**	**1**	**1**	**3,173**
Percent	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.3%**	**0.6%**	**2.8%**	**11.1%**	**28.9%**	**33.1%**	**15.4%**	**5.9%**	**1.4%**	**0.2%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	55.7	mph	Mean (Average) Speed	55.8	mph
85th Percentile	62.0	mph	10 mph Pace	51.0 - 61.0	mph
95th Percentile	66.4	mph	Percent in Pace	62.6	%

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Tuesday, March 03, 2015
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	1	3	1	0	0	**7**
1:00 AM	0	0	0	0	0	0	1	0	0	3	3	9	1	3	0	1	0	**21**
2:00 AM	0	0	0	0	0	0	0	0	0	0	1	2	3	3	0	0	0	**9**
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	3	2	0	0	0	**8**
4:00 AM	0	0	0	0	0	0	0	0	0	2	4	8	6	4	0	0	0	**24**
5:00 AM	0	0	0	0	0	0	0	2	2	7	21	22	9	6	2	0	0	**71**
6:00 AM	0	0	0	1	0	0	0	1	3	10	38	44	41	16	3	3	0	**160**
7:00 AM	0	0	0	0	0	0	0	0	3	15	44	45	63	24	10	3	2	**209**
8:00 AM	0	0	0	1	0	0	0	2	3	12	20	42	57	31	8	3	0	**179**
9:00 AM	0	0	1	0	0	0	0	0	7	8	30	40	47	29	5	1	1	**169**
10:00 AM	0	0	0	0	0	0	0	0	5	9	24	49	38	30	13	4	1	**173**
11:00 AM	0	0	0	0	0	0	0	0	6	10	20	56	43	33	18	4	0	**190**
12:00 PM	0	1	1	0	0	0	1	0	6	6	33	51	50	30	10	2	0	**191**
1:00 PM	0	1	1	0	0	0	0	0	4	10	27	52	57	39	9	4	2	**206**
2:00 PM	0	0	0	1	0	0	0	1	0	4	30	48	74	47	15	2	0	**222**
3:00 PM	0	0	0	0	0	0	0	5	7	15	35	73	73	52	7	1	0	**268**
4:00 PM	0	0	0	1	0	0	1	0	8	11	46	78	74	54	18	3	1	**295**
5:00 PM	0	0	0	0	0	0	0	0	2	18	52	57	96	44	12	0	3	**284**
6:00 PM	0	0	0	5	7	5	3	9	11	14	25	30	25	11	1	0	0	**146**
7:00 PM	0	0	0	1	0	0	3	1	4	4	22	21	24	9	1	0	1	**91**
8:00 PM	0	0	0	0	0	0	1	0	1	6	14	19	13	5	3	0	0	**62**
9:00 PM	0	0	0	0	0	0	0	1	1	4	7	18	10	7	2	0	0	**50**
10:00 PM	0	0	0	0	0	0	0	1	1	0	11	12	10	6	1	0	0	**42**
11:00 PM	0	0	0	0	0	0	0	0	1	2	0	4	5	1	0	0	0	**13**
Total	**0**	**2**	**3**	**10**	**7**	**5**	**10**	**23**	**75**	**170**	**508**	**784**	**823**	**489**	**139**	**31**	**11**	**3,090**
Percent	**0.0%**	**0.1%**	**0.1%**	**0.3%**	**0.2%**	**0.2%**	**0.3%**	**0.7%**	**2.4%**	**5.5%**	**16.4%**	**25.4%**	**26.6%**	**15.8%**	**4.5%**	**1.0%**	**0.4%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	64.6	mph	Mean (Average) Speed	64.1	mph
85th Percentile	71.4	mph	10 mph Pace	59.1 - 69.1	mph
95th Percentile	75.6	mph	Percent in Pace	53.1	%

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Wednesday, March 04, 2015
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	1	10	4	6	5	0	0	0	0	0	**26**
1:00 AM	0	0	0	0	0	0	0	0	2	6	1	3	2	0	0	0	0	**14**
2:00 AM	0	0	0	0	0	0	1	1	2	5	4	4	2	0	0	0	0	**19**
3:00 AM	0	0	0	0	0	0	1	0	5	5	6	6	3	2	0	0	0	**28**
4:00 AM	0	0	0	0	0	0	0	2	8	23	15	13	7	3	1	0	0	**72**
5:00 AM	0	0	0	0	0	0	0	13	19	60	40	23	4	1	1	0	0	**161**
6:00 AM	0	0	2	0	0	0	0	3	27	82	86	32	7	1	0	1	0	**241**
7:00 AM	0	0	1	0	0	0	1	13	50	90	46	31	12	3	0	2	0	**249**
8:00 AM	0	1	0	0	0	1	1	6	30	67	50	18	3	1	0	0	0	**178**
9:00 AM	0	0	0	0	0	0	0	1	21	60	61	29	2	0	0	0	0	**174**
10:00 AM	0	0	1	1	0	0	0	6	18	56	61	30	9	3	1	0	0	**186**
11:00 AM	1	0	0	0	0	1	2	1	14	55	58	31	8	1	1	0	2	**175**
12:00 PM	0	0	0	1	0	0	1	8	28	61	44	11	9	3	1	0	0	**167**
1:00 PM	0	0	1	0	0	0	0	4	23	71	63	30	8	0	1	0	0	**201**
2:00 PM	0	0	1	1	0	0	0	5	23	52	65	42	10	1	0	0	0	**200**
3:00 PM	0	0	0	0	0	0	2	21	21	55	59	43	7	3	0	0	0	**211**
4:00 PM	0	0	0	0	1	0	0	2	24	72	89	39	8	1	0	0	0	**236**
5:00 PM	0	0	0	0	0	0	0	1	23	88	98	27	5	0	0	0	0	**242**
6:00 PM	0	0	0	0	0	0	1	6	17	41	46	19	3	1	1	0	0	**135**
7:00 PM	0	0	0	0	0	0	3	4	21	42	27	17	3	0	0	0	0	**117**
8:00 PM	0	0	0	0	0	0	0	4	22	31	31	7	4	2	0	0	0	**101**
9:00 PM	0	0	0	0	0	0	1	2	7	21	22	5	0	1	0	0	0	**59**
10:00 PM	0	0	0	0	0	0	1	1	2	4	12	7	1	2	0	0	0	**30**
11:00 PM	0	0	0	0	0	0	0	4	2	7	10	2	1	1	0	0	0	**27**
Total	**1**	**1**	**6**	**3**	**1**	**2**	**15**	**109**	**419**	**1,058**	**1,000**	**474**	**118**	**30**	**7**	**3**	**2**	**3,249**
Percent	**0.0%**	**0.0%**	**0.2%**	**0.1%**	**0.0%**	**0.1%**	**0.5%**	**3.4%**	**12.9%**	**32.6%**	**30.8%**	**14.6%**	**3.6%**	**0.9%**	**0.2%**	**0.1%**	**0.1%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	55.0	mph	Mean (Average) Speed	55.2	mph
85th Percentile	61.1	mph	10 mph Pace	49.4 - 59.4	mph
95th Percentile	64.9	mph	Percent in Pace	63.7	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Wednesday, March 04, 2015
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	1	2	1	6	8	2	0	0	0	**20**
1:00 AM	0	0	0	0	0	0	1	0	0	3	3	3	4	2	0	0	0	**16**
2:00 AM	0	0	0	0	0	0	0	0	0	2	4	5	3	5	0	0	0	**19**
3:00 AM	0	0	0	0	0	0	1	1	0	1	2	1	2	0	1	0	0	**9**
4:00 AM	0	0	0	0	0	0	0	0	0	4	6	9	15	5	0	1	0	**40**
5:00 AM	0	0	0	0	0	0	0	1	2	9	19	28	18	9	3	0	0	**89**
6:00 AM	0	0	0	0	0	0	0	2	2	11	37	51	43	14	3	0	0	**163**
7:00 AM	0	0	1	0	0	0	0	2	3	5	42	60	52	19	8	9	10	**211**
8:00 AM	0	0	0	1	1	0	1	2	10	12	25	53	65	25	8	2	0	**205**
9:00 AM	0	0	0	0	0	0	0	0	5	9	26	38	48	26	11	0	0	**163**
10:00 AM	0	0	2	0	0	0	0	1	1	9	24	43	53	46	19	0	0	**198**
11:00 AM	0	0	0	1	0	0	0	1	1	2	27	65	49	38	10	4	3	**201**
12:00 PM	0	0	0	0	0	0	0	1	5	11	38	64	46	24	8	1	0	**198**
1:00 PM	0	0	0	1	0	0	0	0	1	5	25	66	53	48	14	1	0	**214**
2:00 PM	0	0	0	0	0	0	0	1	1	16	29	66	60	39	7	0	0	**219**
3:00 PM	0	0	0	0	0	0	0	1	7	8	15	55	73	61	17	2	1	**240**
4:00 PM	0	0	0	0	0	0	0	1	8	5	36	73	86	59	21	6	2	**297**
5:00 PM	0	0	1	0	0	0	0	0	2	13	52	90	81	43	12	1	0	**295**
6:00 PM	0	0	0	0	0	0	0	3	4	10	36	61	43	26	2	0	0	**185**
7:00 PM	0	0	0	0	0	0	0	2	6	13	25	29	33	7	0	1	0	**116**
8:00 PM	0	0	0	0	0	0	0	1	5	6	12	21	8	11	2	1	0	**67**
9:00 PM	0	0	0	0	0	0	1	0	2	2	11	9	7	7	4	0	0	**43**
10:00 PM	0	0	0	0	0	0	0	2	4	6	8	9	9	6	0	0	0	**44**
11:00 PM	0	0	0	0	0	0	0	1	1	2	3	4	5	2	0	0	0	**18**
Total	**0**	**0**	**4**	**3**	**1**	**0**	**4**	**23**	**71**	**166**	**506**	**909**	**864**	**524**	**150**	**29**	**16**	**3,270**
Percent	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.1%**	**0.7%**	**2.2%**	**5.1%**	**15.5%**	**27.8%**	**26.4%**	**16.0%**	**4.6%**	**0.9%**	**0.5%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	64.6	mph	Mean (Average) Speed	64.5	mph
85th Percentile	71.6	mph	10 mph Pace	59.9 - 69.9	mph
95th Percentile	75.4	mph	Percent in Pace	54.6	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Thursday, March 05, 2015
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	1	1	4	4	1	1	0	0	0	0	**12**
1:00 AM	0	0	0	0	0	0	0	0	5	3	4	3	2	1	0	0	0	**18**
2:00 AM	0	0	0	0	0	0	0	2	3	8	3	3	0	0	0	0	0	**19**
3:00 AM	0	0	0	0	0	0	0	2	7	7	8	5	1	1	0	0	0	**31**
4:00 AM	0	0	0	0	0	0	2	4	4	13	26	20	7	2	1	0	0	**79**
5:00 AM	0	0	0	0	0	0	0	8	31	66	36	14	4	0	0	0	0	**159**
6:00 AM	0	0	0	1	0	0	0	10	44	103	82	25	2	1	0	1	0	**269**
7:00 AM	0	0	1	0	0	0	4	7	32	95	86	13	3	0	0	0	0	**241**
8:00 AM	0	0	0	0	0	0	1	5	39	68	65	20	8	0	0	0	0	**206**
9:00 AM	0	0	1	1	0	0	0	2	26	64	45	23	6	1	0	0	0	**169**
10:00 AM	0	0	0	1	0	0	0	6	19	56	41	26	11	4	1	0	0	**165**
11:00 AM	0	0	0	0	0	0	1	8	15	56	51	38	12	2	1	0	0	**184**
12:00 PM	0	0	1	1	0	0	0	2	18	55	70	20	16	1	1	1	2	**188**
1:00 PM	0	0	0	0	0	0	0	3	15	53	69	36	6	4	1	0	0	**187**
2:00 PM	0	0	1	0	0	0	5	11	28	63	74	24	7	2	0	0	0	**215**
3:00 PM	0	0	1	1	0	0	2	8	25	69	65	35	2	0	2	0	0	**210**
4:00 PM	0	0	0	0	0	0	1	1	14	50	85	42	12	6	0	0	0	**211**
5:00 PM	0	0	0	0	0	0	2	1	13	67	79	41	13	4	1	0	0	**221**
6:00 PM	0	0	0	0	0	1	3	12	37	60	46	10	2	1	0	0	0	**172**
7:00 PM	0	0	0	0	0	0	2	2	17	32	30	13	3	0	0	0	0	**99**
8:00 PM	0	0	0	0	0	0	0	7	18	35	26	9	2	2	0	0	0	**99**
9:00 PM	0	0	0	0	0	0	2	1	17	23	15	1	1	1	0	0	0	**61**
10:00 PM	0	0	0	0	0	0	1	0	3	16	11	0	2	0	0	0	0	**33**
11:00 PM	0	0	0	0	0	1	1	1	1	4	6	1	4	0	0	0	0	**19**
Total	**0**	**0**	**5**	**5**	**0**	**2**	**27**	**104**	**432**	**1,070**	**1,027**	**423**	**127**	**33**	**8**	**2**	**2**	**3,267**
Percent	**0.0%**	**0.0%**	**0.2%**	**0.2%**	**0.0%**	**0.1%**	**0.8%**	**3.2%**	**13.2%**	**32.8%**	**31.4%**	**12.9%**	**3.9%**	**1.0%**	**0.2%**	**0.1%**	**0.1%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	54.8	mph	Mean (Average) Speed	55.0	mph
85th Percentile	60.8	mph	10 mph Pace	49.7 - 59.7	mph
95th Percentile	65.1	mph	Percent in Pace	64.6	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Thursday, March 05, 2015
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	0	1	1	1	4	4	3	0	0	**14**
1:00 AM	0	0	0	0	0	0	0	1	0	0	1	4	2	2	1	0	0	**11**
2:00 AM	0	0	0	0	0	0	0	0	0	1	1	3	4	1	0	0	0	**10**
3:00 AM	0	0	0	0	0	0	2	0	0	3	1	6	1	0	0	0	0	**13**
4:00 AM	0	0	0	0	0	0	0	0	0	2	7	6	7	6	2	0	0	**30**
5:00 AM	0	0	0	0	0	0	0	0	4	10	27	26	12	6	0	0	0	**85**
6:00 AM	0	0	0	0	0	0	1	0	2	11	31	66	38	7	3	1	0	**160**
7:00 AM	0	0	0	1	0	0	1	2	9	11	38	75	70	31	3	0	0	**241**
8:00 AM	0	0	0	0	0	0	0	1	11	7	26	47	35	27	9	1	0	**164**
9:00 AM	0	0	0	1	2	0	0	0	3	5	28	43	44	33	10	5	0	**174**
10:00 AM	0	0	0	0	0	0	0	0	2	11	26	47	49	28	18	8	1	**190**
11:00 AM	0	0	0	0	0	0	1	1	2	2	23	57	67	39	17	6	5	**220**
12:00 PM	0	0	0	0	0	0	0	0	1	7	25	46	56	38	20	4	7	**204**
1:00 PM	0	0	0	0	0	0	0	1	4	4	35	58	60	30	18	4	2	**216**
2:00 PM	0	0	1	0	1	0	0	2	3	10	42	58	61	56	10	5	2	**251**
3:00 PM	0	0	1	0	0	1	0	0	2	12	38	58	67	66	15	1	0	**261**
4:00 PM	0	0	0	0	0	0	0	1	3	15	44	63	106	68	35	3	0	**338**
5:00 PM	0	0	0	0	0	2	0	0	2	4	15	48	83	70	32	15	3	**274**
6:00 PM	0	0	0	0	0	3	6	1	5	4	33	54	47	33	20	3	0	**209**
7:00 PM	0	0	1	0	0	0	0	0	2	1	15	29	32	20	11	3	0	**114**
8:00 PM	0	0	0	0	0	0	0	1	2	4	10	21	20	10	2	0	0	**70**
9:00 PM	0	0	0	0	0	0	0	1	2	4	11	13	6	5	1	1	0	**44**
10:00 PM	0	0	0	0	0	0	0	2	1	3	4	11	7	2	0	0	0	**30**
11:00 PM	0	0	0	0	0	0	0	0	1	1	5	8	4	4	3	0	0	**26**
Total	**0**	**0**	**3**	**2**	**3**	**6**	**11**	**14**	**61**	**133**	**487**	**848**	**882**	**586**	**233**	**60**	**20**	**3,349**
Percent	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.2%**	**0.3%**	**0.4%**	**1.8%**	**4.0%**	**14.5%**	**25.3%**	**26.3%**	**17.5%**	**7.0%**	**1.8%**	**0.6%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	65.5	mph	Mean (Average) Speed	65.4	mph
85th Percentile	72.7	mph	10 mph Pace	61.3 - 71.3	mph
95th Percentile	77.2	mph	Percent in Pace	52.8	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	1	1	4	4	6	3	1	0	0	0	0	**20**
1:00 AM	0	0	0	0	0	0	0	0	3	4	3	2	2	0	0	0	0	**14**
2:00 AM	0	0	0	0	0	0	0	1	2	4	3	2	3	0	0	0	0	**15**
3:00 AM	0	0	0	0	0	0	0	1	5	6	9	6	3	1	0	0	0	**31**
4:00 AM	0	0	0	0	0	0	1	3	7	21	22	18	6	2	1	0	0	**81**
5:00 AM	0	0	0	0	0	0	0	9	26	60	45	19	4	1	0	0	0	**164**
6:00 AM	0	0	1	0	0	0	0	7	33	92	89	31	7	1	0	1	0	**262**
7:00 AM	0	0	1	0	0	0	2	9	36	85	73	21	6	2	0	1	0	**236**
8:00 AM	0	0	0	0	0	0	1	5	33	63	55	21	6	0	0	0	0	**184**
9:00 AM	0	0	0	0	0	0	0	2	19	52	58	28	6	2	0	0	0	**167**
10:00 AM	0	0	0	1	0	0	0	5	16	53	49	31	12	3	1	0	0	**171**
11:00 AM	0	0	0	0	0	0	1	4	12	52	53	32	12	3	1	0	1	**171**
12:00 PM	0	0	0	1	0	0	0	6	23	57	56	21	10	1	1	0	1	**177**
1:00 PM	0	0	1	0	0	0	0	3	18	57	62	33	10	3	1	0	0	**188**
2:00 PM	0	0	1	0	0	0	2	5	22	54	65	33	14	3	0	0	0	**199**
3:00 PM	0	0	0	0	0	0	1	11	21	63	73	39	5	1	1	0	0	**215**
4:00 PM	0	0	0	0	0	0	0	2	20	55	82	41	12	5	0	0	0	**217**
5:00 PM	0	0	0	0	0	0	1	2	18	78	88	32	10	1	0	0	0	**230**
6:00 PM	0	0	0	0	0	3	4	11	28	52	43	14	3	1	0	0	0	**159**
7:00 PM	0	0	0	0	0	0	2	4	18	40	30	14	4	0	0	0	0	**112**
8:00 PM	0	0	0	0	0	0	1	7	19	27	24	10	4	2	0	0	0	**94**
9:00 PM	0	0	0	0	0	0	1	2	9	19	17	5	1	1	0	0	0	**55**
10:00 PM	0	0	0	0	0	0	1	1	4	10	10	4	3	1	0	0	0	**34**
11:00 PM	0	0	0	0	0	0	0	2	2	6	9	3	2	1	0	0	0	**25**
Total	**0**	**0**	**4**	**2**	**0**	**3**	**19**	**103**	**398**	**1,014**	**1,024**	**463**	**146**	**35**	**6**	**2**	**2**	**3,221**
Percent	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.0%**	**0.1%**	**0.6%**	**3.2%**	**12.4%**	**31.5%**	**31.8%**	**14.4%**	**4.5%**	**1.1%**	**0.2%**	**0.1%**	**0.1%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	55.3	mph	Mean (Average) Speed	55.3	mph
85th Percentile	61.3	mph	10 mph Pace	49.9 - 59.9	mph
95th Percentile	65.5	mph	Percent in Pace	63.5	%

Mark Skaggs:425-250-0777
mark.skaggs@idaxdata.com

Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 to 3/5/2015
Site Code: 06

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	0	1	1	3	4	3	1	0	0	**13**
1:00 AM	0	0	0	0	0	0	1	0	0	2	2	5	2	2	0	0	0	**14**
2:00 AM	0	0	0	0	0	0	0	0	0	1	2	3	3	3	0	0	0	**12**
3:00 AM	0	0	0	0	0	0	1	0	0	1	1	3	2	1	0	0	0	**9**
4:00 AM	0	0	0	0	0	0	0	0	0	3	6	8	9	5	1	0	0	**32**
5:00 AM	0	0	0	0	0	0	0	1	3	9	22	25	13	7	2	0	0	**82**
6:00 AM	0	0	0	0	0	0	0	1	2	11	35	54	41	12	3	1	0	**160**
7:00 AM	0	0	0	0	0	0	0	1	5	10	41	60	62	25	7	4	4	**219**
8:00 AM	0	0	0	1	0	0	0	2	8	10	24	47	52	28	8	2	0	**182**
9:00 AM	0	0	0	0	1	0	0	0	5	7	28	40	46	29	9	2	0	**167**
10:00 AM	0	0	1	0	0	0	0	0	3	10	25	46	47	35	17	4	1	**189**
11:00 AM	0	0	0	0	0	0	0	1	3	5	23	59	53	37	15	5	3	**204**
12:00 PM	0	0	0	0	0	0	0	0	4	8	32	54	51	31	13	2	2	**197**
1:00 PM	0	0	0	0	0	0	0	0	3	6	29	59	57	39	14	3	1	**211**
2:00 PM	0	0	0	0	0	0	0	1	1	10	34	57	65	47	11	2	1	**229**
3:00 PM	0	0	0	0	0	0	0	2	5	12	29	62	71	60	13	1	0	**255**
4:00 PM	0	0	0	0	0	0	0	1	6	10	42	71	89	60	25	4	1	**309**
5:00 PM	0	0	0	0	0	1	0	0	2	12	40	65	87	52	19	5	2	**285**
6:00 PM	0	0	0	2	2	3	3	4	7	9	31	48	38	23	8	1	0	**179**
7:00 PM	0	0	0	0	0	0	1	1	4	6	21	26	30	12	4	1	0	**106**
8:00 PM	0	0	0	0	0	0	0	1	3	5	12	20	14	9	2	0	0	**66**
9:00 PM	0	0	0	0	0	0	0	1	2	3	10	13	8	6	2	0	0	**45**
10:00 PM	0	0	0	0	0	0	0	2	2	3	8	11	9	5	0	0	0	**40**
11:00 PM	0	0	0	0	0	0	0	0	1	2	3	5	5	2	1	0	0	**19**
Total	**0**	**0**	**1**	**3**	**3**	**4**	**6**	**19**	**69**	**156**	**501**	**844**	**858**	**533**	**175**	**37**	**15**	**3,224**
Percent	**0.0%**	**0.0%**	**0.0%**	**0.1%**	**0.1%**	**0.1%**	**0.2%**	**0.6%**	**2.1%**	**4.8%**	**15.5%**	**26.2%**	**26.6%**	**16.5%**	**5.4%**	**1.1%**	**0.5%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	64.9	mph	Mean (Average) Speed	64.7	mph
85th Percentile	71.8	mph	10 mph Pace	60.6 - 70.6	mph
95th Percentile	76.3	mph	Percent in Pace	53.2	%

Mark Skaggs:425-250-0777
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Location: SR 200 SOUTH OF FAIRVIEW
Date Range: 3/3/2015 - 3/9/2015
Site Code: 06

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	3/3/2015			3/4/2015			3/5/2015			3/6/2015			3/7/2015			3/8/2015			3/9/2015					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	18	7	25	26	20	46	12	14	26	-	-	-	-	-	-	-	-	-	-	-	-	19	14	32
1:00 AM	13	21	34	14	16	30	18	11	29	-	-	-	-	-	-	-	-	-	-	-	-	15	16	31
2:00 AM	12	9	21	19	19	38	19	10	29	-	-	-	-	-	-	-	-	-	-	-	-	17	13	29
3:00 AM	33	8	41	28	9	37	31	13	44	-	-	-	-	-	-	-	-	-	-	-	-	31	10	41
4:00 AM	91	24	115	72	40	112	79	30	109	-	-	-	-	-	-	-	-	-	-	-	-	81	31	112
5:00 AM	176	71	247	161	89	250	159	85	244	-	-	-	-	-	-	-	-	-	-	-	-	165	82	247
6:00 AM	277	160	437	241	163	404	269	160	429	-	-	-	-	-	-	-	-	-	-	-	-	262	161	423
7:00 AM	217	209	426	249	211	460	241	241	482	-	-	-	-	-	-	-	-	-	-	-	-	236	220	456
8:00 AM	171	179	350	178	205	383	206	164	370	-	-	-	-	-	-	-	-	-	-	-	-	185	183	368
9:00 AM	164	169	333	174	163	337	169	174	343	-	-	-	-	-	-	-	-	-	-	-	-	169	169	338
10:00 AM	165	173	338	186	198	384	165	190	355	-	-	-	-	-	-	-	-	-	-	-	-	172	187	359
11:00 AM	151	190	341	175	201	376	184	220	404	-	-	-	-	-	-	-	-	-	-	-	-	170	204	374
12:00 PM	176	191	367	167	198	365	188	204	392	-	-	-	-	-	-	-	-	-	-	-	-	177	198	375
1:00 PM	177	206	383	201	214	415	187	216	403	-	-	-	-	-	-	-	-	-	-	-	-	188	212	400
2:00 PM	183	222	405	200	219	419	215	251	466	-	-	-	-	-	-	-	-	-	-	-	-	199	231	430
3:00 PM	230	268	498	211	240	451	210	261	471	-	-	-	-	-	-	-	-	-	-	-	-	217	256	473
4:00 PM	204	295	499	236	297	533	211	338	549	-	-	-	-	-	-	-	-	-	-	-	-	217	310	527
5:00 PM	227	284	511	242	295	537	221	274	495	-	-	-	-	-	-	-	-	-	-	-	-	230	284	514
6:00 PM	170	146	316	135	185	320	172	209	381	-	-	-	-	-	-	-	-	-	-	-	-	159	180	339
7:00 PM	120	91	211	117	116	233	99	114	213	-	-	-	-	-	-	-	-	-	-	-	-	112	107	219
8:00 PM	79	62	141	101	67	168	99	70	169	-	-	-	-	-	-	-	-	-	-	-	-	93	66	159
9:00 PM	46	50	96	59	43	102	61	44	105	-	-	-	-	-	-	-	-	-	-	-	-	55	46	101
10:00 PM	39	42	81	30	44	74	33	30	63	-	-	-	-	-	-	-	-	-	-	-	-	34	39	73
11:00 PM	34	13	47	27	18	45	19	26	45	-	-	-	-	-	-	-	-	-	-	-	-	27	19	46
Total	**3,173**	**3,090**	**6,263**	**3,249**	**3,270**	**6,519**	**3,267**	**3,349**	**6,616**	-	-	-	-	-	-	-	-	-	-	-	-	**3,230**	**3,236**	**6,466**
Percent	**51%**	**49%**	-	**50%**	**50%**	-	**49%**	**51%**	-	-	-	-	-	-	-	-	-	-	-	-	-	**50%**	**50%**	-

1. Mid-week average includes data between Tuesday and Thursday.

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Attachment 9
Travel Time Worksheets

Arterial Level of Service: NB MT 200

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
CR 133	19	2.0	7.0	0.1	52
Taper	20	2.7	35.0	0.6	65
CR 134	7	0.4	16.2	0.2	54
Dale Ave	31	0.1	5.2	0.1	41
Ashland Ave	9	0.1	8.1	0.1	44
Private Dr	18	0.3	6.0	0.1	41
Grand Ave	28	0.2	10.5	0.1	34
Dawson Ave	8	0.1	3.3	0.0	38
Pleasant Ave	32	0.2	7.5	0.1	33
Western Ave	35	0.1	7.5	0.1	34
Central Ave	39	0.1	7.0	0.1	34
7th St	40	0.4	19.9	0.2	34
6th St	3	0.9	8.3	0.1	31
5th St	43	0.3	7.2	0.1	33
4th St	46	0.1	7.2	0.1	34
3rd St	49	0.1	7.6	0.1	34
2nd St	52	0.2	7.2	0.1	34
1st St	2	6.7	13.7	0.1	18
1st St N	56	3.0	10.3	0.1	25
2nd St N	77	0.1	7.2	0.1	35
Taper	13	0.0	2.2	0.0	31
Private Dr	57	0.3	12.4	0.1	42
Interstate Ave	59	2.3	17.7	0.2	39
Railroad	83	37.0	45.9	0.1	8
	82	1.4	8.8	0.1	37
2nd St	1	5.4	19.8	0.2	34
Total		64.5	308.9	3.0	35

Arterial Level of Service: SB MT 200

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
ND 58	1	4.9	20.6	0.2	30
	82	26.6	55.3	0.2	12
Railroad	83	28.2	41.6	0.1	9
Interstate Ave	59	1.0	7.6	0.1	46
Private Dr	57	1.0	16.5	0.2	42
Taper	13	1.3	13.2	0.1	40
2nd St N	77	0.1	1.8	0.0	38
1st St N	56	0.5	7.6	0.1	33
MT 201	2	7.8	15.2	0.1	17
2nd St	52	3.3	10.3	0.1	24
3rd St	49	0.1	7.1	0.1	34
4th St	46	0.1	7.5	0.1	34
5th St	43	0.1	7.2	0.1	34
6th St	3	0.9	7.8	0.1	31
7th St	40	0.5	7.8	0.1	33
Central Ave	39	0.4	19.8	0.2	34
Western Ave	35	0.2	7.0	0.1	33
Pleasant Ave	32	0.2	7.5	0.1	34
Dawson Ave	8	0.2	7.4	0.1	34
Grand Ave	28	0.1	3.5	0.0	36
Private Dr	18	0.3	10.4	0.1	34
Ashland Ave	9	0.3	6.9	0.1	36
Dale Ave	31	0.3	8.3	0.1	43
CR 134	7	0.2	5.4	0.1	40
Taper	20	0.9	17.5	0.2	50
CR 133	19	2.7	36.4	0.6	62
Total		82.0	357.5	3.1	32

Arterial Level of Service: NB MT 200

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
CR 133	19	2.1	7.2	0.1	51
Taper	20	3.0	35.7	0.6	63
CR 134	7	0.4	16.2	0.2	54
Dale Ave	31	0.0	5.2	0.1	42
Ashland Ave	9	0.2	8.1	0.1	44
Private Dr	18	0.3	6.0	0.1	42
Grand Ave	28	0.1	10.3	0.1	35
Dawson Ave	8	0.0	3.3	0.0	39
Pleasant Ave	32	0.1	7.4	0.1	34
Western Ave	35	0.1	7.5	0.1	34
Central Ave	39	0.1	7.0	0.1	34
7th St	40	0.4	19.9	0.2	34
6th St	3	0.9	8.4	0.1	31
5th St	43	0.5	7.5	0.1	32
4th St	46	0.2	7.3	0.1	34
3rd St	49	0.2	7.7	0.1	33
2nd St	52	0.3	7.3	0.1	33
1st St	2	7.1	14.1	0.1	18
1st St N	56	3.2	10.4	0.1	24
2nd St N	77	0.2	7.3	0.1	34
Taper	13	0.1	2.3	0.0	30
Private Dr	57	0.7	12.8	0.1	41
Interstate Ave	59	18.0	33.2	0.2	21
Railroad	83	33.3	45.7	0.1	9
	82	2.2	9.5	0.1	34
2nd St	1	13.0	29.0	0.2	24
Total		86.7	336.6	3.0	33

Arterial Level of Service: SB MT 200

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
ND 58	1	11.8	27.5	0.2	23
	82	29.3	57.9	0.2	12
Railroad	83	20.1	35.6	0.1	12
Interstate Ave	59	1.8	8.6	0.1	41
Private Dr	57	1.3	16.9	0.2	41
Taper	13	1.5	13.4	0.1	39
2nd St N	77	0.1	1.9	0.0	37
1st St N	56	0.7	7.8	0.1	32
MT 201	2	8.2	15.5	0.1	16
2nd St	52	3.3	10.3	0.1	24
3rd St	49	0.1	7.1	0.1	34
4th St	46	0.1	7.5	0.1	34
5th St	43	0.2	7.2	0.1	34
6th St	3	0.7	7.7	0.1	31
7th St	40	0.5	7.9	0.1	33
Central Ave	39	0.7	20.1	0.2	34
Western Ave	35	0.3	7.1	0.1	33
Pleasant Ave	32	0.4	7.7	0.1	33
Dawson Ave	8	0.4	7.5	0.1	33
Grand Ave	28	0.2	3.6	0.0	36
Private Dr	18	0.4	10.6	0.1	34
Ashland Ave	9	0.4	7.0	0.1	36
Dale Ave	31	0.4	8.5	0.1	42
CR 134	7	0.3	5.4	0.1	40
Taper	20	1.0	17.6	0.2	50
CR 133	19	3.7	37.4	0.6	60
Total		87.9	365.3	3.1	31

Arterial Level of Service: NB MT 200

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
CR 133	19	2.2	7.4	0.1	51
Taper	20	3.3	35.3	0.6	64
CR 134	7	0.6	16.1	0.2	54
Dale Ave	31	0.1	5.2	0.1	42
Ashland Ave	9	0.1	8.0	0.1	45
Private Dr	18	0.4	6.0	0.1	42
Grand Ave	28	0.2	10.3	0.1	35
Dawson Ave	8	0.1	3.3	0.0	39
Pleasant Ave	32	0.2	7.5	0.1	34
Western Ave	35	0.3	7.6	0.1	33
Central Ave	39	0.2	7.0	0.1	33
7th St	40	0.7	19.9	0.2	34
6th St	3	1.1	8.5	0.1	30
5th St	43	0.5	7.3	0.1	33
4th St	46	0.3	7.3	0.1	34
3rd St	49	0.3	7.8	0.1	33
2nd St	52	0.3	7.3	0.1	33
1st St	2	7.3	14.3	0.1	17
1st St N	56	3.2	10.5	0.1	24
2nd St N	77	0.1	7.3	0.1	35
Taper	13	0.1	2.3	0.0	30
Private Dr	57	0.7	12.9	0.1	40
Interstate Ave	59	24.9	40.2	0.2	17
Railroad	83	29.1	37.0	0.1	9
	82	1.7	9.1	0.1	36
2nd St	1	14.8	32.6	0.2	22
Total		92.9	337.8	3.0	32

Arterial Level of Service: SB MT 200

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
ND 58	1	26.6	42.3	0.2	15
	82	30.9	58.9	0.2	12
Railroad	83	20.0	29.8	0.1	12
Interstate Ave	59	3.6	11.4	0.1	31
Private Dr	57	2.3	17.7	0.2	39
Taper	13	2.1	14.0	0.1	37
2nd St N	77	0.2	2.0	0.0	35
1st St N	56	1.0	8.1	0.1	31
MT 201	2	9.6	16.9	0.1	15
2nd St	52	3.4	10.4	0.1	24
3rd St	49	0.2	7.1	0.1	34
4th St	46	0.2	7.7	0.1	34
5th St	43	0.3	7.3	0.1	33
6th St	3	1.3	8.2	0.1	29
7th St	40	0.6	8.1	0.1	32
Central Ave	39	1.0	20.4	0.2	33
Western Ave	35	0.5	7.3	0.1	32
Pleasant Ave	32	0.5	7.8	0.1	32
Dawson Ave	8	0.4	7.6	0.1	33
Grand Ave	28	0.2	3.6	0.0	35
Private Dr	18	0.6	10.7	0.1	33
Ashland Ave	9	0.6	7.2	0.1	35
Dale Ave	31	0.6	8.6	0.1	42
CR 134	7	0.3	5.5	0.1	39
Taper	20	1.6	18.2	0.2	48
CR 133	19	5.1	38.5	0.6	59
Total		113.8	385.2	3.1	29

Arterial Level of Service: NB MT 200

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
CR 133	19	2.1	7.1	0.1	51
Taper	20	3.2	35.3	0.6	64
CR 134	7	0.4	15.9	0.2	55
Dale Ave	31	0.1	5.2	0.1	42
Ashland Ave	9	0.1	7.9	0.1	45
Private Dr	18	0.2	5.9	0.1	42
Grand Ave	28	0.1	10.2	0.1	35
Dawson Ave	8	0.0	3.3	0.0	39
Pleasant Ave	32	0.1	7.3	0.1	34
Western Ave	35	0.1	7.4	0.1	34
Central Ave	39	0.1	6.9	0.1	34
7th St	40	0.3	19.3	0.2	35
6th St	3	0.8	8.1	0.1	32
5th St	43	0.3	7.2	0.1	33
4th St	46	0.1	7.1	0.1	34
3rd St	49	0.1	7.5	0.1	34
2nd St	52	0.1	7.1	0.1	34
1st St	2	6.7	13.7	0.1	18
1st St N	56	3.2	10.5	0.1	24
2nd St N	77	0.1	7.2	0.1	35
Taper	13	0.0	2.3	0.0	31
Private Dr	57	0.4	12.5	0.1	42
Interstate Ave	59	12.1	27.4	0.2	25
Railroad	83	42.2	50.1	0.1	7
	82	1.3	8.9	0.1	38
2nd St	1	7.2	23.5	0.2	28
Total		81.6	324.7	3.0	33

Arterial Level of Service: SB MT 200

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
ND 58	1	4.8	20.6	0.2	30
	82	23.4	52.0	0.2	13
Railroad	83	31.5	39.4	0.1	8
Interstate Ave	59	1.7	9.4	0.1	37
Private Dr	57	1.4	16.8	0.2	41
Taper	13	2.1	14.0	0.1	37
2nd St N	77	0.2	2.0	0.0	36
1st St N	56	0.8	7.8	0.1	32
MT 201	2	8.0	15.2	0.1	17
2nd St	52	3.4	10.3	0.1	24
3rd St	49	0.2	7.1	0.1	34
4th St	46	0.2	7.6	0.1	34
5th St	43	0.2	7.1	0.1	34
6th St	3	1.5	8.3	0.1	29
7th St	40	0.6	8.0	0.1	32
Central Ave	39	0.5	19.6	0.2	35
Western Ave	35	0.3	7.0	0.1	33
Pleasant Ave	32	0.3	7.6	0.1	34
Dawson Ave	8	0.2	7.3	0.1	34
Grand Ave	28	0.1	3.5	0.0	37
Private Dr	18	0.3	10.3	0.1	35
Ashland Ave	9	0.4	7.0	0.1	36
Dale Ave	31	0.3	8.3	0.1	43
CR 134	7	0.2	5.3	0.1	41
Taper	20	0.8	17.3	0.2	51
CR 133	19	2.5	36.3	0.6	62
Total		85.9	355.3	3.1	31