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**Project Number NH-385-3(118)
C.N. 51432**

**Highway US 385: Junction L62A/US 385 to Alliance
Heartland Expressway
Box Butte and Morrill Counties, Nebraska**

DRAFT ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to 42 USC 4332(2)(c) and 23 CFR 771 & 774

**to the U.S. Department of Transportation, Federal Highway Administration
by Nebraska Department of Roads**

Project Sponsor signatures indicate verification that the content of this document and the scope of the project are accurate. FHWA signature gives approval to distribute this information for public and agency review and comment. Such approval does not commit to approve any future grant requests to fund the preferred alternative.



For the Nebraska Division Administrator
Federal Highway Administration



For Nebraska Department of Roads
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8/28/14

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ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ACE	Public Alliance for Community Energy
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
APE	Area of Potential Effect
ASTM	American Society for Testing and Materials
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BMP	Best Management Practices
BNSF	BNSF Railway Company (formerly Burlington Northern Santa Fe)
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CN	Control Number
CR	County Road
CSW	Construction Storm Water
CWA	Clean Water Act
CY	cubic yard
dBA	A-weighted Decibels
DHHS	U.S. Department of Health and Human Services
DNR	Nebraska Department of Natural Resources
DOT	United States Department of Transportation
DS	design speed
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHU	Felsburg Holt & Ullevig
FIRM	Flood Insurance Rate Map
FHWA	Federal Highway Administration

FO	fiber optic
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FR	Federal Register
FWS	United States Fish and Wildlife Service
FY	fiscal year
GDP	gross domestic product
GIS	geographic information system
GPITC	Great Plains International Trade Corridor
HAP-NSHS	Highway Archaeology Program of the Nebraska State Historical Society
HMTR	Hazardous Materials Technical Report
HMSI	Hazardous Materials Site Investigation
HSPP	Highway Salvage Paleontology Program
HVAC	Heating, Ventilation, and Air Conditioning
I	Interstate Highway
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation System
L62A	Nebraska Highway Link 62A
LB	Legislative Bill
LEP	Limited English Proficiency
LUST	Leaking Underground Storage Tank
LWCFA	Land and Water Conservation Fund Act
MAP-21	Moving Ahead for Progress in the 21 st Century
MBTA	Migratory Bird Treaty Act
mg/kg	milligrams per kilogram
MM	Mile Marker
mph	miles per hour
MSAT	Mobile Source Air Toxins
MS4	Municipal Separate Storm Sewer System
N-2	Nebraska Highway 2
NAC	Nebraska Administrative Code
NCPD	National Corridor Planning and Development
NDEQ	Nebraska Department of Environmental Quality
NDNR	Nebraska Department of Natural Resources
NDOR	Nebraska Department of Roads

NE	Nebraska
NEPA	National Environmental Policy Act of 1969
NESCA	Nebraska Nongame and Endangered Species Conservation Act
NGPC	Nebraska Game and Parks Commission
NHS	National Highway System
No.	number
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHP	overhead power line
OHWM	ordinary high water mark
O&M	Operations and Maintenance
P2P	Ports to Plains Alliance
PCB	polychlorinated biphenyl
PEMA	palustrine emergent temporarily flooded wetland
PEMC	palustrine emergent seasonally flooded wetland
PEMCx	palustrine emergent seasonally flooded excavated wetland
PL	Public Law
PPE	Personal Protection Equipment
PREC	Potential Recognized Environmental Condition
PRRIP	Platte River Recovery Implementation Program
R4SBCx	riverine intermittent stream bed seasonally flooded excavated
RBCA	Risk Based Corrective Action
RBSL	Risk Based Screening Levels
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
ROW	right-of-way
RV	recreational vehicle
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SARA	Superfund Amendments and Reauthorization Act
SH	State Highway
SHPO	State Historic Preservation Officer
STIP	State Transportation Improvement Plan

STRAHNET	Strategic Highway Network
SVE	Soil Vapor Extraction
SWPPP	Storm Water Pollution Prevention Plan
TEA-21	Transportation Equity Act for the 21 st Century
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TSCA	Toxic Substances Control Act
TWLTL	Two-way Left Turn Lane
US	United States
US 385	United States Highway 385
USC	United States Code
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WPA	Wellhead Protection Area

EXECUTIVE SUMMARY

This project involves proposed improvements to a segment of the National Highway System (NHS) corridor beginning at the junction of United States Highway 385 (US 385) and State Link 62A (L62A), and extending north approximately 26 miles to the City of Alliance, Nebraska. The existing roadway is a two-lane rural highway located within the Nebraska Panhandle, an elongated region extending west from the main portion of the state and made up of 11 rural and sparsely populated counties. This project is part of the Heartland Expressway, which is one of the routes that Congress designated as a High Priority Corridor, a roadway considered to be important to the nation's economy, defense, and mobility.

Purpose and Need. The purpose of the project is:

- To **provide an improved north-south highway on a NHS High Priority Corridor that increases the efficiency and safety of commerce and travel** as included in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).
- To **fulfill legislative intent** of the ISTEA; the Transportation Equity Act for the 21st Century (TEA-21); the **Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)**, which have provided federally “earmarked” funds for the development of the Heartland Expressway; and the Moving Ahead for Progress in the 21st Century Act (MAP-21), which continued authorization of funding as deemed necessary in SAFETEA-LU.
- To **fulfill legislative intent of the Build Nebraska Act**; the State has identified this project as one of the high priority projects to receive funding under this act.
- To **address roadway and operational deficiencies** along this segment of the Heartland Expressway corridor.

The need for the project, and the reason it is considered the next logical segment of the Heartland Expressway, is that (1) it has the highest traffic volumes, including high truck traffic; and (2) it traverses numerous short dunes requiring frequent climbs and turns resulting in several areas that do not meet AASHTO standards for speed limit and Nebraska Department of Roads (NDOR) standards for grade. The combination of traffic volumes and frequent climbs and turns results in decreased operational efficiency of this facility.

In addition to the above purposes, an additional goal for the project is:

- To **improve the highway infrastructure in order to facilitate economic development** by enhancing the efficiency and mobility of Nebraska Panhandle regional commerce for residents, businesses, visitors, and interstate travel.

Regional Connectivity. While the proposed improvements have benefits as a stand-alone project, the approximately 26-mile long route would have greater benefits once the entire Heartland Expressway is completed. Congress identified this High Priority Corridor in 1991 to extend from Denver through Scottsbluff to Rapid City. Since 1991, about 50 percent of the Heartland Expressway has undergone improvements. Currently, it is a four-lane divided highway from the City of Minatare west past Scottsbluff and south to Interstate 80 (I-80), and from the Nebraska–South Dakota state line north to Rapid City. This leaves a two-lane gap between the four-lane sections, extending from the Nebraska–South Dakota line south and west

to Minatare. Eventually, this gap is intended to be closed by constructing a four-lane expressway, which would provide a transportation network that connects not only the cities within the Heartland Expressway corridor, but others throughout the Great Plains. This segment would provide an expressway link for the City of Alliance to I-80, the largest freight transportation corridor in the United States, and to I-90 at Rapid City, South Dakota. According to local officials and business leaders, this connection is a vital link for all sectors of the regional economy of the Panhandle.

A new economic study conducted as part of the Heartland Expressway Corridor study shows that benefits of improvements to US 385 in Nebraska consisting of expansion to a four-lane facility would result in a benefit/cost ratio of 1.7; improving this part of the Heartland Expressway alone would result in a benefit/cost ratio or at least 1.2—indicating a positive impact on the regional economy. These types of improvements typically provide benefits that include travel time savings (which may occur as motorists experience reduced travel times), increased safety (which may occur as the number of accidents that take place on the corridor are reduced); and operating cost savings (that may occur as the distances driven by motorists are reduced), as well as economic development feasibility.

Interstate Connectivity. The Heartland Expressway is a federally designated trade corridor within the four states of Colorado, Nebraska, Wyoming, and South Dakota. It traverses some of the most agriculture- and energy-productive rural regions in the United States, and is a major route to popular tourist destinations such as the Rocky Mountains, Black Hills, Scottsbluff National Monument, and Fort Laramie.

International Connectivity. The Heartland Expressway is also the central portion of the Ports-to-Plains Corridor, an essential part of the necessary transportation infrastructure for movement of goods and products between Mexico, the United States, and Canada. In addition the project segment is part of NDOR's Priority Commercial System, a continuous network of routes within the state designed to carry higher traffic volumes, especially larger volumes of commercial vehicles.

Alternatives Analysis. Alternatives were developed and screened based on three levels of analysis.

- Facility Alternatives. While the language of the Congressional Earmark specifically states that the facility is an Expressway (defined as a divided, limited-access highway); other facility types were analyzed. The first level evaluated different roadway facilities based on their ability to meet the project purpose and need. Five facility types were evaluated, consisting of a Super 2 Highway, 2-Lane Highway with Climbing Lanes, 2-Lane Highway with Auxiliary Turning Lanes, 4-Lane Undivided Highway, and 4-Lane Divided Highway. Of these, the 4-Lane Divided Highway is the preferred alternative.
- Alignment Alternatives. The second level evaluated alignment alternatives based on engineering feasibility and constructability issues. Three alignment locations were evaluated for a 4-Lane Divided Highway, consisting of an East Offset, Centered, and West Offset alternative. Of these the West Offset is the preferred alternative. The existing US 385 lanes would be used for the northbound lanes, while constructing two new southbound lanes to the west. The existing US 385 lanes would be resurfaced as needed to extend the pavement life until such time they could no longer be resurfaced.

Once this occurs, the northbound lanes would be reconstructed at the 40-foot median width and match the elevation of the southbound lanes.

- Design Alternatives. The third level evaluated design alternatives at four specific locations along the alignment, consisting of the Junction of US 385 and L62A, at the unincorporated community of Angora, at the Dinklage Feedlot, and within the City of Alliance. Screening was based on public input, environmental impacts, and engineering considerations. The preferred design alternatives were the Large Sweeping Curve at the Junction; East Alternative at Angora, Shifted Alternative at the Dinklage Feedlot Shifted Alternative, and Five-Lane with Two-Way Left-Turn Lane in Alliance. These refinements for the spot locations will be incorporated into the West Offset alternative.

Interim Phasing. The first construction project would be within the City of Alliance. The second construction project would begin south of the Alliance improvements, this project includes an interim build phase that uses the existing US 385 lanes as the northbound lanes, while constructing two new southbound lanes to the west. This phase would extend to south of Angora to the existing junction of L62A. Once the improvements approach the junction, the depressed median would be tapered down to establish auxiliary turn lanes at the intersection. The outside southbound lane would transition into the existing free right, and the US 385 median would continue to taper down to zero south of the intersection. A dedicated left-turn lane would be formed at the junction for northbound left turns. The existing US 385 lanes would be resurfaced as needed to extend the pavement life until such time they could no longer be resurfaced. Once this occurs, the northbound lanes would be reconstructed at the 40-foot median width and match the elevation of the southbound lanes. The sweeping curve connection to L62A and realignment of US 385 would be constructed during the third construction project.

General Project Schedule and Anticipated Funding. The first construction project, Alliance South, DPS-385-4(139), CN 51522, programmed in the STIP for FY15, would construct US 385 from the junction of N-2 south to approximately MM 100+00. The project would use designated federal funds and is estimated at \$25 million for construction costs and construction engineering. The second construction project, L62A North, S-385-3(1021), CN 51443, programmed in the STIP for FY16, would construct US 385 from approximately MM 100+00 south to the junction of US 385 and L62A. This project would use Build Nebraska Act funds and is estimated at \$30 million for construction costs and construction engineering. The two projects above have operational independence and could be constructed in four construction seasons. The third construction project also has operational independence is currently not programmed because it is more than five years out. This phase, would construct the segment of highway connecting L62A to US 385, via the long sweeping curve. This project would also require reconstructing the south leg of US 385 to connect to the new sweeping curve. Preliminary engineering, ROW and utilities have or would occur under a separate project NH-385-3(118), CN 51432, and are estimated at \$10 million. NDOR is committed to constructing this segment in the future as funding becomes available; it will be considered in the next group of selections for the Build Nebraska Act. The total cost (in today's dollars) of the project contemplated is estimated at \$90 million, which includes an estimated \$25 million to construct the sweeping curve and reconstruct the northbound lanes.

Environmental Impacts Analysis. The analysis of impacts covered environmental, social and economic issues, including in-depth evaluation of those resources with greatest concerns. Special studies consisted of Section 106/Cultural Resource Review and Coordination, Paleontological Survey, Wetland Delineation and 404 Coordination, Endangered Species Review and Coordination, Farmland Conversion Impact Coordination, Noise Study, Hazardous Materials Technical Report, and Subsurface Investigation. Based on the analysis to-date, adverse impacts are considered minor and can be mitigated with proposed measures and conservation conditions.

Public Involvement/Project Coordination. Public involvement has consisted of:

- Site Visit and Local Officials Scoping Meeting on 10 January 2011
- Citizen Survey by Alliance Police Department to determine the types and frequency of near-miss incidents along the project length
- Public Information Meeting on 3 May 2011, including project notification information mailing to stakeholders, news release distributed through NDOR's normal media distribution, news story published in the Scottsbluff Star Herald on 16 April 2011, and signs placed at two locations along the corridor to inform drivers of the public meeting. Most of the comments received were supportive of the project. The local community considers the roadway to be in need of upgrading due to the presence of large trucks, and poor visibility due to the vertical curves.
- Agency Coordination with state and federal agencies, including coordination with US Army Corps of Engineers, US Fish & Wildlife Service, Nebraska Game & Parks Commission, Nebraska State Historic Preservation Office, and Tribal Historic Preservation Officers.

Conclusion. This Draft EA has been prepared in accordance with the regulations of CEQ (40 CFR 1500-1508), as well as FHWA's implementing regulations (23 CFR 771.119 and 23 CFR 771.135). The proposed alternative is to construct a 4-lane divided highway offset to the west of the existing alignment, including context sensitive designs at spot locations. Based on this assessment, the proposed alternative would satisfy the purpose and need.

After reviewing and studying this Draft EA, FHWA has determined that the document adequately and accurately discusses the environmental issues and impacts of the proposed project. Based on the analysis to-date, adverse impacts are considered minor and can be mitigated. To comply with all applicable Federal, State and local legislation, as well as any general or special conditions required by pending permits, the mitigation measures/environmental commitments have been incorporated into the Preferred Alternative. These commitments would be implemented during the appropriate project phase.

Next Steps. A Public Hearing for the project has been scheduled for 1 October 2014, 5:00–7:00 pm MST, at Newberry's, 110 W 4th Street, Alliance, NE 69301. The format of the public hearing would consist of an Open House from 5:00–6:30 pm, and a Public Forum from 6:30–7:00 pm.

Design information would be displayed and personnel from NDOR would be present to answer questions and receive comments about the project. This hearing would be held for coordination and fact-gathering on the NEPA document, as well as to provide and receive information

regarding environmental impacts. The project study team would be present to receive design input regarding the project. There would be a 30-day comment period for the Draft EA.

Following agency and public review and comment on the Draft EA, FHWA would determine whether the project can be carried forward with a Finding of No Significant Impact (FONSI), or if an Environmental Impact Statement (EIS) is required.

1. INTRODUCTION

A. Background

The Nebraska Department of Roads (NDOR), in cooperation with the US Department of Transportation (USDOT) Federal Highway Administration (FHWA), is proposing to improve a segment of the National Highway System (NHS) corridor beginning at the junction of United States Highway 385 (US 385) and State Link 62A (L62A), and extending north to the City of Alliance, Nebraska. The project is located within the Nebraska Panhandle, an elongated region extending west from the main portion of the state and made up of eleven counties. **Figure 1.1** shows the project location.

The NHS includes the Interstate Highway System as well as other roads considered to be important to the nation's economy, defense, and mobility. The NHS was developed by the DOT in cooperation with states and local officials. Within the NHS system, Congress has designated certain roads or corridors as being high priority. This project is part of the Heartland Expressway which is one of the routes that has been designated as a High Priority Corridor. **Figure 1.2** shows the High Priority Corridors, including the Heartland Expressway (Corridor 14). Five first class Nebraska Panhandle cities (first class cities are cities with populations ranging from 5,001 to 100,000), including Scottsbluff, Alliance, Gering, Sidney, and Chadron, are located along the Heartland Expressway route.

The Heartland Expressway is a federally designated trade corridor within the four states of Colorado, Nebraska, Wyoming, and South Dakota. It traverses some of the most agriculture- and energy-productive rural regions in the United States, and is a major route to popular tourist destinations such as the Rocky Mountains, Black Hills, Scottsbluff National Monument, and Fort Laramie. In addition, the Heartland Expressway is the central portion of the Ports-to-Plains Corridor, an essential part of the necessary transportation infrastructure for movement of goods and products between Mexico, the United States, and Canada (**Figure 1.3**).

The portion of the Heartland Expressway along US 385 between the junction with L62A and the City of Alliance is currently a two-lane rural highway. This segment links the City of Alliance with Interstate 80 (I-80), the largest freight transportation corridor in the United States, and with I-90 at Rapid City, South Dakota. According to local officials and business leaders, this connection is a vital link for all sectors of the regional economy.

In addition to being a High Priority Corridor on the NHS and a vital link for Panhandle communities, this segment of L62A/US 385 is part of Nebraska Department of Roads (NDOR)'s Priority Commercial System, a continuous network of routes within the state designed to carry higher traffic volumes, especially larger volumes of commercial vehicles.

This Draft Environmental Assessment (EA) was prepared in compliance with the requirements of the *National Environmental Policy Act of 1969* (NEPA), the Council on Environmental Quality (CEQ) regulations in the Code of Federal Regulations (CFR) (40 CFR 1500-1508), and guidelines in FHWA's Technical Advisory T-6640.8A, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*. The intent of these regulations and guidelines are to ensure that all factors are considered in the transportation decision-making process, including a concern for the environment, and the involvement of the public (FHWA, 1987).

Figure 1.1 – Project Location

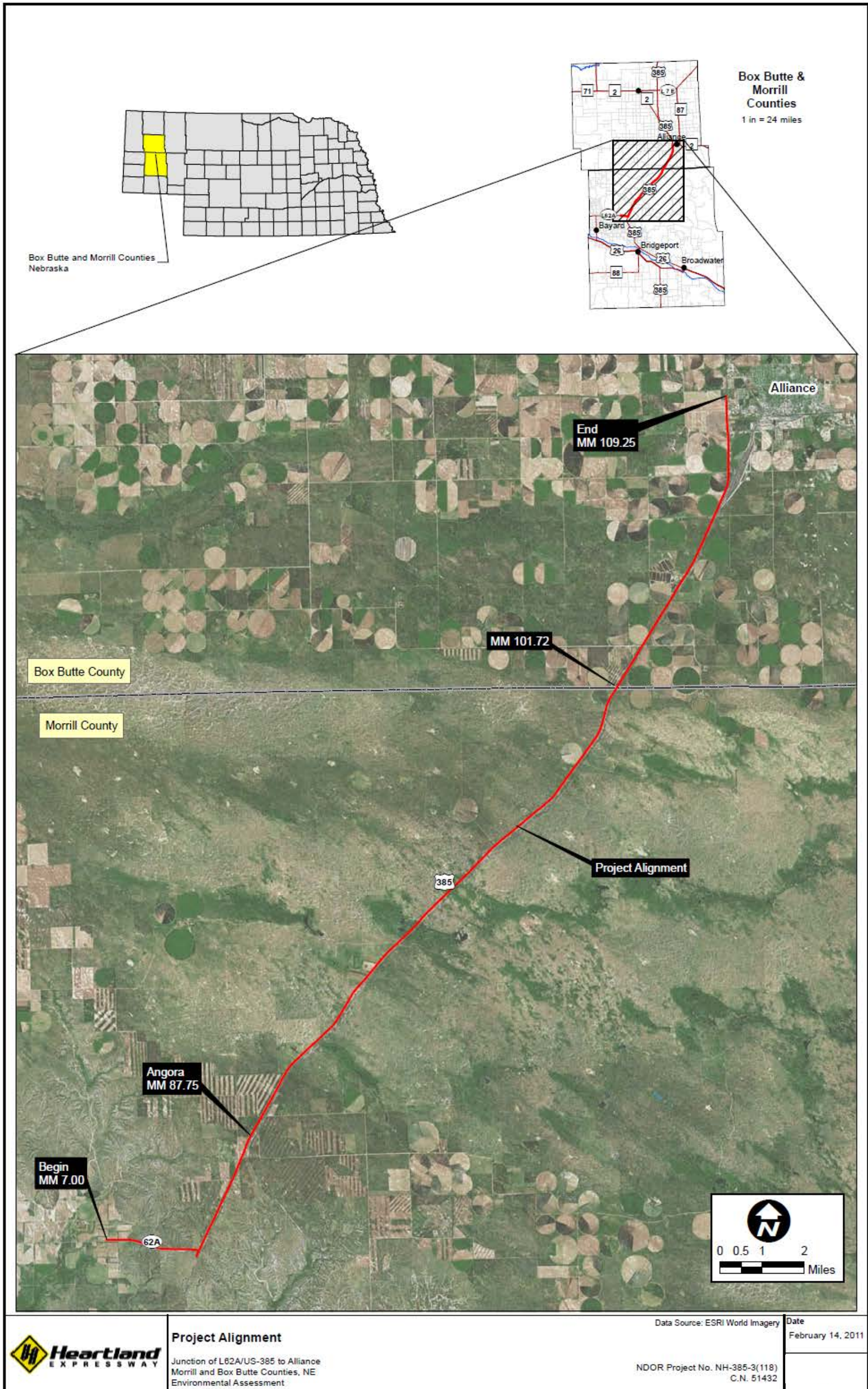
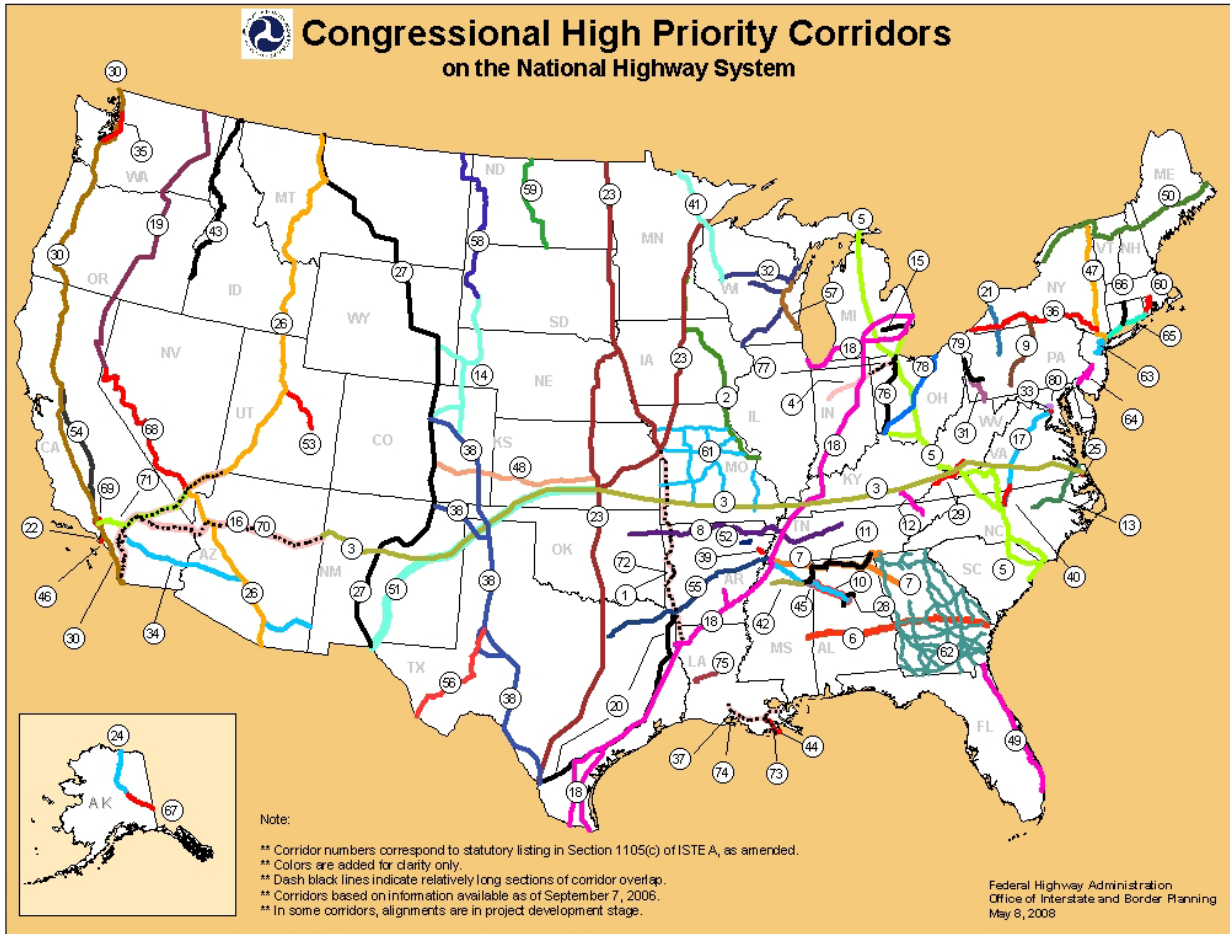


Figure 1.2 – High Priority Corridors on the National Highway System



Source: Federal Highway Administration, <http://www.fhwa.dot.gov/planning/nhs/hipricorridors/hiprimap2.jpg>

Figure 1.3 – Ports-to-Plains Transportation Corridor



B. Location

The proposed 26-mile long project is located in the Panhandle region of western Nebraska (see **Figure 1.1**), a rural and sparsely populated area of the state. The project begins at the junction of US 385 with L62A, about 20 miles east of the City of Scottsbluff (population 15,000) in Morrill County, in the rolling hills above the North Platte River Valley. Cattle ranching is the primary land use. Heading north on US 385, the hills flatten into a wide plain in the vicinity of the unincorporated community of Angora (population 3), where dryland farming dominates the landscape. Further north, US 385 crosses the western edge of the Nebraska Sandhills, the largest dune system in the Western Hemisphere. These grass-stabilized dunes are used for grazing land. The Sandhills end near the Morrill/Box Butte county line and the terrain flattens into a wide plain extending north to the City of Alliance (population 9,000) and beyond. The area is almost entirely in agricultural production with widespread center-pivot irrigation, with sugar beets, potatoes, edible dry beans, corn, and wheat as the dominant crops. Alliance is a regional economic hub, and a center for rail transportation, manufacturing, and agricultural production and processing. The project ends in Alliance just past the intersection of US 385 with Nebraska Highway 2 (N-2).

C. Past Planning

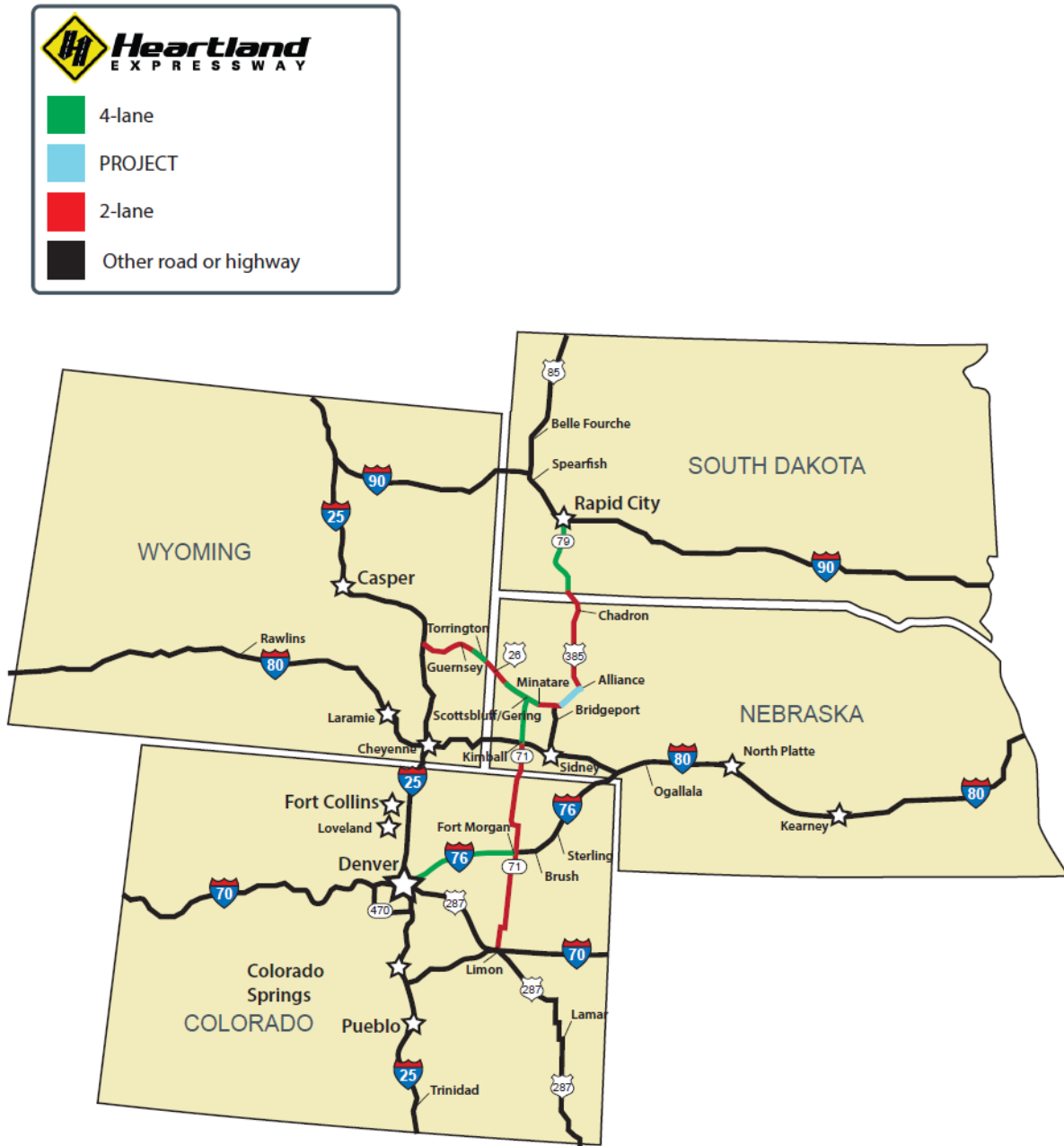
While the proposed improvements have benefits as a stand-alone project, as mentioned above, the 26-mile long route would have greater benefits once the entire Heartland Expressway is completed. Congress identified this High Priority Corridor in 1991 to extend from Denver through Scottsbluff to Rapid City (**Figure 1.4**). Since 1991, about 50 percent of the Heartland Expressway has undergone improvements, including segments in Colorado east of Denver, the entirety of South Dakota from Rapid City south, and in Nebraska from Kimball to east of Scottsbluff.

Many community organizations and residents of western Nebraska and South Dakota have pressed for this four-lane highway to provide an improved connection to I-80 and I-90. In the Nebraska Panhandle, the Heartland Expressway is considered a needed stimulus for economic development of the region (see for example <http://www.heartlandexpressway.com/impacts-benefits> /accessed 13 August 2014). Illustrating the importance of this corridor, NDOR has identified the Heartland Expressway corridor as part of the Nebraska Expressway System, the only designated expressway west of Grand Island (**Figure 1.5**).

The *Heartland Expressway Economic and Engineering Feasibility Study* (1993) was contracted by NDOR and South Dakota DOT to make recommendations on the feasibility and best routing. The study evaluated:

- over 50 route combinations generally located between Wyoming State Highway (SH) 29 on the west, and US 385 and Nebraska SH 87 on the east; screened them down to three finalist routes; and made a recommendation of a preferred alternative; and
- three highway standard alternatives consisting, of a 4-lane freeway, 4-lane expressway, and 2-lane highway with some 4-lane sections.

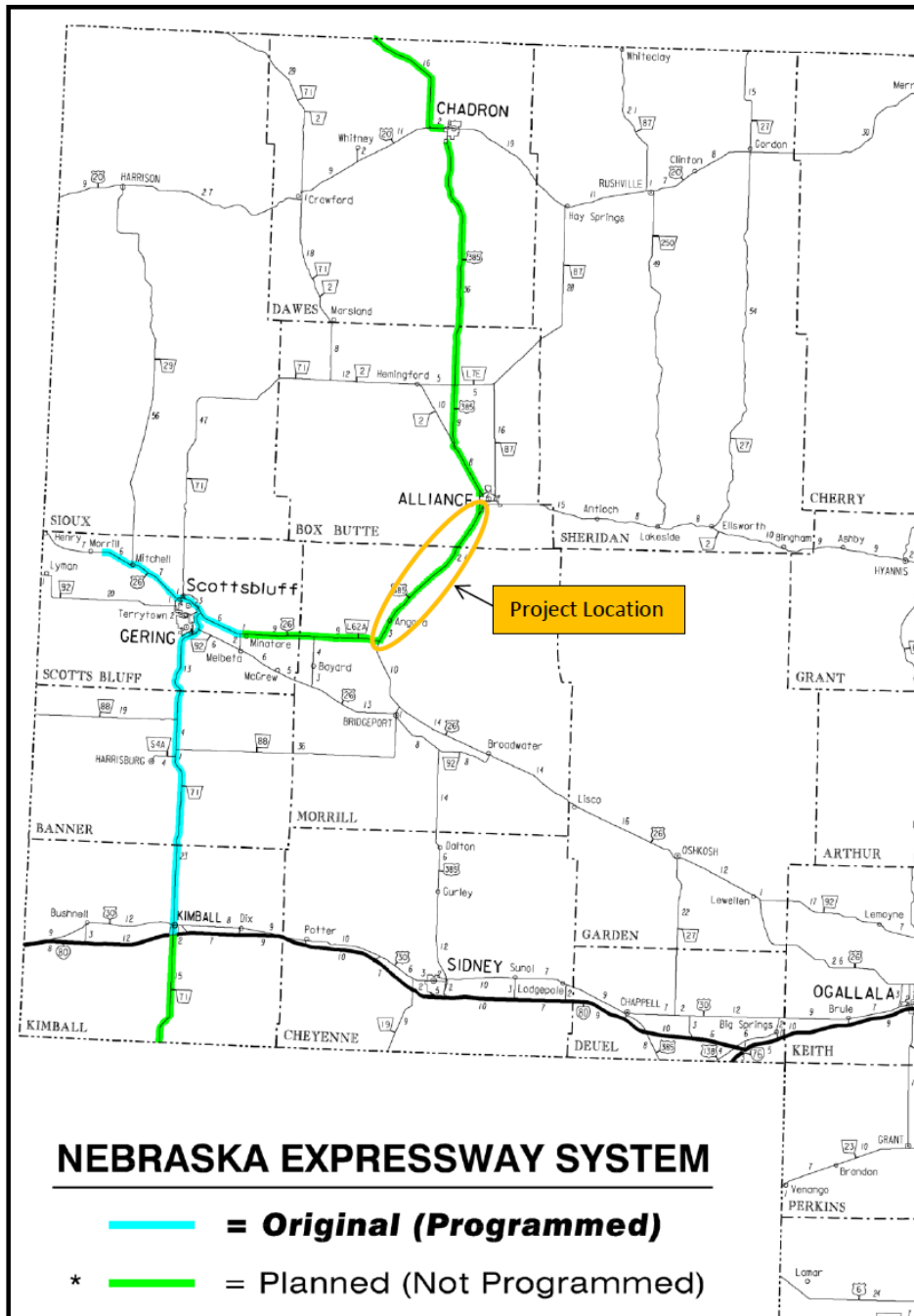
Figure 1.4 – Heartland Expressway Roadway Configuration Status



Source:

<http://www.heartlandexpressway.com/corridor-status> (accessed 8 August 2014)

Figure 1.5 – Nebraska Expressway System in the Panhandle



Source: <http://www.transportation.nebraska.gov/needs/docs/xpressway-map.pdf>

Feasibility was evaluated based on traffic, engineering, cost, environmental impact, travel efficiency, and economic development efficiency. Expressway improvements were considered feasible based on:

- traffic warrants during peak times of year (summer tourist and fall harvest seasons)
- a positive benefit/cost ratio between 1.2 and 1.7, and an internal rate of return between 9.3 and 13.7
- the unlikely potential for environmental impacts that cannot be avoided or mitigated
- economic feasibility supported by economic development feasibility (but not by travel efficiency since none of the alternatives had enough traffic).

A recommended route was identified to provide the greatest transportation and economic development benefit, while minimizing environmental impacts. The feasibility results indicated that a combination 4-lane/2-lane highway is feasible from the standpoint of Nebraska, South Dakota and Wyoming, with the most feasible route connecting Scottsbluff/Gering to Rapid City via Alliance, Chadron and Hot Springs. The segments from Scottsbluff/Gering to Alliance and Hot Springs to Rapid City were considered feasible as four-lane highways.

The 1993 study is in the process of being updated (*2013 Heartland Expressway Corridor Development and Management Plan, Draft Report*). The Technical Memorandum that calculated economic benefits to support this report indicates that the Expressway is likely to result in even greater economic benefits than were identified in 1993, including construction jobs, operation and maintenance jobs and purchases, and economic development impacts such as attracting new roadside services and providing a more competitive low-cost location with proximity to larger urban areas especially for businesses taking advantage of the region's significant agricultural assets and distribution facilities.

This project would be another step in completing this regional expressway system. While many of the segments have independent utility, the true value of the investments made in this corridor would not be fully realized until the remaining roadway improvements are in place.

D. Logical Termini

The proposed project extends from the junction of L62A to the junction of N-2, in the City of Alliance. Based on the needs of the corridor this segment of highway was selected for improvement because it is the next logical segment of the overall Heartland Expressway corridor. It has the highest traffic volume along the uncompleted corridor and has independent operational deficiencies that the public has asked to be addressed.

The start and end points of this project are two junctions along this stretch of US 385. At the north end of the project, the City of Alliance is the economic hub of this part of the Nebraska Panhandle, and traffic volumes split with 55 percent to the north on US 385, 35 percent to the east onto N-2, and 10 percent to the west on 10th Street. At the south end of the project, traffic volumes split at the junction of US 385 with L62A, with 54 percent of the traffic on L62A to and from Scottsbluff, and 46 percent of the traffic continuing on US 385 to and from Bridgeport. Thus, traffic volumes are highest along this segment. As the Heartland Expressway segments are planned to be improved over a number of years, this project had the highest priority due to the highest traffic volumes.

While these junctions serve as appropriate logical termini, or endpoints, for the project, the environmental study area was extended 2 miles west of the L62A intersection to accommodate a change in the priority movement of US 385 (see **Figure 3.4**). Currently, there is a stop sign for L62A eastbound traffic heading north on US 385, whereas US385 traffic has free flowing traffic with no stop sign at this intersection. Eventually, the completed Heartland Expressway would adjust the traffic pattern at this location, and make the L62A route the priority movement with no stop sign, whereas there would be a stop for northbound US 385 traffic here. Thus the 2-mile area was studied to accommodate any modifications to the intersection of US 385 and L62A that might be required to change the priority movement (such as a sweeping curve, see **Section 3.D.1**).

In addition to higher traffic volumes, this segment of the Heartland Expressway (between L62A and the City of Alliance) is the reasonable next segment to improve due to operational inefficiencies that exist on this segment of highway. This segment is the only part that passes through the Nebraska Sandhills, which have numerous short dunes requiring frequent climbs and turns. As a result of Sandhills topography, this route has a number of areas that do not meet road standards: there are nine crests or sags which do not meet AASHTO standards for the speed limit, and 21 areas where grades do not meet NDOR standards. Lastly, the high percentage of slower moving agricultural truck traffic mixed with passenger vehicles travelling this stretch of highway with its climbs and turns decreases the operational efficiency of this facility.

After this project would be constructed, there would still be a 13-mile-long two-lane section between the junction with L62A and the City of Minatare, and that section would likely be the next to be improved. Environmental documentation and preliminary design work have already been done in anticipation of future funding for the Minatare to Scottsbluff segment. These two projects together would complete a substantial portion of the Heartland Expressway, and provide improved system linkage between two economic hubs in the Panhandle, Alliance and Scottsbluff, as well as between Alliance and I-80.

2. PURPOSE AND NEED

A. Purpose

This project is intended to develop an improved transportation corridor connecting the junction of US 385 and L62A, with the City of Alliance. This highway has been identified as part of the Heartland Expressway, a High Priority Corridor on the National Highway System (NHS). The improved corridor is intended for the following transportation purposes:

- To **provide an improved north-south highway on a NHS High Priority Corridor that increases the efficiency and safety of commerce and travel** as included in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). ISTEA calls for the development of High Priority Corridors on the NHS, including the Heartland Expressway.
- To **fulfill legislative intent** of the ISTEA; the Transportation Equity Act for the 21st Century (TEA-21); the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which have provided federally “earmarked” funds for the development of the Heartland Expressway; and the Moving Ahead for Progress in the 21st Century Act (MAP-21), which continued authorization of funding as deemed necessary in SAFETEA-LU.
- To **fulfill legislative intent of the Build Nebraska Act**; the State has identified this project as one of the high priority projects to receive funding under this act. The bill does not specify which projects are funded under it, but allows NDOR to determine this based on need and safety concerns.
- To **address roadway and operational deficiencies** along this segment of the Heartland Expressway corridor.

In addition to the above purposes, an additional goal for the project, beyond the transportation issues, is:

- To **improve the highway infrastructure in order to facilitate economic development** by enhancing the efficiency and mobility of Nebraska Panhandle regional commerce for residents, businesses, visitors, and interstate travel.

B. Need

B.1 Roadway and Operational Deficiencies

Overall Condition. The existing roadway is classified as a Principal Arterial and is on the NHS. The existing segment of US 385 consists of two 12-foot wide asphalt lanes and 10-foot wide shoulders, of which 8 feet is surface with asphalt; the roadway is generally in “fair” condition. The existing segment of L62A consists of two 12-foot wide concrete lanes and 10-foot wide shoulders, of which 8 feet are surfaced with asphalt. There is approximately 1 mile of L62A with a climbing lane for eastbound traffic, consisting of an extra 12-foot wide concrete lane and no surfaced shoulder. The roadway is generally in “fair” condition. Between the logical endpoints of the project are three shorter stretches characterized by different land uses and terrain, resulting in different traffic and transportation issues. These are described below.

Northern Segment: Alliance to the Box Butte/Morrill County Line. This segment extends south from the City of Alliance to approximately the Box Butte-Morrill County line. This portion of roadway was last resurfaced with 3 inches of asphalt in 2001 and is experiencing stripping and

rutting. The segment is characterized by the highest traffic levels and the highest incidence of crashes. It is the most highly developed, with at least 20 residences and businesses with driveways with direct access to US 385. The portion outside the City of Alliance is dotted with center pivots to irrigate the crops of sugar beets, beans, and potatoes. This area is relatively flat with typical existing road grades of less than 1 percent.

Central Segment: Sandhills Region. This segment extends south from approximately the Box Butte-Morrill County line to approximately the unincorporated community of Angora. This portion of roadway was last resurfaced with 4 inches of asphalt in 1992 and is experiencing severe stripping and rutting. Traffic and transportation issues in this area are related to the topography of the sand dunes. The shorter sight distance leads to problems when agricultural trucks pulling out of farm roads and through traffic must either brake sharply (as these trucks are slow to accelerate) or pull into the lane of oncoming traffic. This area is relatively hilly with typical existing road grades as high as 4.5 percent.

Southern Segment: Angora to L62A. The segment near the sweeping curve may need to be reconstructed on a new alignment to make the expressway the priority movement. This change in alignment would include connecting L62A to US 385 as the free-flow movement and realigning the southern leg of US 385 as a stop controlled movement. This area is generally flatter with typical existing road grades in the 0.5 to 2.7 percent range, except at the extreme southwest end where the road descends into the North Platte River Valley below, reaching a 4.9 percent grade. It is possible that the reconstruction of the L62A/US 385 Junction would traverse some deep gullies depending on the alternatives chosen. Portions of this segment of existing roadway are in need of panel replacement, while other portions were resurfacing in 2006 and are currently experiencing deep rutting.

High Volumes of Truck Traffic. The segment of the NHS is particularly important to truck traffic; traffic numbers indicate that an average of 19 percent, or about one in every five, of the vehicles on the project route is a truck. This compares to a state-wide average of 13 percent for comparable roads. The current daily volume of heavy trucks on US 385 from Angora to Alliance is 400 to 500 per day according to recent NDOR counts. During harvest season (July to February), the number of heavy trucks on the project route increases by approximately 50 percent.

Longer and Heavier Trucks. The majority of US 385 on the current alignment from Angora to Alliance was built in 1958 as a 2-lane rural roadway to support small farms moving grain and root crops in single axle trucks. Resurfacing over the last 20 years has maintained the surface and added paved shoulders. However, the existing roadway presents challenges when trying to serve the kinds of trucks and commercial vehicles now moving through the region.

Changes in the agricultural industry have resulted in the use of longer and heavier trucks, including tankers and semi-trailers often pulling pup trailers. . Furthermore, under Nebraska state law, sugar beet trucks in this area are allowed by permit the flexibility to exceed legal length and legal weight coming out of the fields. Improvements in agricultural production have also increased the total volume of produce being transported from farm to market, and to temporary storage areas.

The number of larger trucks with trailers primarily hauling sugar beets during harvest season can create conflicts with other vehicles using US 385. In the segment of US 385 from Angora to Alliance, there are approximately 70 field access drives where trucks access the highway. Due to the nature of the harvest operations, there are up to six truck movements leaving and entering US 385 for every load of beets. (Empty trucks slow down and leave the highway at field access points as the harvest begins, are loaded, and enter the highway to deliver their load to a temporary staging area. The full truck then leaves the highway at the temporary staging area, unloads, and re-enters the highway to return to the field for another load of beets. After the peak harvest season ends, a new cycle begins where empty trucks leave the highway to access the temporary staging area to get a load of beets and re-enter US 385 to travel to the Western Sugar Refinery in Scottsbluff just off US 26. This process can continue for several months after harvest is complete.)

Recent national emphasis on “green” energy has resulted in an increase of trucks carrying wind turbine blades in the region. Trucks carrying wind turbine blades from the manufacturing plant to the wind farm location are approximately 120 feet long. Industry sources indicate planned future turbines will have even longer blades, up to 180 feet in length. In comparison, the average mid-size sedan car is 13 ½ feet long. These larger and longer trucks accelerate slower and thus often travel at slower speeds. As a result, these types of trucks may need to encroach into oncoming traffic lanes when entering and exiting the highway and require longer passing lengths for faster moving vehicles to safely pass.

Encroachment by Turning Trucks. Turning vehicles currently encroach on opposing lanes to accomplish left and right turns. This is a potential hazard as vehicles heading in the opposite direction may not be able to stop in time to avoid a slow-moving truck. The trucks that use US 385 are large, and many have “pup” trailers as well as semis. Turning without running off the pavement can be challenging for these vehicles. There are a total of 70 existing access points on the project where this can happen.

Longer Passing Distances. The longer length of trucks can increase the required distance for a passenger vehicle to complete a pass of the truck. In this case the use of 120-foot long sugar beet trucks may warrant such consideration. Based on *NCHRP Report 505*, the length required to complete the pass of such a sugar beet truck can be 400 to 500 feet longer than a standard pass. This additional length for sugar beet trucks would eliminate three areas where passing is allowed (1.62 miles), and lengthen many other No Passing Zones.

Seasonal Tourist Traffic. Seasonal increases of vehicles and campers occur along the project route as US 385 is designated as a scenic byway and is a direct connection to many regional tourist destinations, including Mount Rushmore National Park, Scottsbluff National Monument, Chimney Rock National Historic Site, Chadron and Fort Robinson State Parks. The summer tourist season overlaps with the local wheat harvest, and corresponding increase in harvest trucks.

Truck Collisions. The current rate of truck involvement in collisions is 14.7 percent in the most recent three years of data. The concern with truck collisions is the potential for more severity and personal injuries. Future improvements to US 385 would better enable passenger cars and oversize trucks to share the road safely and efficiently.

B.2 Need for an Improved North-South Highway on a NHS High Priority Corridor that Increases the Efficiency and Safety of Commerce and Travel

National Highway System High Priority Corridor

As discussed earlier, the Heartland Expressway has been planned for many years. Currently, it is a 4-lane divided highway from the City of Minatare west past Scottsbluff and south to I-80, and from the South Dakota line northward (**Figure 1.4**). This leaves one 2-lane gap between the existing 4-lane sections, extending from the Nebraska to South Dakota line to Minatare. As funding becomes available, and the transportation needs increase for the route, this gap would be closed by constructing a 4-lane expressway, which would provide an improved transportation network that connects not only the cities within the Heartland Expressway corridor, but others throughout the Great Plains (**Figure 1.5**).

The Great Plains International Trade Corridor Assessment (Cambridge Systematics, 2008) indicated the need for an improved north-south route including the Heartland Expressway. The study also showed that the project roadway carries a high volume of trucks, and that traffic on the project route was likely to increase in the range of 81 to 140 percent by the year 2030.

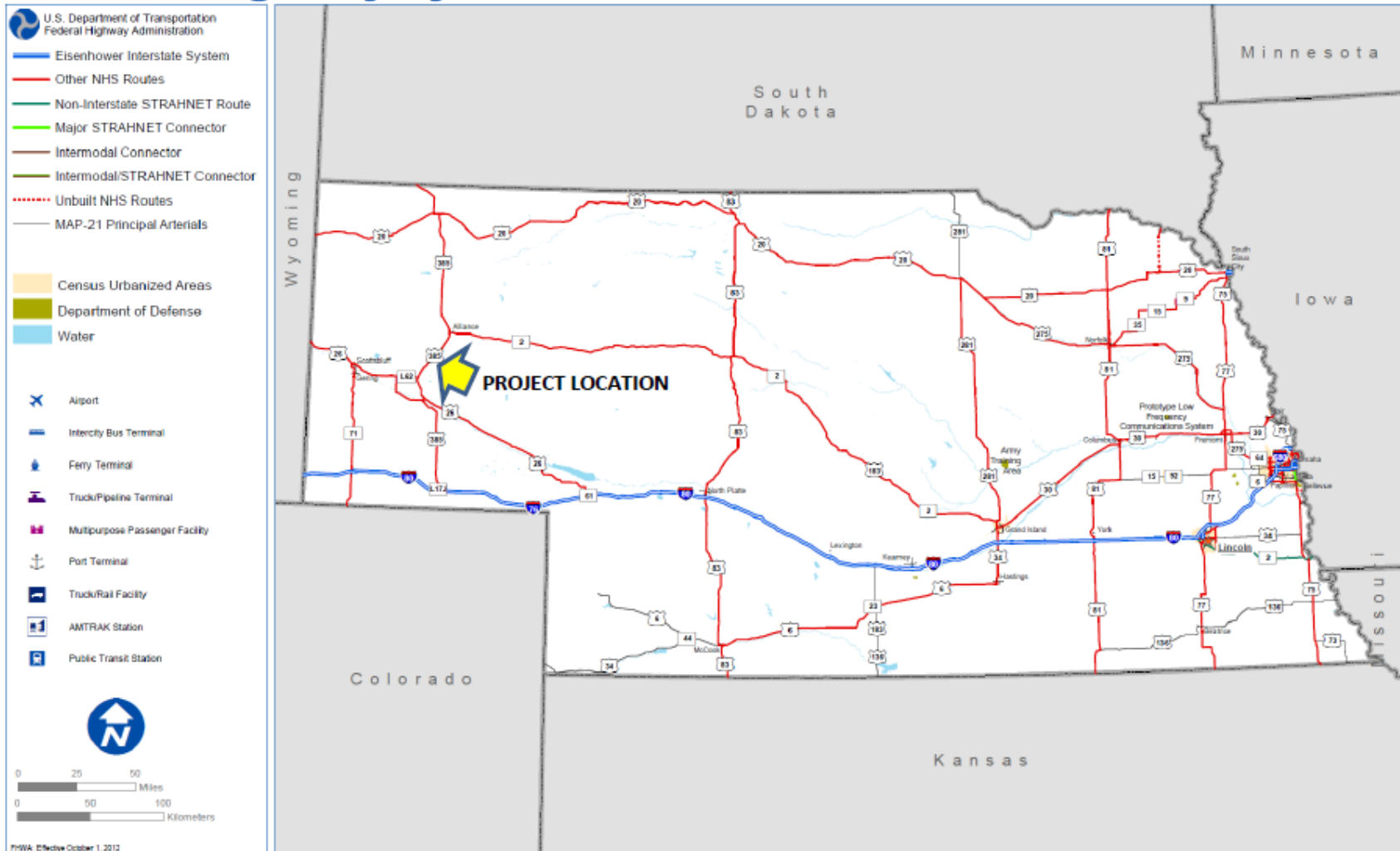
From a transportation standpoint, the segment of the Heartland Expressway between L62A and the City of Alliance is the reasonable next segment to improve, for several reasons. First, traffic volumes drop both to the north and the south of the project limits. At the north end of the project, traffic splits with 55 percent to the north on US 385, 35 percent to the east on N-2, and 10 percent to the west on 10th Street; at the south end, traffic splits with 54 percent to the west on L62A and 46 percent to the south on US 385. Second, this segment is the only part that passes through the Nebraska Sandhills, which have many short dunes requiring frequent climbs and turns. As a result of Sandhills topography, many areas on this route do not meet design standards: 9 crests or sags do not meet AASHTO standards for the speed limit, and 21 areas have grades that do not meet NDOR standards. The combination of traffic volumes and frequent climbs and turns results in decreased operational efficiency of this facility.

After this project would be constructed, there would still be a 13-mile-long two-lane section between the junction with L62A and the City of Minatare, and that section would likely be the next to be improved. Environmental documentation and preliminary design work have already been done in anticipation of future funding for the Minatare to Scottsbluff segment. These two projects together would complete a substantial portion of the Heartland Expressway, as well as providing improved system linkage between two economic hubs in the Panhandle, Alliance and Scottsbluff, and between Alliance and I-80.

In general, the number of central and western United States north-south highways proposed as High Priority Corridors (see **Figure 1.2**) illustrates the need for improved north-south highways in these regions, as existing ones are few and far between. In particular, this project's segment of US 385 is vitally important to the transportation network in the Panhandle region because this region has so few north-south links in the NHS. Currently, although US 71 is a NHS highway south from Scottsbluff, there are no NHS roads that cover the north-south extent of the Panhandle further west of US 385 in Nebraska (**Figure 2.1**). The closest through north-south NHS highway to the west is US 85 in Wyoming, approximately 65 miles from US 385 (not shown on **Figure 2.1**). The closest north-south NHS roadway to the east is US 83, approximately 125 miles from US 385.

Figure 2.1 – Map of the National Highway System (in Nebraska)

National Highway System: Nebraska



Source: <http://www.fhwa.dot.gov/planning/nhs/> (accessed 21 January 2013)

Furthermore, as seen in **Figure 2.1**, the proposed project is more than a north-south highway on the NHS. It is also the connection between two east-west highways on the NHS: N-2 and L62A. Thus, this roadway is a crucial component of the regional transportation network. If this two-lane road were closed, for example due to a serious accident, traffic would require a detour route that would add at least 80 miles to the approximately 26-mile route, which would not only result in serious inconvenience and safety concerns for traveling public, but also could result in enormous delays for emergency vehicles attempting to reach businesses and residences along the route. If the accident damaged critical part of the highway such as a bridge, it could take weeks or longer for the road to reopen.

Section 1105 of ISTEA, the original act in which NHS High Priority Corridors, including Heartland Expressway, were identified, stated that the High Priority Corridor highways were of national significance and allowed the states to give priority to funding the construction of these corridors and to provide increased funding for segments of the corridors that were identified for construction. In addition, ISTEA stated: "In approving programs of projects under this section, the Secretary may give priority of approval to, and expedite construction of, projects to complete construction of such segments."

The focus of ISTEA was on improving the efficiency and safety of the NHS network, which makes up 4 percent of the nation's roads, but carries 40 percent of the traffic and 75 percent of heavy truck traffic (<http://www.fhwa.dot.gov/publications/publicroads/96spring/p96sp2.cfm>, accessed 13 August 2014). The part of the National Highway System covered by this project is particularly important to truck traffic; traffic numbers indicate that an average of 19 percent, or about one in every five, of the vehicles on the project route is a truck. This compares to a state-wide average of 13 percent for comparable roads. During the wheat harvest (July to August) and sugar beet harvest season (September to February), the number of heavy trucks on the project route increases by approximately 50 percent.

Section 1105 of ISTEA spelled out the need for High Priority Corridors on the NHS as follows:

- The construction of the Interstate Highway System connected the major population centers of the Nation and greatly enhanced economic growth in the United States;
- Many regions of the nation are not now adequately served by the Interstate Highway System or comparable highways and require further highway development to serve the travel and economic development needs of the region; and
- The development of transportation corridors is the most efficient and effective way of integrating regions and improving efficiency and safety of commerce and travel and further promoting economic development.

Ports-to-Plains Alliance

The Heartland Expressway is also a part of the Ports-to-Plains (P2P) Alliance, a collaboration of three major highway corridors covering nine rural states. As of 2010, the combined efforts of the Alliance have resulted in more than \$1 billion in Federal funding to develop, build, and improve the Alliance's corridor (P2P Alliance, <http://www.portstoplains.com> accessed 6 October 2011).

The P2P Alliance is a non-profit, non-partisan, community-driven advocacy group led by mayors, councilpersons, economic development officials, business and other opinion leaders

from ten U.S. states served by a nine-state, 2,300-plus mile economic development corridor between Mexico and Canada. In the U.S. these communities reach from Texas on the south to North Dakota and Montana on the north. The corridor extends into the energy and agriculture rich areas in Canada. The Government of Alberta joins many communities in Alberta and Saskatchewan looking to expand infrastructure serving the economic needs of their regions and the whole of the Ports-to-Plains Corridor. In Mexico development is taking place connecting the Texas/Mexico border in communities along the corridor stretching to the Ports of Mazatlán on the west coast of Mexico.

The corridor serves North America's energy heartland, including the oils sands in Alberta, Bakken, Niobrara, Permian, Cline, Eagle Ford, and emerging Mexico energy plays. At the same time, we embrace America's new energy economy, and are capitalizing upon wind power, biofuels and other innovation sectors to renew one of America's greatest legacies, the rural heartland.

Great Plains International Trade Corridor (GPITC)

The Port-to-Plains Alliance is the U.S. domestic portion of an even larger trade corridor, which would extend into both Mexico and Canada. This trade corridor is known as the Great Plains International Trade Corridor (GPITC).

The Heartland Expressway, with two other High Priority Corridors (P2P, High Priority Corridor No. 38 on **Figure 1.2**, and Theodore Roosevelt Expressway, High Priority Corridor No. 58), form the central part of the GPITC route connecting Monterrey, Nuevo Leon, Mexico, to Regina and Saskatoon, Saskatchewan, Canada. The GPITC is the backbone of a north-south transportation system extending from Mexico to Canada, with direct connections to additional corridors, including SPIRIT (High Priority Corridor No. 51, extending from Wichita, Kansas, south to El Paso, Texas), La Entrada al Pacifico (High Priority Corridor No. 56, extending from the Permian Basin in southwest Texas through Presidio, Texas, to Topolobampo, Mexico), Route 50 High Plains (High Priority Corridor No. 48), and Camino Real (High Priority Corridor No. 27).

Figures 1.2 and 1.3 show these connections.

As a key region in the Nation's "Energy and Agricultural Heartland," the Heartland Expressway serves a central role in the GPITC, which "produces most of America's energy and nearly a quarter of US commercial farm output, generates 14 percent of US GDP, and transacts 20 percent of US – Canada – Mexico trade" (P2P Alliance Press Release, 9 March 2009).

B.3 Need to Fulfill Federal and State Legislative Intent for Designated Funding

In keeping with the development of the High Priority Corridors and as a key part of the Heartland Expressway, the federal government in the 2005 SAFETEA-LU included funding to build the section between Minatare and Alliance, which is further divided into three smaller projects with logical termini: Minatare to the Bayard turnoff, L62A to the US 385 Junction, and L62A Junction to Alliance. The current project is the L62A Junction to Alliance segment.

Table 2.1 summarizes Federal earmarks to the State of Nebraska for the Heartland Expressway. Table 2.2 summarizes Federal earmarks to surrounding states for their segments of the Heartland Expressway.

2.1 – Nebraska Earmarks for Heartland Expressway

Description	Amount	Year	Legislation	State	Comment
Heartland Expressway Corridor Development and Management Study	\$475,000	2009	Omnibus Appropriations Act	Nebraska	Sponsor - Congressman Adrian Smith
Construction of the Heartland Expressway between Alliance and Minatare	\$5,000,000	2005	SAFETEA-LU	Nebraska	NA
Construction of the Heartland Expressway between Alliance and Minatare	\$8,000,000	2005	SAFETEA-LU	Nebraska	NA
Construction of the Heartland Expressway between Alliance and Minatare	\$6,000,000	2005	SAFETEA-LU	Nebraska	NA
Construction of the Heartland Expressway between Alliance and Minatare	\$2,500,000	2005	SAFETEA-LU	Nebraska	NA
Heartland Expressway Nebraska	\$855,000	2005	SAFETEA-LU	Nebraska	NA
Heartland Expressway Nebraska	\$1,500,000	2003	TEA-21	Nebraska	NCPD program

Source: <http://earmarks.omb.gov/earmarks-public/> accessed 5 August 2014

Table 2.2 – Other State Earmarks for Heartland Expressway

Description	Amount	Year	Legislation	State	Comment
Heartland Expressway South Dakota	\$1,968,000	2005	SAFETEA-LU	South Dakota	NA
Purchase critical conservation easements along the Heartland Expressway (Highway 79) adjacent to Custer State Park and Wind Cave National Park	\$2,000,000	2005	SAFETEA-LU	South Dakota	NA
Construct Exit 61 I-90 Rapid City (Heartland Expressway)	\$15,116,000	2005	SAFETEA-LU	South Dakota	NA
Heartland Expressway Improvements	\$5,000,000	2005	SAFETEA-LU	Colorado	NA

Source: <http://earmarks.omb.gov/earmarks-public/> accessed 5 August 2014

Further support for the use of the allocated funding for the Angora to Alliance segment came in a letter dated 8 April 2009 from Governor Dave Heineman and State Senators John Harms, LeRoy Louden, and Ken Schilz. This letter was in response to a letter dated 6 April 2009 from John Craig, former Director of the Nebraska Department of Roads (NDOR), which states NDOR support for the project and requests that Federal Highway Administration (FHWA) “support this change [shifting focus to the Angora to Alliance segment] to pave the way for spending the earmark funds on this segment.”

This project has been identified by the State to be included in the Build Nebraska Act, in the Tier II grouping (FY 2016–2019), showing further State support for the highway improvements. The act directs state funds to be used for the construction of high-priority highway projects.

B.4 Goal to Improve the Highway Infrastructure to Facilitate Economic Development

In addition to addressing the transportation problems (needs) of the area, economic development has been identified as a project goal. Goals and objectives are defined by FHWA under NEPA as a desired project outcome beyond the transportation issues.

In keeping with the intent of the High Priority Corridors on the NHS, this project is intended to facilitate economic development by improving transportation infrastructure. The improved US 385 is seen as an investment to stimulate the region’s economy and to help the region’s communities better compete for new industries. The opportunity for economic development is directly linked to the accessibility of the Panhandle region. As this is the primary north-south route in the Panhandle, by improving US 385, and ultimately by completing the Heartland Expressway and connecting to other P2P Alliance corridors, there would be improved access between the rural Nebraska Panhandle and regional trade centers from Mexico to Canada, as well as increased economic and tourism opportunities within Panhandle communities.

The area of the Heartland Expressway is currently served by relatively indirect, two-lane roadways that were originally constructed for local farm to market traffic rather than for regional or interstate traffic, and there are no other north-south routes in this region. As indicated above, the closest NHS road is 65 miles to the west and 125 miles to the east. The closest north-south state highway is N 71, approximately 40 miles to the west. The closest north-south interstate highways are I -25, which is approximately 100 miles to the west, and I-29, which is more than 400 miles to the east.

Heartland Expressway Economic and Engineering Feasibility Study

The *Heartland Expressway Economic and Engineering Feasibility Study* (Wilbur Smith Associates, 1993) used a regional economic model to predict the economic impact of the Heartland Expressway on the region. The analysis considered four indicators of economic development impact:

- Value Added – The value of the firm’s outputs (products or services), minus the cost of the resources used to produce the products or services. The study considered this to be the most comprehensive measure of economic development impact and used this as the “benefit” in the benefit/cost analysis.
- Wages plus Income from Self Employment – Increases in wages and income.
- Employment – New jobs added as a result of the roadway improvements.

- Population – Additional population that is attracted to, or not lost from, the area as a result of the roadway improvements.

The economic feasibility analysis used four sources of economic benefits to determine the extent of economic development from the Heartland Expressway:

- Roadway construction and maintenance activities
- Changes in competitive position as a result of the roadway improvements
- Increased visitors and tourism as a result of the roadway improvements
- Non-business-related economic activity, including reduced travel times, improved fuel efficiency, and reduced crash rates

The Heartland Expressway economic feasibility analysis calculated economic benefits for two geographic areas:

- The corridor of the 13 counties immediately adjacent to the Heartland Expressway
- The two-state area of Nebraska and South Dakota

For the corridor, the proposed highway improvements for US 385 between L62A and Alliance were determined to have a Benefit to Cost ratio of 1.52. This means \$1.52 of benefit is projected for every \$1.00 invested in constructing the project. The proposed highway improvements were projected to have an internal rate of return of 13.5 percent. From a financial perspective, if the return was less than 7 percent, then the money would be better spent elsewhere. The analysis also determined that, over a 30-year period following construction, the corridor would have a positive, net present value of \$80.3 million (1993 dollars). These results indicate that the Heartland Expressway project would have a positive impact on the regional economy.

Great Plains International Trade Corridor (GPITC)

As mentioned earlier, this trade corridor serves an energy- and agriculture-rich area. With the quickly expanding renewable fuels, wind energy, and domestic energy independence industries, either outside or within the study area, and the need to have a reliable transportation network to support the development of these resources, an improved US 385 would serve as a direct route to regional trade centers further allowing Nebraska communities to gain economic benefits through the production and trade of these resources and through highway commercial businesses along the route. Indirect economic benefits would also be gained from the completion of the Heartland Expressway, through lower transportation costs and increased tourism (*Heartland Expressway Economic and Engineering Feasibility Study*, 1993, Executive Summary p. 9).

Natural Resources Tourism

While the Alliance area would benefit from construction of the Heartland Expressway, other entities in the larger region also depend on the Heartland Expressway for economic development. Some of the most popular tourism destinations in the region are the Black Hills National Forest, Jewel Cave National Monument, Badlands National Park, Mount Rushmore National Memorial, Crazy Horse Monument, Buffalo Gap National Grasslands, Minuteman Missile National Historic Site, Fort Robinson and Chadron State Parks, Wind Cave National Park, and the Wounded Knee National Historic Site. These resources are located within an area

of northwest Nebraska and southwest South Dakota, approximately 100 to 200 miles north of Alliance.

In addition, agencies such as FHWA, South Dakota Department of Transportation, Bureau of Indian Affairs, Oglala Sioux Tribe, US Forest Service, and National Park Service have developed plans that rely on the construction of the Heartland Expressway for their visitor and economic development assumptions, and to meet their stated missions (*General Management Plan / Environmental Impact Statement for Badlands National Park/North Unit in Jackson, Pennington, and Shannon Counties*, South Dakota [2006]; "Transportation Investments and Tourism Development at the Pine Ridge Indian Reservation" [2003]; <http://www.fhwa.dot.gov/planning/econdev/majorissues.html>, accessed 13 August 2014).

B.5 Purpose and Need Summary

The improved corridor is intended for the following purposes:

- To provide an improved north-south highway on a NHS High Priority Corridor that increases the efficiency and safety of travel
- To fulfill legislative intent of ISTEA and SAFETEA-LU
- To fulfill legislative intent of the Build Nebraska Act
- To address roadway and operational deficiencies

An additional project goal is:

- To improve the highway infrastructure in order to facilitate economic development

An improved roadway for the section of US 385, including the junction with L62A and extending to the City of Alliance, has been planned and designated as part of the Heartland Expressway, a High Priority Corridor on the NHS, for the past 20 years. The implementation of this project is consistent with the planning of the Heartland Expressway; the Nebraska Priority Commercial System; Federal highway legislation, including ISTEA, TEA-21, and SAFETEA-LU; and the Build Nebraska Act.

The need for the project, and the reason it is considered the next logical segment of the Heartland Expressway, is that (1) it has the highest traffic volumes, including high truck traffic; and (2) it traverses numerous short dunes requiring frequent climbs and turns resulting in a number of areas that do not meet AASHTO standards for speed limit and NDOR standards for grade.. The combination of traffic volumes and frequent climbs and turns results in decreased operational efficiency of this facility.

A new economic study conducted as part of the Heartland Expressway Corridor study shows that benefits of improvements to US 385 in Nebraska consisting of expansion to a four-lane facility would result in a benefit/cost ratio of at least 1.7 and an analysis of improving just the proposed Expressway component would have a benefit/ cost ratio of at least 1.2, indicating a positive impact on the regional economy. These types of improvements typically provide benefits that include travel time savings (which may occur as motorists experience reduced travel times), increased safety (which may occur as the number of accidents that take place on the corridor are reduced); and operating cost savings (that may occur as the distances driven by motorists are reduced).

Therefore, the project would provide an improved north-south access route in the western region of Nebraska, Colorado, and South Dakota, increasing safe and efficient travel, as well as the economic well-being of the region.

C. Conformance with Regulations and Land Use Plans

The first construction project, Alliance South, programmed in NDOR's five-year State Transportation Improvement Program (STIP), would construct US 385 from the junction of N-2 to approximately the Morrill-Box Butte county line. The second construction project, L62A North, also programmed in the STIP, would construct US 385 from approximately the Morrill-Box Butte county line to the junction of US 385 and L62A. The third construction project, currently not programmed because it is more than five years in the future, would construct the segment of highway connecting L62A to US 385 via the long sweeping curve. This project would also require reconstructing the south leg of US 385 to connect to the new sweeping curve.

While the project is not included in The Alliance Plan; the project is compatible with potential future changes in both transportation and land uses. **Chapter 4, Section B, Land Ownership, Jurisdiction, and Land Use**, discusses these in detail.

3. ALTERNATIVES

A. Background

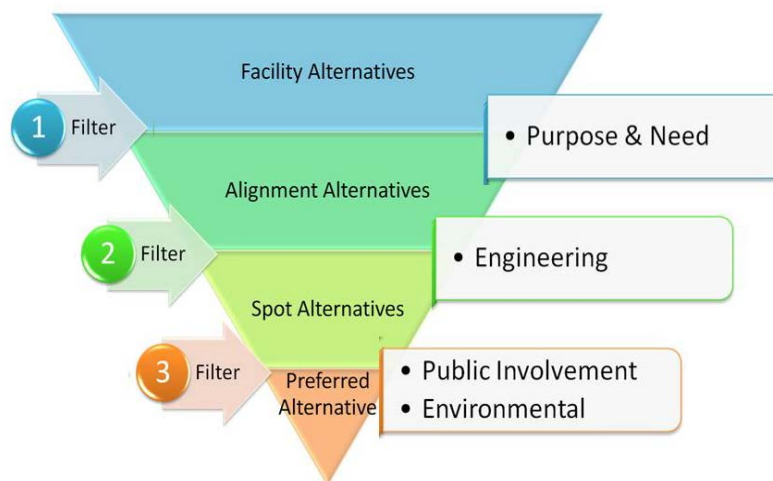
NEPA requires that reasonable alternatives, including the No Action or No-Build Alternative, be presented and evaluated. This chapter describes the process used to identify the range of alternatives considered and provides a detailed description of the alternatives carried forward in the document.

The Congressional Earmark for the Heartland Expressway corridor extends from Minatare to Alliance, and is made up of three smaller segments as discussed in **Section 2.B.1**. The segment from L62A to Alliance was selected as the first of the three segments to be constructed (of the corridor segments remaining to be improved) because this segment provides regional connectivity with the Nebraska Panhandle region, (by improving efficiency and safety of commerce and travel and further promoting economic development) in an area not served by a north-south expressway or a National Highway System facility. The north terminus of the project is within the City of Alliance because it is a regional economic hub in the Panhandle region and because this is where traffic splits at the junction with Nebraska Highway 2. The south terminus, at L62A, is the intersection junction where traffic volumes split—to the west to the City of Scottsbluff via L62A, another regional economic hub in the Panhandle; and to the south to I-80, the primary east-west transportation corridor in Nebraska.

For the alternatives screening process, the analysis first evaluated types of roadway facilities to determine if they would meet the project purpose and need, and project goal. Then alignment alternatives were evaluated for engineering feasibility and constructability issues. Finally, alternative alignments at certain locations were evaluated based on environmental impacts and public input as well as engineering considerations. **Figure 3.1** graphically shows how this process led to a preferred alternative.

Please note that the language of the Congressional Earmark specifically states that the facility is an Expressway, which is defined as a divided, limited-access highway; however other facility types are evaluated in the first step of the screening process.

Figure 3.1 – Alternative Selection Process



B. Facility Alternatives

Several types of highway facilities with different configurations were evaluated with regard to the project purpose and need, as well as the project goal. These configurations included:

- Super 2 Highway
- 2-Lane Highway with Climbing Lanes
- 2-Lane Highway with Auxiliary Turning Lanes
- 4-Lane Undivided Highway
- 4-Lane Divided Highway

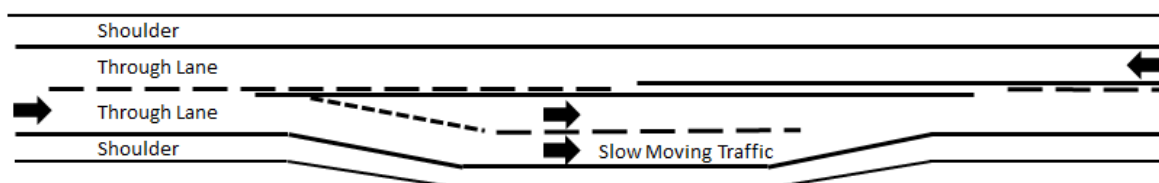
These alternatives were screened for support of the project purposes of (1) improving the highway to increase the efficiency and safety of commerce and travel as included in federal ISTEA legislation; (2) fulfilling the legislative intent of ISTEA and subsequent transportation acts; (3) fulfilling the legislative intent of the Build Nebraska Act; and (4) addressing roadway and operational deficiencies.

The alternatives were also screened for their support of the project goal of facilitating economic development by enhancing the efficiency and mobility of Nebraska Panhandle region commerce for residents, businesses, visitors, and interstate travel.

B.1 Super 2 Highway

This alternative would provide passing lanes along the project corridor. A Super 2 roadway would provide passing lanes along the project corridor at strategic locations. The purpose of passing lanes is to disperse platoons of vehicles behind slower moving vehicles such as trucks and farm equipment. **Figure 3.2** shows a typical passing lane. Two studies, FHWA/TX-02/4064-1, Design Guidelines for Passing Lanes on Two-Lane Roadways (Super 2), and FHWA/TX-11/0-6135-1, Operations and Safety of Super 2 Corridors With Higher Volumes, both performed by the Texas Transportation Institute, were referred to for guidance. These studies suggest that passing lanes are most appropriate below traffic volumes of 5,000 vehicles per day and that above 5,000 vehicles per day; performance and cost-effectiveness diminish to the point that a four-lane roadway is more advantageous. The 2036 anticipated design year, average daily traffic volume is 5,000 vehicles per day with approximately 19 percent trucks. Based on current peaks experienced during the beet and potato harvest season, the average daily traffic is anticipated to surpass 5,300 vehicles per day. Current traffic data show truck percentages nearly double during the fall harvests.

Figure 3.2 – Typical Passing Lane Layout



An analysis of this corridor indicated that the required passing lane density would approach 50 percent for maximum efficiency, but that the efficiency is still less than a four-lane roadway. Additional considerations are:

- On this corridor, with the approximately 50 percent density of passing lanes that would be required, the cost savings versus a four-lane roadway alternative diminishes significantly.
- On this corridor, with the approximately 50 percent density of passing lanes, as the density of the passing lanes increase, the in-out nature of the additional lanes violates driver expectancy.
- Vehicle conflict points at the ends of the passing lane increase without the added benefit of median separation of opposing traffic that is present with a four-lane roadway.
- The BNSF Railway parallels US 385 for approximately 19 miles along the corridor between Angora and Alliance. Within this area, the existing road would need to be widened to the west to construct the passing lanes due to the proximity of the BNSF Railway. Since the passing lane density is approximately 50 percent, and assuming a tail to tail passing lane configuration, the entire length of US 385 through this 19 miles would have a new lane added to form a three-lane roadway section. The center lane would be used for the passing lanes, alternating directions by segment. Based on typical practice in Nebraska, this configuration is believed to violate driver expectation.
- It is desirable to minimize conflicts with driveways and intersections in the transition sections of the passing lanes. There are over 60 field entrances or drives along the project, as well as 9 county roads, for a total of nearly 70 existing access points, where slow-moving vehicles can turn on or off the highway. Careful consideration must be given to placing passing lanes near horizontal and vertical curves to provide adequate sight distance and meet driver expectancy. A preliminary review of the plan and profile of the existing roadway indicates many conflicts among drives, intersections, and curves that would need to be resolved. This will lead to lengthening, shortening, and/or shifting of the passing lanes from their optimal positions.

Thus, this highway configuration would not meet the need for an improved highway that would provide efficient and safe travel without constructing the majority as a four-lane highway. Additionally, a Super 2 highway does not meet the legislative intent of ISTEA TEA-21, or SAFETEA-LU to construct an Expressway. In addition, traffic would be difficult to maintain in both directions for construction and future maintenance operations. For these reasons, the Super 2 alternative was eliminated from further consideration.

Results of Screening. This alternative was eliminated because it would not meet the purpose of addressing the roadway and operational deficiencies of this highway segment. Further, it did not meet the legislative intent to construct a 4-lane facility.

B.2 2-Lane Highway with Climbing Lanes

This alternative would provide passing lanes to disperse platoons of vehicles that build up behind vehicles that are slowed due to steep grades. This type of passing lane is typically called

a climbing lane. While the hills within the Sandhills portion of the project are very numerous, an analysis using standard NDOR and AASHTO Green Book methodology indicated that climbing lanes would not provide an effective solution because the hills are too short to cause enough speed reduction by the slower moving vehicles to warrant climbing lanes. In addition, this would also require construction and maintenance under lane closures for long durations, creating problems for maintaining traffic.

Results of Screening. This alternative was eliminated because it would not meet the purpose of addressing the roadway and operational deficiencies of this highway segment. Further, it did not meet the legislative intent to construct a 4-lane facility.

B.3 2-Lane Highway with Auxiliary Turn Lanes

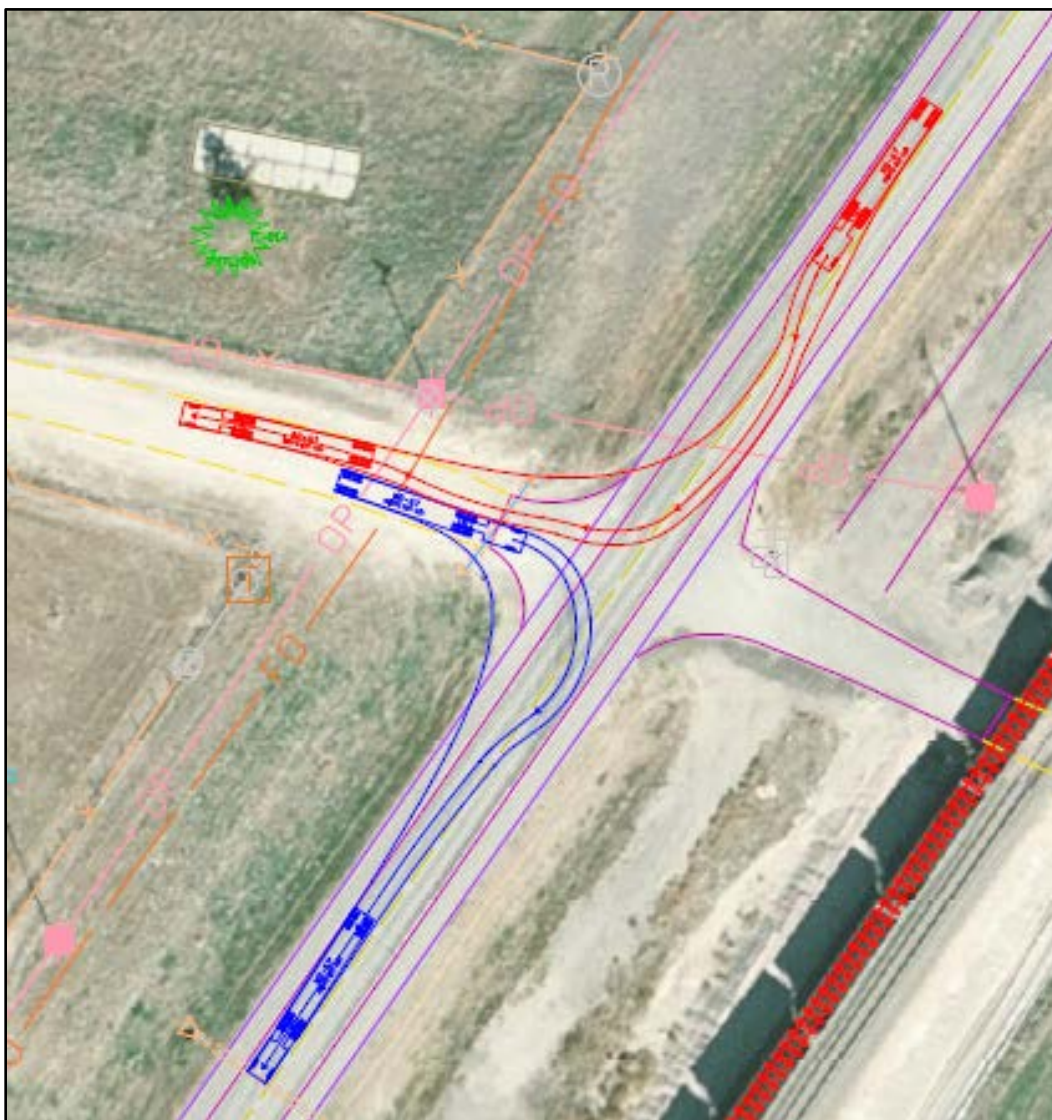
This alternative would construct auxiliary turn lanes at major intersections along the corridor. Turning vehicles currently encroach on opposing lanes to accomplish left and right turns. If turn lanes are not added at all of the facility access points, then large trucks would continue to encroach into oncoming traffic lanes in order to make a right turn. This is a potential hazard as vehicles heading in the opposite direction may not be able to stop in time to avoid a slow moving truck. The trucks that use US 385 are large, and many have “pup” trailers as well as semis. This photograph shows trucks hauling sugar beets on US 385 to a processing facility just north of the City of Alliance. Turning without running off the pavement can be challenging for these vehicles.



As an example of encroachment, **Figure 3.3** shows the theoretical movement of large trucks turning right into (red truck and path) and out of (blue truck and path) one of the facilities on US 385, the Dinklage Feedlot facility located south of the City of Alliance. Note that in each case, the truck must pull into the oncoming traffic lane to make the turn without running off the road. There are a total of 70 existing access points on the project. Providing right and left turn lanes at all of these locations would result in a four- or five-lane highway for large portions of the project alignment, and this alternative would need to be constructed and maintained with lane closures.

Results of Screening. This alternative was eliminated because it would not meet the purpose of addressing the roadway and operational deficiencies of this highway segment. Further, it did not meet the legislative intent to construct a 4-lane facility.

Figure 3.3 – Truck Right Turn Movement



B.4 4-Lane Undivided Highway

This alternative would provide two through lanes for traffic in each direction which would not be physically separated by a barrier or median. Passing would be internal to the thoroughfare and would not require cross over to oncoming traffic to pass a vehicle or slow-moving agricultural equipment. There is little to no reduction in crashes per kilometer, based on the Highway Safety Information Systems (HSIS) study on “Safety Effects of the Conversion of Rural Two-Lane Roadways to Four-Lane Roadways,” because the opposing traffic is not separated (<http://www.fhwa.dot.gov/publications/research/safety/humanfac/pdfs/99206.pdf>)

This alternative would not provide for the development of left turn lanes at access breaks, which are an important component of improving traffic flow, and decreasing potential for rear-end collisions. In addition, construction of the new lanes would need to match the existing roadway geometry and therefore, would not provide the improved geometry of a new divided roadway.

Results of Screening. While the 4-lane undivided highway meets legislative intent this alternative was eliminated because it would not meet the purpose of addressing the roadway and operational deficiencies of this highway segment. It would still require left-turning traffic to slow within the through lanes on the highway and does not allow for improved geometry,.

B.5 4-Lane Divided Highway (Preferred)

This alternative would provide 4-lane divided improvements the entire length of the project. The divided median could be raised or depressed. By definition, a divided highway is “a highway of four or more traffic lanes having two roadways with a median strip between them separating opposing traffic streams” (Merriam Webster 2014). A divided highway satisfies the “expressway” distinction, adds controlled access breaks and turning lanes, separates opposing traffic, provides a recovery area for out-of-control vehicles, provides a stopping area in case of emergencies, diminishes headlight glare, and provides width for future expansion. The HSIS study referenced previously notes a 40 to 60 percent reduction in crashes per kilometer when widening from a two-lane to a four-lane divided roadway. Additionally, the 4-lane divided cross-section is easier to construct because it allows the new lanes to be built while maintaining and not impacting existing traffic.

Results of Screening. Based on the above information and evaluations against the other alternatives, this alternative best addresses roadway and operational deficiencies of this highway segment and the project purpose of legislative intent to construct a 4-lane facility. Therefore, this is the Preferred Alternative carried forward.

B.6 Project Goal Analysis

Of importance to the project goal are findings of the original *Heartland Expressway Economic and Engineering Feasibility Study* conducted in 1993 (see **Section 2.B.4**). In addition, the analysis was updated as a *Technical Memorandum: Summary of the Benefit Cost Analysis for the Heartland Expressway Corridor in Nebraska*. The consultants conducting the updated economic study examined the 1993 results and indicated that they appear to be sound and that the final analysis using newer methodology results in an even higher Benefit to Cost ratio (**Table 3.1**). Note that the benefit/cost ratio for the Heartland Expressway improvements alone is 1.7 given a discount rate of 7 percent for inflation, and even higher if a discount rate reflecting an inflation rate of 3 percent is used. Thus, the project would have a substantial positive impact on the regional economy.

The new study assumed that all of the Heartland Expressway would be improved by *expansion to a four-lane facility*. These improvements typically provide benefits composed of travel time savings, increased safety; and operating cost savings, as detailed in the technical memoranda included in **Appendix A**.

Because the Technical Memorandum addressed the entire Heartland Expressway build-out, a further benefit to cost analysis was done for this project only (Olsson Associates, 2014). The results showed that even if only the L62A to Alliance segment was improved, there would still be a positive cost/benefit ratio. Using the two discount rates as discussed above, with a discount rate of 7 percent, this project would result in a benefit to cost ratio of 1.2, or a return of \$1.20 for

every dollar spent. With a lower discount rate of 3 percent, which has been more typical of the modern economy, the benefit to cost ratio would be 1.7, or a return of \$1.70 for every dollar spent.

Of the four alternatives, only the two 4-lane alternatives meet the project goal of economic development by providing benefits composed of travel time savings, increased safety; and operating cost savings. Only the 4-Lane Divided Alternative (Preferred) meets all the project purposes and is further supported by the project goal.

Table 3.1 – Summary of Benefit/Cost Analysis for Heartland Expressway

	7% Discount Rate				3% Discount Rate			
	Heartland Improvements	Heartland Improvements & Intensified Energy Resource Development	Entire PTP Improvements	Entire PTP Improvements & Intensified Energy Resource Development	Heartland Improvements	Heartland Improvements & Intensified Energy Resource Development	Entire PTP Improvements	Entire PTP Improvements & Intensified Energy Resource Development
Benefits								
Travel Time								
Existing Traffic	\$140.8	\$139.1	\$139.6	\$136.4	\$347.7	\$343.6	\$344.9	\$336.9
Diverted Traffic	\$1.0	\$1.0	\$25.4	\$23.1	\$2.5	\$2.4	\$62.7	\$57.1
Pavement Savings	\$0.4	\$0.4	\$0.4	\$0.4	\$1.1	\$1.1	\$1.1	\$1.0
Accident	\$94.8	\$94.8	\$94.8	\$94.8	\$226.7	\$226.7	\$226.7	\$226.7
Economic - Inventory Savings	\$215.4	\$215.4	\$215.4	\$215.4	\$532.1	\$532.1	\$532.1	\$532.1
Total	\$452.4	\$450.7	\$475.7	\$470.2	\$1,110.0	\$1,105.8	\$1,167.4	\$1,153.8
Costs								
Capital	\$224.1	\$224.1	\$224.1	\$224.1	\$361.8	\$361.8	\$361.8	\$361.8
M&O	\$16.3	\$16.3	\$16.3	\$16.3	\$40.2	\$40.2	\$40.2	\$40.2
Total	\$240.4	\$240.4	\$240.4	\$240.4	\$402.0	\$402.0	\$402.0	\$402.0
Benefit Cost Ratio	\$1.88	\$1.87	\$1.98	\$1.96	\$2.76	\$2.75	\$2.90	\$2.87

Note: This table provides benefits to costs for a variety of projects given two discount rates based on different inflation rates: 7% and 3%, which should encompass likely rates for the foreseeable future. Within each discount rate are calculated the benefit/ cost ratio for the improved Heartland Expressway, the Heartland Expressway with regional intensified energy resource development, the improved entire Ports-to-Plains Corridor, and the PTP corridor with intensified energy resource development. The bottom line shows the economic benefit for each dollar invested in the project.

Source: NDOR, Technical Memoranda for Heartland Expressway Corridor Development and Management Plan, 2013.

C. Alignment Alternatives

Three alignment alternatives were considered for widening the roadway:

- East Offset Alignment Alternative: Additional lanes to be located east of the existing roadway
- Centered on Existing Alignment Alternative: New roadway to be centered on the existing centerline
- West Offset Alignment Alternative (Preferred): Additional lanes to be located west of the existing roadway

Alignment alternatives were screened based on construction feasibility, operational impacts to the highway during construction, cost, social impacts, and environmental impacts.

C.1 East Offset Alignment Alternative

Alternatives that would add lanes on the east side of US 385 were eliminated from further consideration due to the proximity of the Burlington Northern Santa Fe (BNSF) Railway double mainline tracks that parallel existing US 385 for approximately 19 miles of the project. The BNSF mainline tracks are a major freight and coal hauling route for the railroad, currently carrying approximately 60 to 70 trains per day. For much of the project length, US 385 and BNSF share a common right-of-way (ROW) line, with no other property between them. The railroad proximity is an issue for approximately 16 miles of US 385 within the project limits, in that it shares a common ROW line with the highway. For these 16 miles, widening on the east side of US 385 would require shifting the railroad alignment and additional ROW to maintain the railroad's required 50-foot ROW on each side of the tracks. The cost of ROW and shifting the railroad's alignment would be in the multimillions of dollars for the length needed. Given the high train volume on this mainline, relocating tracks would have to be done in small windows of time in order to minimally disrupt rail traffic, increasing time and expense still further.

Results of Screening. Based on the screening criteria of engineering feasibility and constructability, the East Alignment Alternative was not considered feasible.

C.2 Centered on Existing Alignment Alternative

An alternative centered on the existing centerline would require complicated construction phasing, costly temporary pavement or closing large segments of at least one lane during construction, and more time to construct. Lane closure was not considered feasible for the volume of traffic on this roadway and the lack of suitable detour routes. Due to the sparse nature of suitable traffic routes in this area, a detour around the proposed project to the nearest federal or state highway system would require a trip of approximately 107 miles in length to get from Alliance to the Junction of L62A, or 80 additional miles travelled. Furthermore, this detour route would require improvements to a total of approximately 68 miles of N-2 and N-17 connecting Alliance to Scottsbluff, as these two-lane rural roads have narrow, unpaved shoulders and would need upgrading to meet FHWA detour requirements. Detouring traffic during construction is considered unreasonable. In addition, this alternative would have substantial impacts on railroad ROW, potential relocations of the BNSF mainline tracks, and disruption of rail operation

Results of Screening. Based on the screening criteria of engineering feasibility and constructability, the alternative was not considered feasible.

C.3 West Offset Alignment Alternative (Preferred)

The West Offset Alignment avoids the complications and expenses associated with the East Offset and Centered Alternatives. It allows for phased construction without a detour, avoids the railroad ROW, and has fewer relocations.

Results of Screening. The West Offset Alignment alternative best addresses the screening criteria of engineering feasibility and constructability, and was carried forward for further evaluation.

D. Spot Design Alignment Alternatives

Several location-specific design alternatives were considered to minimize impacts along the West Offset Alignment. Locations were identified where potential impacts to social, economic, or natural environmental resources might be minimized, or for which public input was desired. These locations included:

- Junction of US 385 and L62A
- Unincorporated community of Angora
- Dinklage Feedlot
- City of Alliance

D.1 Junction of US 385 with L62A Design Alternatives

The Heartland Expressway route follows L62A and then continues north along US 385. Currently, US 385 is the through movement (free traffic flow from Bridgeport to Alliance), with L62A teeing into US 385 (with a stop sign for eastbound left-turning traffic). Currently more traffic moves in this direction (55 percent vs. 45 percent continuing on US 385) and this is anticipated to increase as the Heartland Expressway is built out.

Alternatives were developed to make the Heartland Expressway the priority through movement (free traffic flow between Bayard and Alliance), with US 385 to be the secondary movement (with a stop sign for traffic from Bridgeport to Alliance). **Figure 3.4** shows the three sweeping curve alternatives considered at the junction of L62A and US 385; these are identified as:

- Alternative 1: Large Sweeping Curve (Preferred)
- Alternative 2: Mid Sweeping Curve
- Alternative 3: Small Sweeping Curve

Alternative 1: Large Sweeping Curve (Preferred). The Large Sweeping Curve realignment would start on L62A near Mile Marker (MM) 7.00 and with a gradual curve ties back into existing US 385 near MM 86.50. This curve alignment would result in the best option for creating the eventual full build-out of the Heartland Expressway, which would continue west on L62A. This alternative allow for the most preferred geometry and most direct/shortest path of the three alternatives, which would benefit drivers. In addition, although it requires the most ROW, it would be most beneficial to potential black footed ferret habitat, by minimizing the existing roadway barrier between fairly large areas of prairie dog towns.

Results of Screening. Based on environmental impacts and public comments, as well as benefits to drivers, this alternative was carried forward as the Preferred Alternative. NDOR is committed to building the Large Sweeping Curve phase of the project when funding is available. This construction phase of the project would be considered in the second round of the Build Nebraska Act projects. In the interim, the project construction would include an interim build-out (**Figure 3.5**).

Figure 3.4 – Alignment Alternatives at L62A (Alternatives 1–3) and at Angora (Alternatives 4–6)

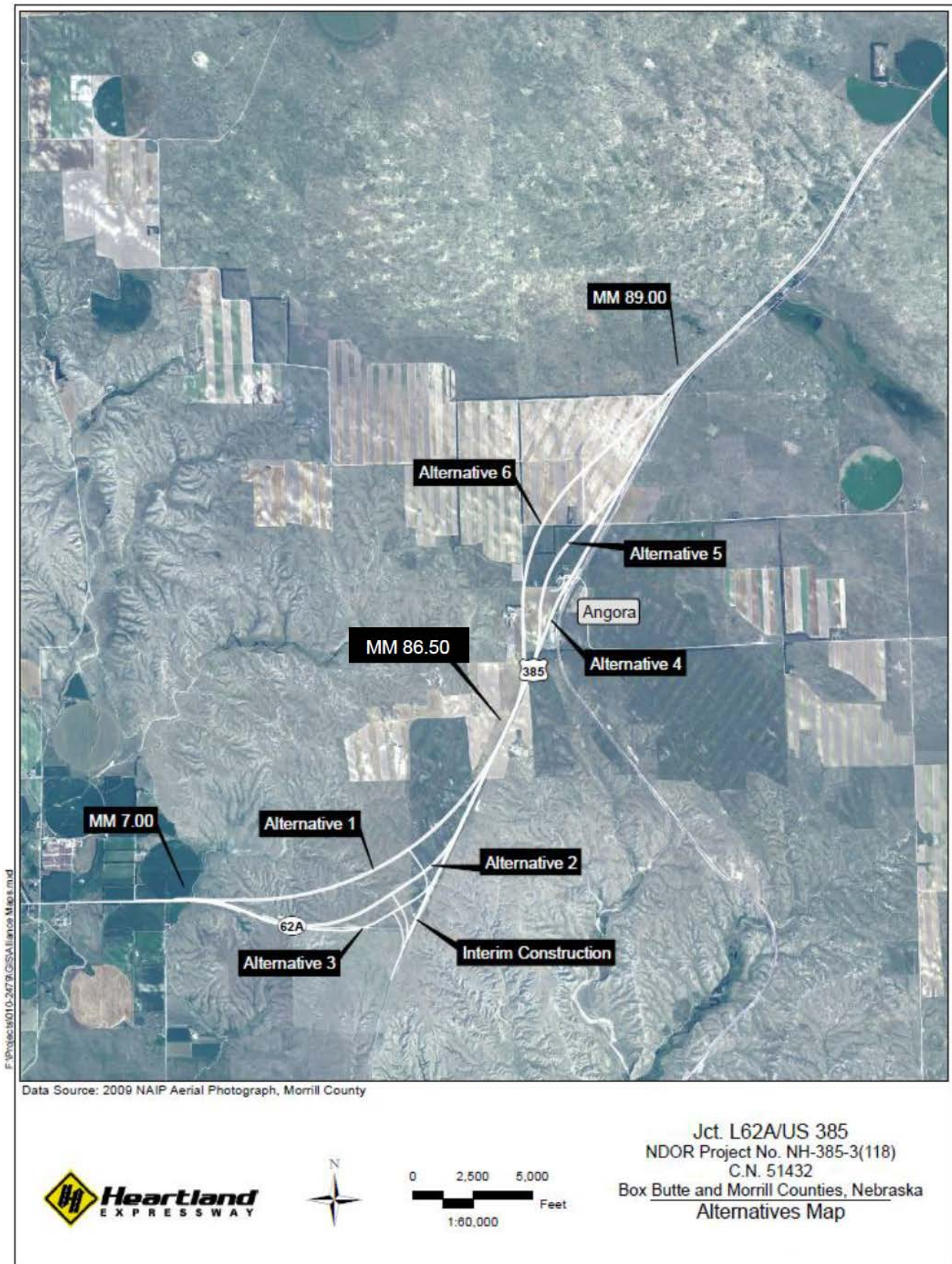
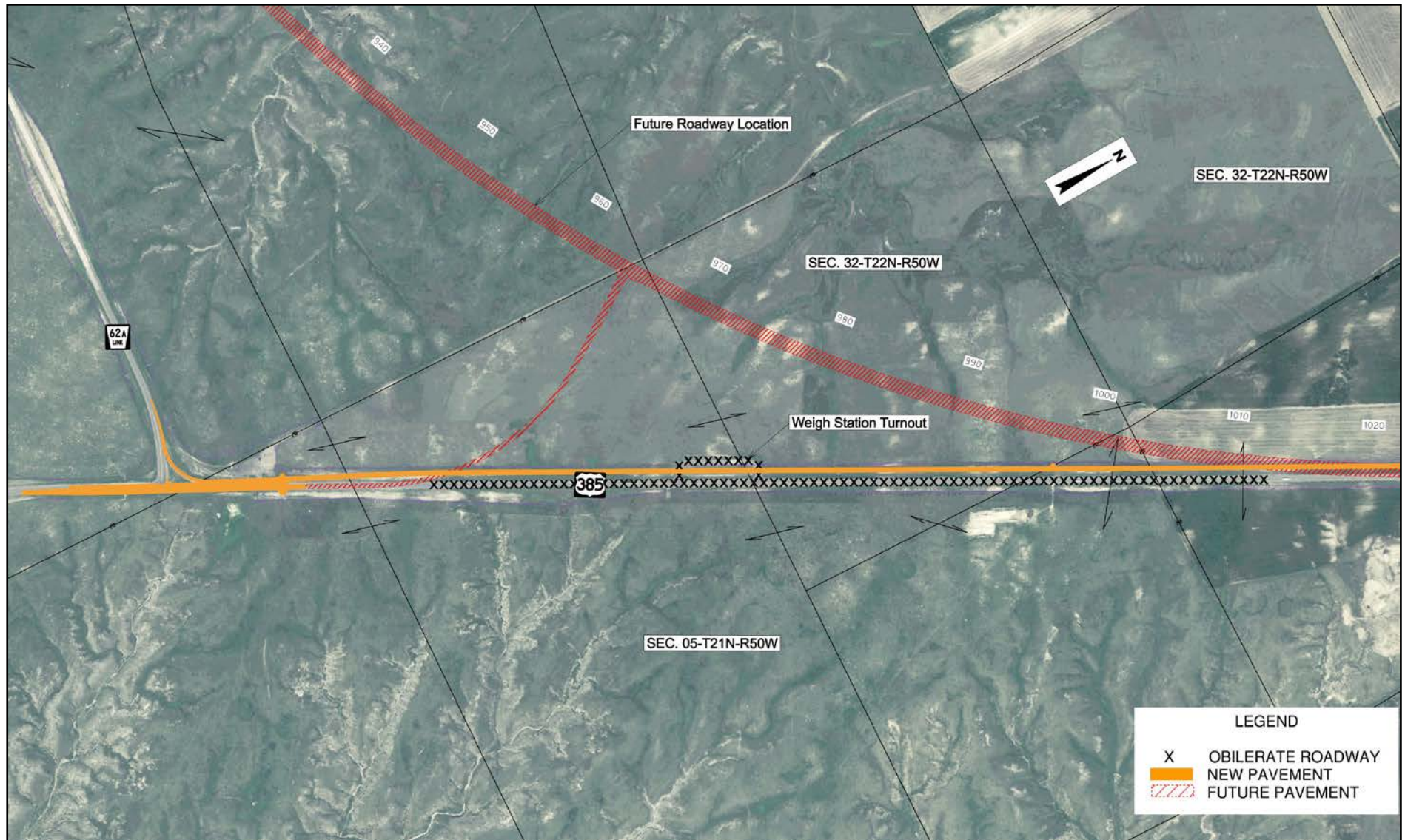


Figure 3.5 – Interim Phase Build Out at Junction L62A/US 385



Alternative 2: Mid Sweeping Curve. The Mid Sweeping Curve realignment would start on L62A near Mile Marker (MM) 7.00, with a gradual curve, continue with a straight section through the junction, and tie back into existing US 385 with a similar gradual curve near MM 86.00. The realignment would be just under 2 miles long and cut through some large hills and ravines, resulting in cuts and fills of 40 feet or more. Drainage structures would be installed as needed. Intercepting dikes and drop pipes would likely be required to collect overland flow and prevent it from eroding the backslopes. This alternative would also realign US 385 South to tee into the new highway. The realignment would start just south of the existing junction and would be approximately 2,500 feet long. An auxiliary left-turn lane would be constructed at the intersection.

Results of Screening. Based on environmental impacts and public comments, Alternative 2: Mid Sweeping Curve was eliminated in the preliminary screening for the following reasons:

1. Lack of Public Support: Had little to no public support at the public meeting held on 3 May 2011.
2. Potential Black-Footed Ferret Habitat Impacts: Has the largest ROW impact on prairie dog colonies, which are potential habitat for the Federal and State listed endangered black-footed ferret. Less Preferable Horizontal Geometry: Results in a short segment with back to back curves (reverse curvature), which is undesirable because it is contrary to what most drivers expect for a new highway facility.
3. Less Preferable Cross-Slope Geometry: NDOR preferred an alignment that would minimize banking (one edge of road slopes down to the other, also known as superelevation) to minimize snow melting and refreezing across the driving lanes in the winter.
4. Longer Travel Path: Has a longer travel path than that of Alternative 1, Large Sweeping Curve.

Alternative 3: Small Sweeping Curve. The Small Sweeping Curve realignment would start on L62A at MM 7.00, with a relatively tight curve, continue with a straight section through the proposed junction, and tie back into existing US 385 with a tight curve near MM 85.50. The realignment would be approximately 1 mile long and would cut through fewer large hills and ravines than the mid or large curves, resulting in minimal cuts and fills of 40 feet or more. Drainage structures would be installed as needed.

This alternative would also realign US 385 South to tee into the new highway. The realignment would begin just south of the existing junction and would be approximately 1,900 feet long. An auxiliary left-turn lane would be constructed at the intersection.

Results of Screening. Based on environmental impacts and public comments, Alternative 3: Small Sweeping Curve was eliminated in the preliminary screening for the following reasons:

1. **Black-Footed Ferret Habitat Impacts:** Has large ROW impacts on prairie dog colonies, which are potential habitat for the Federal and State listed endangered black-footed ferret. **Less Preferable Horizontal Geometry:** Results in a short segment with back to back curves (reverse curvature), which is undesirable because it is contrary to what most drivers would expect for a new highway facility.
2. **Less Preferable Cross-Slope Geometry:** NDOR preferred an alignment that would minimize banking (one edge of road slopes down to the other, also known as superelevation) to minimize snow melting and refreezing the driving lanes in winter across.
3. **Longer Travel Path:** Has a longer travel path than that of Alternatives 1 or 2.
4. **Utility Impacts:** Has the greatest number of impacts on existing utility infrastructure, including an additional 7,500 feet of overhead power lines and 1,200 feet of fiber optic lines, which would require relocation.

Table 3.2 summarizes the comparison of the design alternatives for the Junction L62A/US 385 intersection

Table 3.2 – Comparison of Design Alternatives for the L62A/US 385 Intersection

Evaluation Factors	Alternative 1 Large Sweeping Curve	Alternative 2 Mid Sweeping Curve	Alternative 3 Small Sweeping Curve
Projected Property Impacts			
Right-of-Way - Acres Acquired*	138	75	55
Number of Farms/Properties Impacted	7	5	5
Environmental Impacts			
Acres of Grasslands within footprint that are occupied by prairie dogs	9.6	26.3	25.2
Acres of Rocky Ravines within footprint	37.4	3.8	3
Acres of Prairie Dog Colony outside of footprint to be reconnected with the main colony located south of L62A	62	34	10
Land Use Compatibility	Reasonable	Reasonable	Reasonable
Drainage / Runoff Impacts	7 Major Crossings	2 Major Crossings	1 Major Crossing
Local Support			
Supported by Local Community- (Comment Sheets)	Moderate	Less	Moderate
Traffic/Access			
Directional Access to Properties	Some Properties Split; May Use Ext. Roadway for Access	Most Existing Access Points Maintained	Existing Access Points Maintained
Context Sensitive Design- (Need to Adjust Speeds, Superelevation)	DS=65mph for Realigned 385, Reverse 2%	DS=65mph for Realigned 385, 3.5% Super	DS=65mph for Realigned 385, 5.3% Super
Safety			
Potential for Rear-end Conflicts	Realigned 385 - Deceleration Length Reduced Due to Stop Control Intersection	Realigned 385 Deceleration within Horizontal Curve	Realigned 385 Deceleration within Horizontal Curve
Potential for Left Turn Conflicts	Ample Sight Distance Provided at Intersection on Curve	Ample Sight Distance Provided at Intersection on Tangent	Ample Sight Distance Provided at Intersection on Tangent
Construction			
Utility Impacts	1.4 mi of OHP & 2.0 mi FO	2.6 mi of OHP & 1.2 mi FO	2.9 mi of OHP & 1.5 mi FO
Construction Phasing	Majority New Alignment, May Require Interim Build	Split Between New and Existing Alignment	Majority on Existing Alignment
Earthwork - Cubic Yards of Material	1,666,000 CY	950,000 CY	770,000 CY
Construction Cost (Millions) ‡	\$15.31	\$12.87	\$10.84
Evaluation Summary	Advantages: <ul style="list-style-type: none"> • Most acres of Prairie Dog habitat integration • Can be built with reverse 2% crown Disadvantages: <ul style="list-style-type: none"> • Greatest ROW acquisition • Highest construction cost 	Advantages: <ul style="list-style-type: none"> • Less acres of rocky ravines Disadvantages: <ul style="list-style-type: none"> • Superelevation of 3.5% • Greatest acres of ROW with Prairie Dogs 	Advantages: <ul style="list-style-type: none"> • Least ROW acquisition • Lowest construction cost Disadvantages: <ul style="list-style-type: none"> • Superelevation of 5.3% • Greatest acres of ROW with Prairie Dogs • Least acres of rocky ravines
Alternative Selection	Yes	No	No
* ROW Acquired is calculated by adding 10% to area of roadway footprint outside of existing ROW.			
‡ Includes 4-lane construction and Interim construction. Pavement Area @ \$50/SY			

D.2 Angora Design Alternatives

The Heartland Expressway route extends along US 385 through the unincorporated community of Angora. Widening centered on the existing alignment would result in impacts on various structures adjacent to the existing highway. In addition, there are several existing access points along the highway in this area. Therefore, alternatives were developed that shifted off alignment in an attempt to minimize impacts and reduce access points. **Figure 3.4** shows the three Angora alternatives that were considered; these identified as:

- Alternative 4: Angora East Alternative (Preferred)
- Alternative 5: Angora Middle Alternative
- Alternative 6: Angora West Alternative

Alternative 4: Angora East Alternative (Preferred). This Angora East Alternative keeps the improvements on the existing alignment, with widening to the west of the existing alignment as is proposed elsewhere. It would require the relocation of County Road 118 on the west leg, to reduce the number of access points along US 385. This alignment is preferred as it requires the least ROW and does not split existing properties or county roads, and provides more direct access to the highway. The existing CR 118 is disjointed by US-385 and requires users to travel on US-385 for approximately 500 feet to continue on the county road. Two alternative county road alignments were reviewed to reduce the number of access points along US-385. These included realigning the west leg and realigning the east leg of CR 118. The west leg was chosen for realignment because the existing structures were already being impacted by the highway widening, and the east leg had the existing at-grade railroad crossing. The east leg was chosen to remain because of the existing at-grade railroad crossing. Realigning the east leg would require obtaining a new crossing on a double track mainline, which is significantly more difficult, and the trains stopped on the existing spur line that services the grain facility could block the crossing on occasion. This alternative was preferred when presented at the public information meeting.

Results of Screening. Based on the screening criteria of environmental impacts and public comments, as well as the reduced ROW and county road impacts, the use of the existing highway lanes, and public preference, this is the Preferred Alternative and was carried forward for further analysis.

Alternative 5: Angora Middle Alternative. The Angora Middle Alternative would locate the highway on a new alignment to the west of Angora. This alternative would come off the alignment just north of County Road (CR) 95 near MM 87.00, splitting between existing US 385 and CR 95. Horizontal curves would be used to navigate along the west side of Angora and to tie back into US 385 approximately 1 mile north of Angora near MM 88.50. This alternative would also realign CR 120 to form a perpendicular intersection.

Results of Screening. Based on the screening criteria of environmental impacts and public comments, the Alternative 5: Angora Middle Alternative was eliminated for the following reasons:

1. Lack of Public Support: There was less support for this alternative at the public meeting held on 3 May 2011.
2. Right-of-Way Impacts: Requires substantially more ROW than Alternative 4: Angora East Alternative, but is less than Alternative 6: Angora West Alternative, and would sever several properties.
3. Connectivity to the System: Properties that currently have direct access to the highway would have longer, indirect access in the future. Additional access points would be required to service adjacent properties.
4. Initial Construction Costs: Requires higher initial construction costs to build full roadway section on new alignment.

Alternative 6: Angora West Alternative. The Angora West Alternative would locate the expressway on new alignment to the west of Angora. This alternative would come off the alignment just south of CR 95 near MM 87.00, using portions of CR 95. Horizontal curves would be used to navigate along the western fringe of Angora and then to tie back into US 385 approximately 2 miles north of Angora near MM 89.50. This alternative would also realign CR 120 to form a perpendicular intersection.

Results of Screening. Based on the screening criteria of environmental impacts and public comments, the Alternative 6: Angora West Alternative was eliminated in the preliminary screening, and prior to being shown to the public, for the following reasons:

1. Project Proponent Dismissal: NDOR eliminated prior to public meeting due to higher ROW and initial construction costs.
2. Right-of-Way Impacts: Requires substantially more ROW than that of Alternative 4: Angora East, would sever several properties, and have potential impacts on cemetery property.
3. Connectivity to the System: Properties that currently have direct access to the highway would have longer, indirect access in the future. Additional access points would be required to service adjacent properties.
4. Initial Construction Costs: Requires higher initial construction costs to build full roadway section on new alignment.

Table 3.3 summarizes the comparison of the design alternatives at Angora.

Table 3.3 – Comparison of Design Alternatives at Angora

Evaluation Factors	Alternative 4 Angora East Alignment Existing Hwy	Alternative 5 Angora Middle Alignment Split Hwy and County Rd 95	Alternative 6 Angora West Alignment Along County Rd 95
Projected Property Impacts			
Right-of-Way - Acres Acquired	31	55	94
Number of Farms/Properties Impacted	8	7	7
Environmental Impacts			
Acres of Shortgrass Prairie within Footprint	10.7	20.1	23.4
Acres of Non-irrigated Cropland within Footprint	16.1	29.4	66.5
Swift Fox: Are there gently rolling to level intact grasslands with vegetation less than 6 inches in height, and outside of densely populated areas?	Yes	Yes	Yes
Archeological Resources	No resources found	No resources found	No resources found
Standing Structure Resources	12	3	None
Land Use Compatibility	Reasonable	Splits Several Properties	Splits Several Properties; Closer to Cemetery
Noise Impacts (Closest Receptors)	Shifts Closer	Closer to New Receptors	Closer to Cemetery
Local Support			
Supported by Local Community- (Comment Sheets)	Greatest	Least	Not Presented to Public
Traffic/Access			
Directional Access to Properties	Consolidates Access Points for County Rd 118	Realignment of County Rd 120	Realignment of County Rd 120, Utilizes County Rd 95
Negotiating Right Turn Maneuvers	Comparable	Comparable	Comparable
Construction			
Utility Impacts	FO & Minor OHP	Minor OHP	Minor OHP
Construction Phasing	Offset on Existing	New Alignment	New Alignment
Earthwork - Cubic Yards of Material	146,100 CY	324,700 CY	923,500 CY
Construction Cost (Millions) ‡	\$5.27	\$5.49	\$5.60
Evaluation Summary	Advantages: <ul style="list-style-type: none"> • Least ROW impacts • Least construction cost • Most public support Disadvantages: <ul style="list-style-type: none"> • Realignment of County Rd 118 	Advantages: <ul style="list-style-type: none"> • Less ROW impacts • Good separation of intersections Disadvantages: <ul style="list-style-type: none"> • Splits several properties • Closer to noise receptors • Least public support 	Advantages: <ul style="list-style-type: none"> • Good separation of intersections Disadvantages: <ul style="list-style-type: none"> • Greatest ROW impacts • Greatest construction costs • Splits several properties • Closer to cemetery
Alternative Selection	Yes	No	No
* ROW Acquired is calculated by adding 10% to area of roadway footprint outside of existing ROW ‡ Includes 4-lane construction and Interim construction. Pavement Area @ \$50/SY			

D.3 Dinklage Feedlot Design Alternatives

The Dinklage Feedlot sits adjacent to US 385 along the west side of the highway between approximately MM 104.00 and MM 105.00. During the preliminary design, it was determined if the widening of US 385 would have an impact on the individual cattle pens, the feedlot operation would be required to relocate the cattle pens and waste lagoons elsewhere on the property. The topography of the feedlot property (with the lowest elevations located adjacent to US 385) would make relocation of the waste lagoons difficult and expensive due to drainage and create operation permit issues for the feedlot. Because of this, alternatives were developed to eliminate impacts to the individual cattle pens and waste lagoons. **Figure 3.6.** shows the two Feedlot alternatives that were considered. These are identified as:

- Alternative 7: Dinklage Feedlot West: Widening the highway to the west (as elsewhere).
- Alternative 8: Dinklage Feedlot Shifted (Preferred): Shifting the highway 30 feet east.

Alternative 7: Dinklage Feedlot West. This alternative would be consistent with the overall West Alignment Alternative; the existing highway would become the new northbound lanes and new southbound lanes would be constructed to the west of the existing lanes while separated by a 40-foot median.

The grading limits required for this alternative would encroach into the cattle pens and waste lagoons. This would require purchasing up to a 40-foot strip of property from the feedlot and relocating several cattle pens and waste lagoons. The relocation of the cattle pens would require a severe change in operations and would affect the existing regulatory permits that the facility has in place.

Results of Screening. Based on the screening criteria of environmental impacts and public comments, and given the severity of the impacts to the facility and operations, this alternative was eliminated from further consideration.

Alternative 8: Dinklage Feedlot Shifted (Preferred): The existing highway alignment in the immediate vicinity of the feedlot gently pulls away from the Railroad alignment to provide an additional 30 feet of separation from the Railroad tracks. This additional 30 feet is currently highway ROW. By shifting the highway alignment to utilize these 30 feet of existing ROW, approximately 30 feet to the east, the impacts to the cattle pens and lagoons are eliminated without any additional impacts to the Railroad. Further, the backslope of the roadside ditch would be steepened from a 4:1 to a 3:1. This increases the buffer distance between the back of slope and feedlot pens. This alternative would completely avoid impacts to the feedlot pens and the feedlot lagoons, and is the preferred alternative. Additional ROW would still be required from the property owner, but not in the areas of the feedlot pens. The additional ROW would be south and north of the feedlot operation.

Results of Screening. Based on the screening criteria of environmental impacts and public comments, including the lack of impacts to the cattle pens and the waste lagoons, this was the Preferred Alternative and would be carried forward. **Table 3.4** summarizes the comparison of the design alternatives at the Dinklage Feedlot.

Figure 3.6 – Dinklage Feedlot Alternatives Location Map

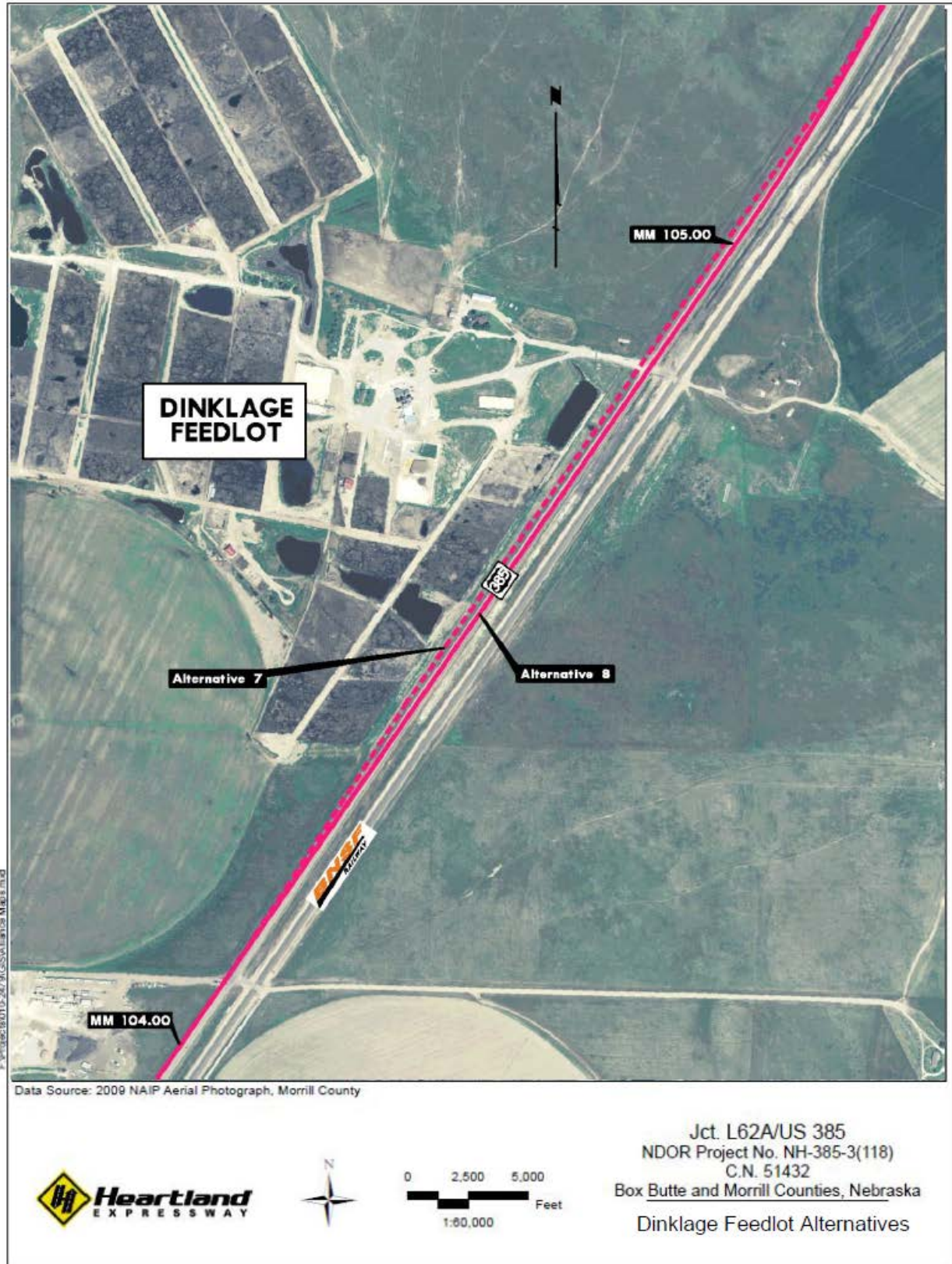


Table 3.4 – Comparison of Design Alternatives at the Dinklage Feedlot

Evaluation Factors	Alternative 7 Feedlot Existing Alignment	Alternative 8 Feedlot Shifted Alignment
Projected Property Impacts		
Right-of-Way - Acres Acquired	5.5	2.4
Number of Feedlot Pens Impacted	5 - 8	0
Environmental Impacts		
Swift Fox: Are there gently rolling to level intact grasslands with vegetation less than 6 inches in height, and outside of densely populated areas?	Yes	Yes
Noise Impacts (Closest Receptors)	Shifts Closer to Feedlot	Shifts Away from feedlot
Local Support		
Supported by Local Community- (Comment Sheets)	No	Yes
Construction		
Utility Impacts 1976+00 - 1981+00	Minor OHP Gasline	Minor OHP
Construction Phasing	Offset on Existing	Will require additional Phasing
Earthwork - Cubic Yards of Material	83,800 CY	62,200 CY
Construction Cost (Millions)	\$2.37 ‡	\$2.68
Evaluation Summary	Advantages: <ul style="list-style-type: none"> • Maintains current alignment • Least construction phasing Disadvantages: <ul style="list-style-type: none"> • Would impact feed lot • Greater ROW impacts • Potential mitigation for feed lot lagoon 	Advantages: <ul style="list-style-type: none"> • Would avoid impacts to adjacent feed lot • Less ROW impacts • Greater public support Disadvantages: <ul style="list-style-type: none"> • Higher construction cost • Would require greater construction phasing
Alternative Selection	No	Yes
* ROW Acquired is calculated by adding 10% to area of roadway footprint outside of existing ROW. ‡ Does not include the cost of Pen impacts and cost associated with relocating the Pens.		

D.4 Alliance Design Alternatives

As US 385 approaches the west side of the City of Alliance from the south, the surrounding context changes from rural to more of an urban setting, particularly along the east side of the highway. The posted speed limit decreases from 65 mph to 45 mph. Access points to private driveways and businesses would increase substantially, as well as the number of intersecting public streets. Because of this, five alternatives were developed and evaluated to determine a preferred alternative. **Figure 3.7** shows the general area for the five Alliance roadway alternatives that were considered. The alternatives are too close together to show on this figure; instead see **Figures 3.8 and 3.9** for lane configurations. The alternatives are:

- Alternative 9: Five-Lane with Two-Way Left Turn Lane (TWLTL)
- Alternative 10: Four-Lane Divided Roadway with Raised Median
- Alternative 11: Four-Lane Divided Roadway with Depressed Median
- Alternative 12: Offset Four-Lane Divided Roadway with Raised Median
- Alternative 13: Offset Four-Lane Divided Roadway with Depressed Median

Figure 3.7 – Alliance Alternatives Location Map (Overview)

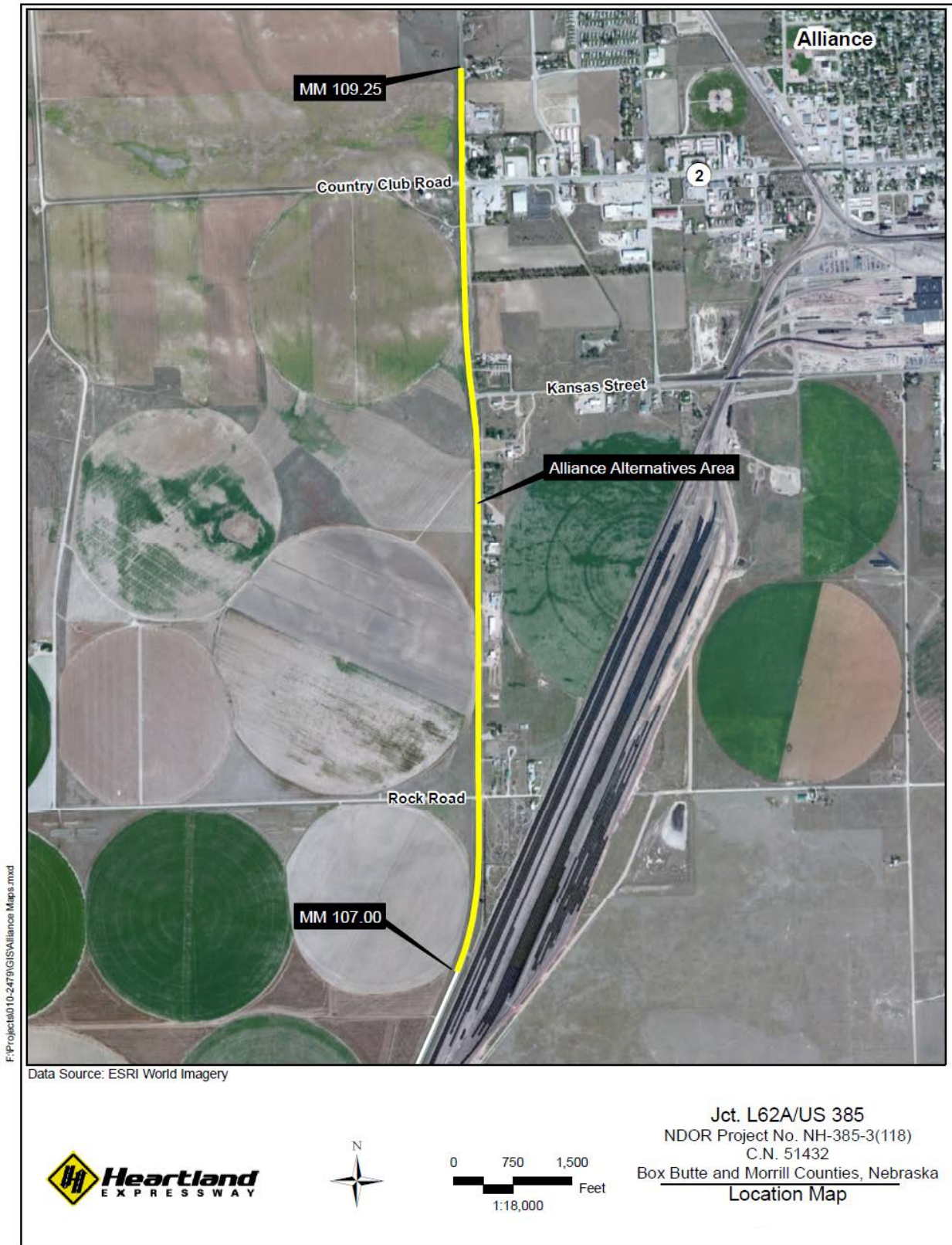


Figure 3.8 – Alliance Alternatives Location Map (Detailed)

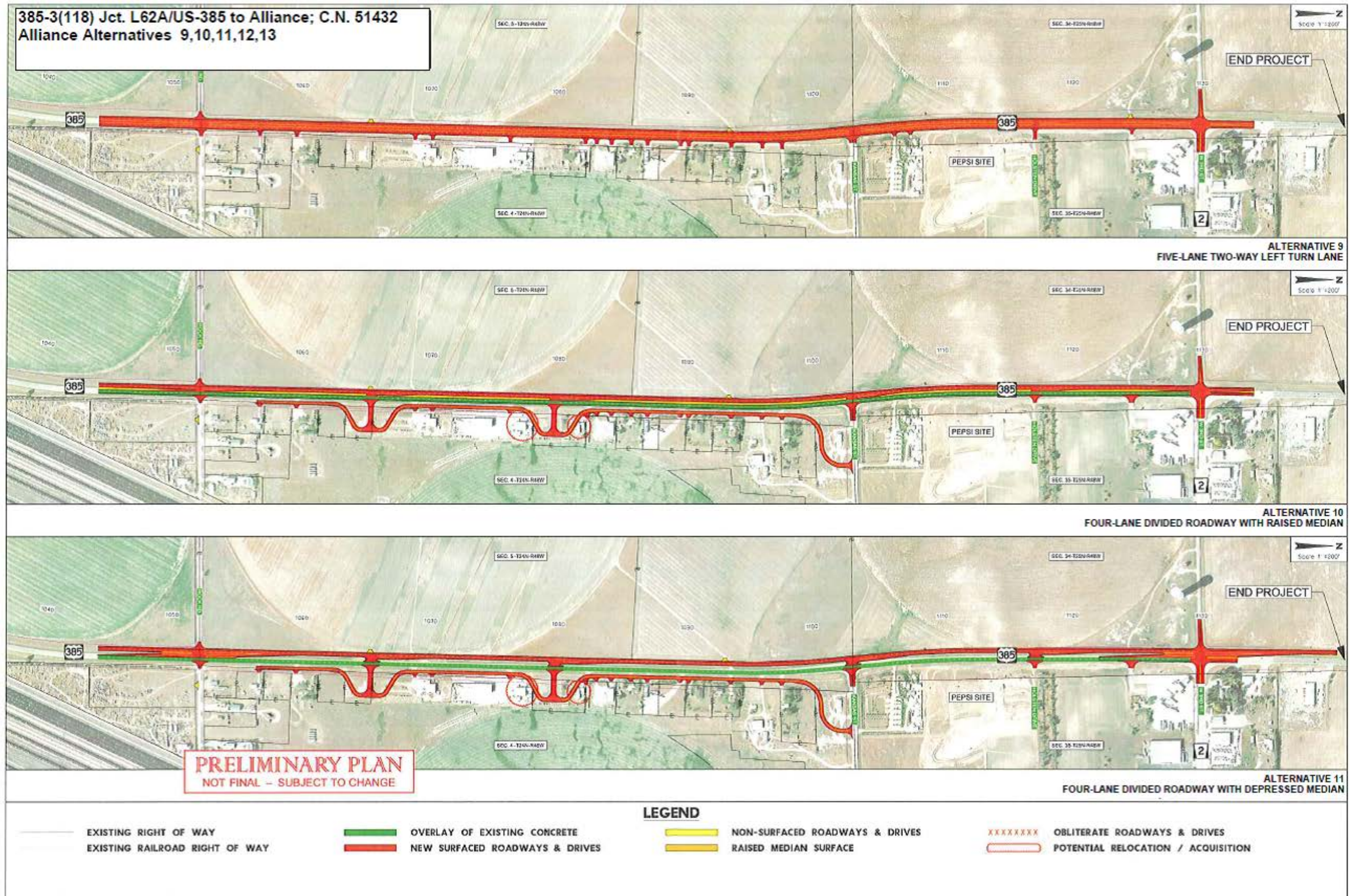
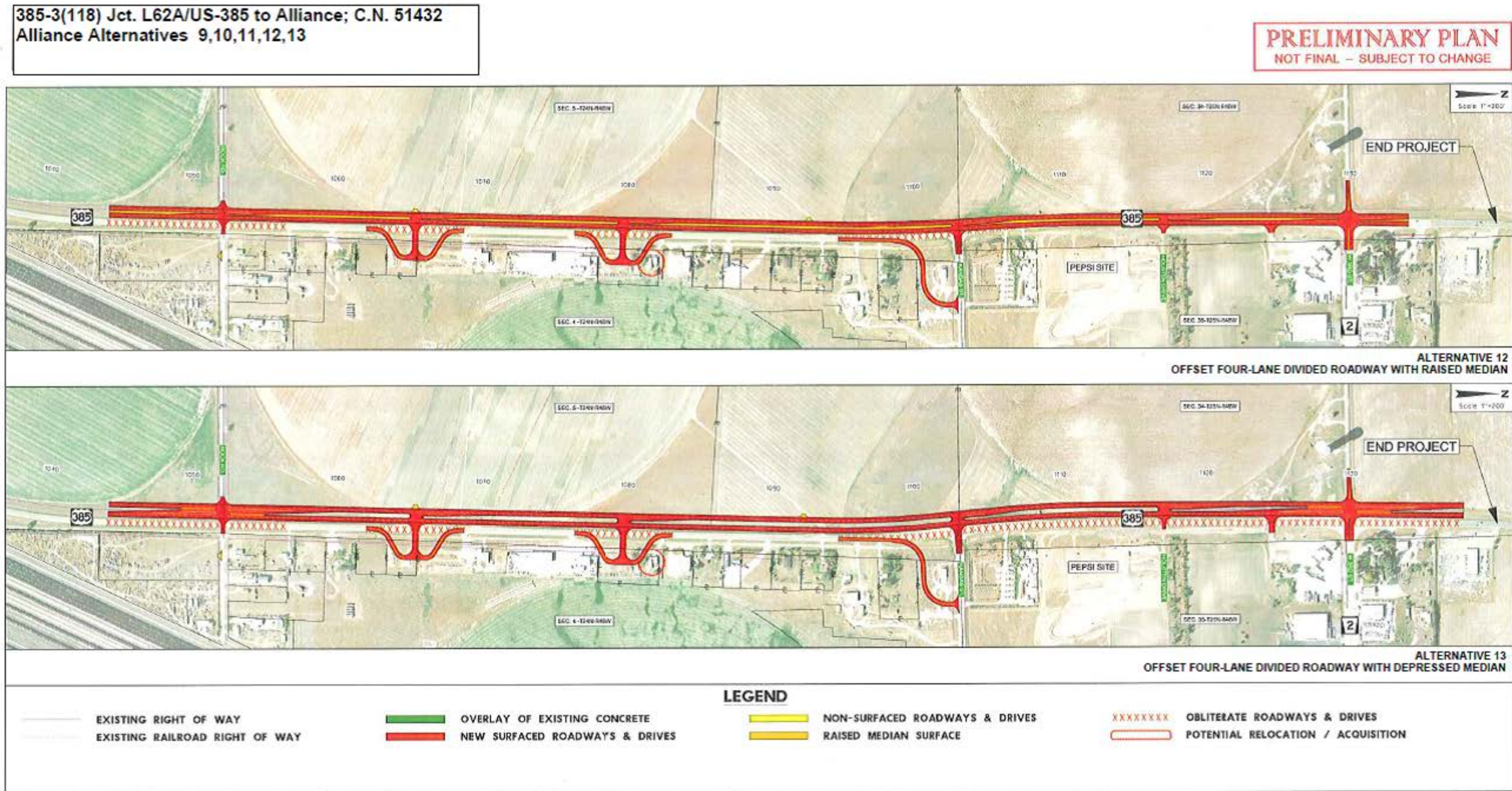


Figure 3.9 – Alliance Alternatives Location Map (Detailed)

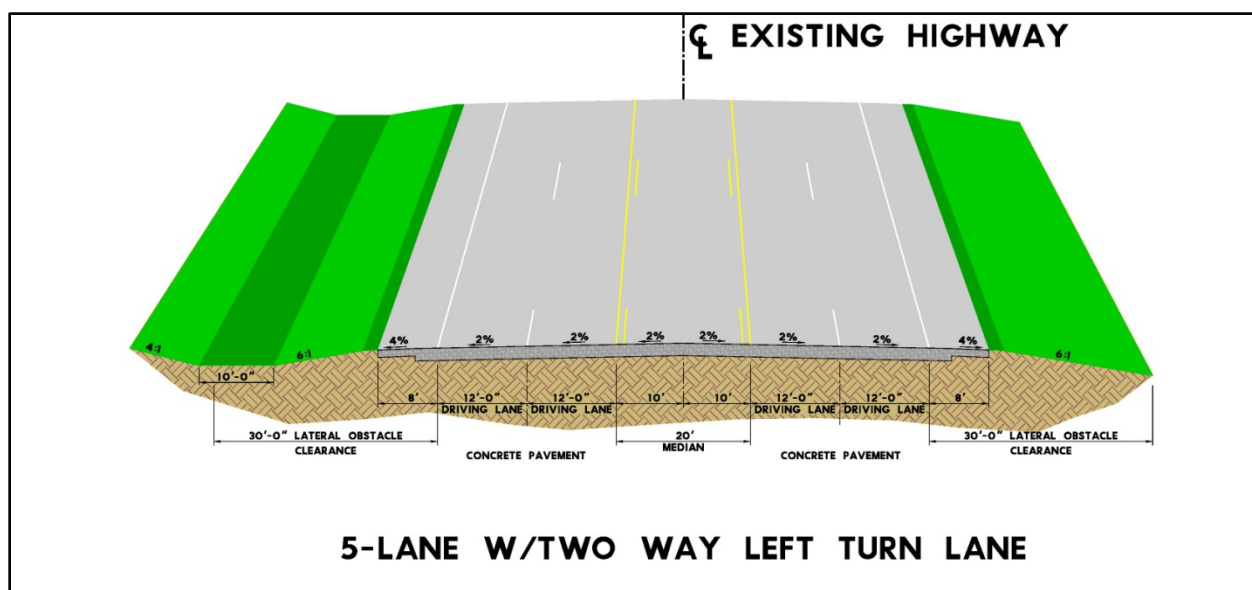


Alternative 9: Five-Lane with Two-Way Left Turn Lane (TWLTL) (Preferred Alternative):

The Five-Lane with TWLTL would consist of constructing a new five-lane roadway centered on the existing alignment (**Figure 3.10**). This alternative would provide a TWLTL from Rock Road through the junction with N-2 (West 3rd Street). The TWLTL would provide left-turn lanes for northbound and southbound traffic and unrestricted access for vehicles entering onto US 385. The existing frontage road would be eliminated, and access for drives would be provided onto US 385. Where possible, driveways would be consolidated to reduce the number of access points.

Additional ROW would still be required from the Dinklage property owner, but not in the areas of the feedlot pens. The additional ROW would be south and north of the feedlot operation.

Figure 3.10 – Typical Cross Section for Alternative 9

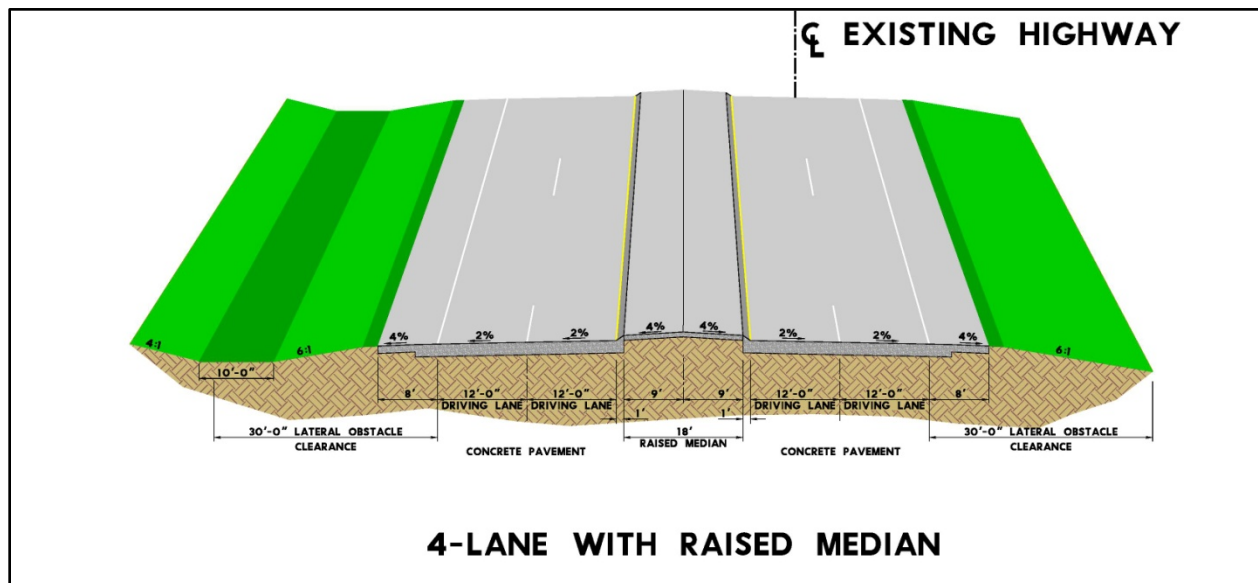


Results of Screening. Based on the screening criteria of environmental impacts and public comments, and due to the benefits of least ROW and farmland impacts, and strong public support, this alternative was carried forward for further analysis as the Preferred Alternative.

Alternative 10: Four-Lane Divided Roadway with Raised Median. This alternative would consist of constructing a new four-lane roadway with an 18-foot-wide raised median (**Figure 3.11**). This alternative would maintain the same east edge of the travel lanes. The new northbound lanes would be constructed in the same location as the existing roadway. This would shift the centerline of the new roadway west approximately 22 feet. The existing frontage road, which runs from Rock Road to Kansas Street on the east side of US 385, would be reconstructed and access would be consolidated to two new jug handle intersections with US 385. Access to the frontage road would also be provided from Kansas Street. No other direct access to the highway would be permitted. Northbound and southbound left-turn lanes would be provided at each access point and intersection. The middle jug handle intersection would require acquisition of one business and one residence. At the public meeting, the public voiced a strong preference to eliminate the middle access point to the frontage road. As such, the middle intersection was removed from Alternative 10, leaving one jug handle intersection near the south end of the frontage road and a connection to Kansas Street on the north end.

Additional ROW would still be required from the property owner, but not in the areas of the feedlot pens. The additional ROW would be south and north of the feedlot operation.

Figure 3.11 –Typical Cross-Section for Alternative 10

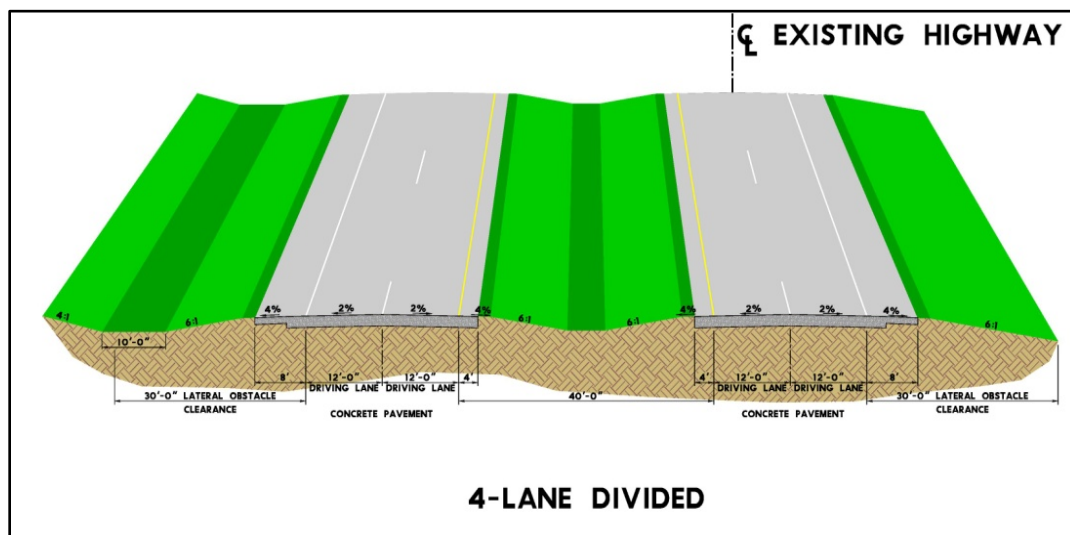


Results of Screening. Based on the screening criteria of environmental impacts and public comments, Alternative 10 was eliminated for the following reasons:

1. Maintenance Concerns: This alternative would require additional effort to plow the center raised median to minimize snow melting and refreezing across the driving lanes, as well as additional maintenance and snow removal for frontage roads.
2. Cost: This alternative would be the most expensive alternative.

Alternative 11: Four-Lane Divided Roadway with Depressed Median. This alternative would consist of construction of a new four-lane divided roadway with a 40-foot-wide depressed median (**Figure 3.12**). This alternative would maintain the same east edge of the travel lanes. The new northbound lanes would be constructed in the same location as the existing roadway. This would shift the new centerline of the roadway west approximately 32 feet. The existing frontage road, which runs from Rock Road to Kansas Street on the east side of US 385, would be reconstructed and access would be consolidated to two new jug handle intersections with US 385. Access to the frontage road would also be provided from Kansas Street. Northbound and southbound left-turn lanes would be provided at each access point and intersection.

Figure 3.12 – Typical Cross-Section for Alternatives 11

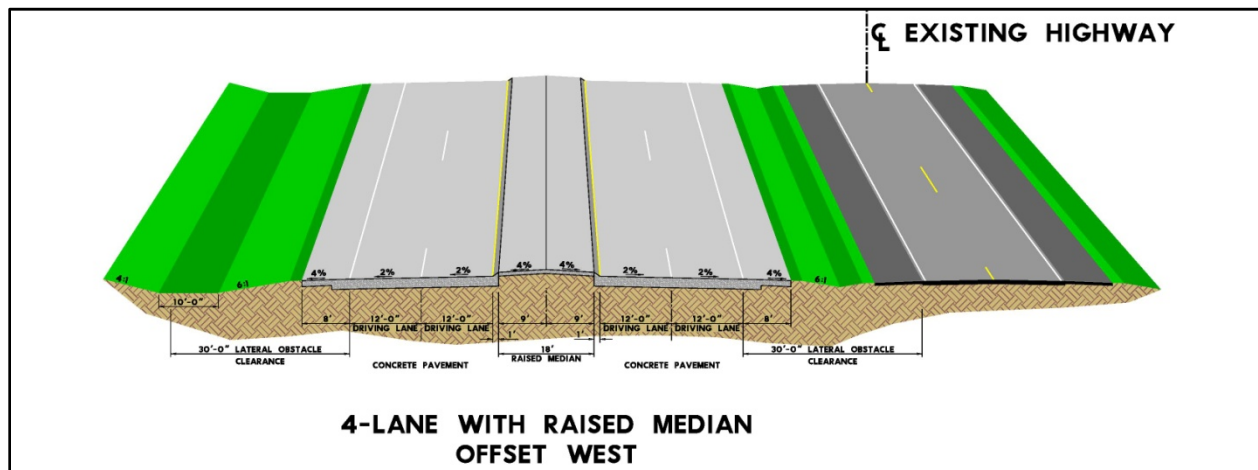


Results of Screening. Based on the screening criteria of environmental impact and public comment, Alternative 11 was eliminated for the following reasons:

1. **Driver Expectancy:** In this vicinity, the road transitions from a rural to urban setting. The northbound posted speed limit on US 385 decreases from 65 mph to 45 mph south of the intersection with Rock Road. Continuing the 40-foot depressed median would not provide any visual cues to drivers that speeds should be reduced.
2. **Limited Public Support:** The public expressed concern that this alternative would encourage higher speeds on the highway.
3. **Footprint:** This alternative would have a wider footprint and would require more property rights acquisition than Alternatives 9 and 10. This alternative would also have a considerable impact on three irrigation center pivots.
4. **Additional Maintenance:** This alternative would require additional maintenance and snow removal for frontage roads.

Alternative 12: Offset Four-Lane Divided Roadway with Raised Median. This alternative would consist of constructing a new four-lane roadway with an 18-foot raised median, on new alignment, west of the existing roadway (**Figure 3.13**). This alternative would shift the centerline approximately 76 feet to the west of the existing road centerline. The existing two-lane highway would become a frontage road. The frontage road would be provided from Rock Road to Kansas Street, and access onto US 385 would be provided by two new jug handle intersections. Access to the frontage road would also be provided from Kansas Street. At the public meeting, the public voiced a strong preference to eliminate the middle access point to the frontage road. Therefore, the middle intersection was removed from this alternative, leaving one jug handle intersection near the south end of the frontage road, and a connection to Kansas Street on the north end. North of Kansas Street the new roadway would not be offset to the west and would maintain the same east edge of the travel lanes. The new northbound lanes would be constructed in the same location as the existing roadway. Northbound and southbound left-turn lanes would be provided at each access point and intersection.

Figure 3.13 – Typical Cross-Section for Alternative 12

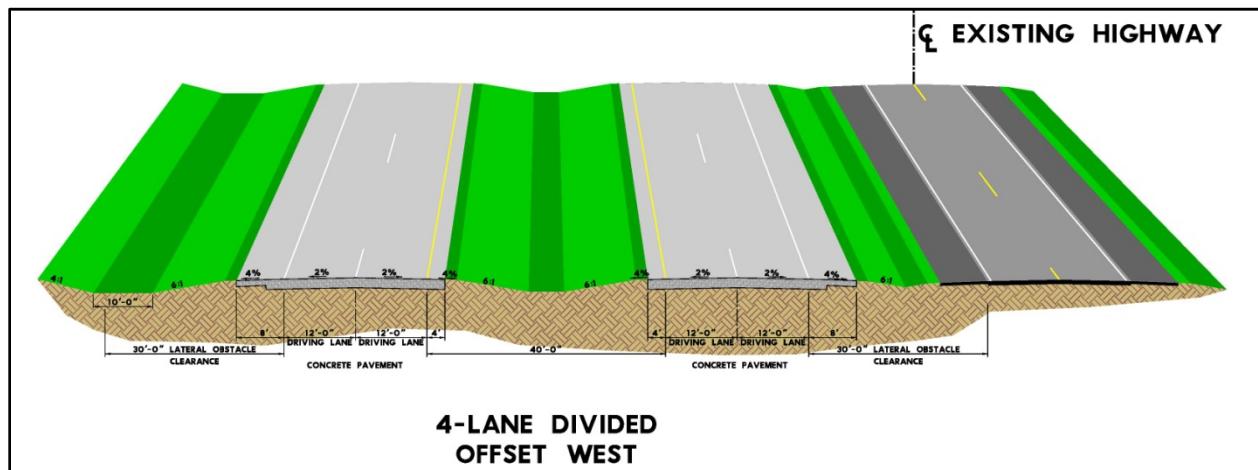


Results of Screening. Based on the screening criteria of environmental impacts and public comments, Alternative 12 was eliminated for the following reasons:

1. **Footprint:** This alternative would require more property rights acquisition than the other alternatives except Alternative 13. This alternative would also have a considerable impact on three irrigation center pivots.
2. **Additional Maintenance:** This alternative would require additional maintenance and snow removal for frontage roads and the raised median to minimize snow melting and refreezing across the driving lanes.
3. **Cost:** This alternative would be more expensive than all other alternatives, except Alternative 10.

Alternative 13: Offset Four-Lane Divided Roadway with Depressed Median. This alternative would consist of construction of a new four-lane divided roadway with a 40-foot-wide depressed median, on new alignment, west of the existing roadway (**Figure 3.14**). This alternative would shift the centerline approximately 76 feet to the west of the existing road centerline. The existing two-lane highway would become a frontage road. The frontage road would be provided from Rock Road to Kansas Street, and two new jug handle intersections would provide access onto US 385. Access to the frontage road would also be provided from Kansas Street. At the public meeting, the public voiced a strong preference to eliminate the middle access point to the frontage road. Therefore, the middle intersection was removed from this alternative, leaving one jug handle intersection near the south end of the frontage road, and a connection to Kansas Street on the north end. North of Kansas Street the new roadway would not be offset to the west and would maintain the same east edge of the travel lanes. The new northbound lanes would be constructed in the same location as the existing roadway. Northbound and southbound left-turn lanes would be provided at each access point and intersection.

Figure 3.14 – Typical Cross-Section for Alternative 13



Results of Screening. Based on the screening criteria of environmental impacts and public comment, Alternative 13 was eliminated for the following reasons:

1. **Driver Expectancy:** In this vicinity, the road transitions from a rural to an urban setting. The northbound posted speed limit on US 385 decreases from 65 mph to 45 mph south of the intersection with Rock Road. Continuing the 40-foot depressed median would not provide any visual cues to drivers that speeds should be reduced.
2. **Footprint:** This alternative would have a wider footprint and would require more property rights acquisition than the other alternatives. This alternative would also have a considerable impact on three irrigation center pivots.
3. **Limited Public Support:** The public expressed concern that this alternative would encourage higher speeds on the highway.
4. **Additional Maintenance:** This alternative would require additional maintenance and snow removal for frontage roads.

Table 3.5 summarizes the comparison of the Alliance alternatives.

Table 3.5 – Comparison of Design Alternatives at Alliance

Evaluation Factors	Alternative 9 Alliance 5-Lane TWLTL	Alternative 10 Alliance 4-Lane Raised Median	Alternative 11 Alliance 4-Lane Divided Median	Alternative 12 Alliance Offset 4-Lane Raised Median	Alternative 13 Alliance Offset 4-Lane Divided Median
Right-of-Way - Acres Acquired	3.11	13.67	17.95	18.66	30.19
Number of Farms Impacted	4 Minor	4 Minor	4	4	4 Most
Number of Pivots Impacted	3 Minor	3 Minor	2 Minor 1 Major	1 Minor 2 Major	3 Major
Environmental Impacts					
Acres of Shortgrass Prairie within Footprint	0.5	1.4	3.6	5.1	7.3
Acres of Irrigated Cropland within Footprint	0.3	1.1	2.9	3.9	6.4
Acres of Non-irrigated Cropland within Footprint	0.0	1.0	2.3	2.9	5.0
Drainage / Runoff Impacts	Moderate Runoff	Moderate Runoff	Less Runoff- Open Drainage	Moderate	Least - Open Drainage
Prime Farmland Impacts	Least	Less	Moderate	Moderate	Greatest
Land Use Compatibility	Greatest	Reasonable	Reasonable	Reasonable	Reasonable
Noise Impacts (Closest Receptors)	NB & SB Closer	Increase Volume NB	Increase Volume NB- Shifts SB	Shifts NB & SB Away	Shifts NB & SB Further Away
Local Support					
Supported by Local Community- (Comment Sheets)	Strong	Strong	Less	Moderate	Less
Traffic/Access					
Consolidated Access to Properties	Direct Unrestricted- More Conflicts	Consolidates Left turns	Consolidates Left Turns	Consolidates Left Turns	Consolidates Left Turns
Negotiating Right Turn Maneuvers	Tightest with Higher Speed Traffic	Indirect on Frontage Road	Indirect on Frontage Road	Best Separation from Frontage Rd	Best Separation from Frontage Rd
Local Circulation Between Parcels	Not Provided	Frontage Road	Frontage Road	Frontage Road	Frontage Road
Context Sensitive Design- (Need to Adjust Speeds, superelevation)	Shift in Context	Gradual Shift in Context	No Indication of Different Context	Gradual Shift in Context	No Indication of Shift in Context
Safety					
Potential for Rearend Conflicts	Greatest Conflicts-Allows All Movements at All Drives	Defines Right Turn Movements at Limited Access Points	Defines Right Turn Movements at Limited Access Points	Defines Right Turn Movements at Limited Access Points	Defines Right Turn Movements at Limited Access Points
Potential for Left Turn Conflicts	Provides Separate Left Turn Lane - Unrestricted Left Turns Entering/Exiting	Defines and Limits Left Turn Movements	Defines and Limits Left Turn Movements	Defines and Limits Left Turn Movements	Defines and Limits Left Turn Movements
Potential for Headon Conflicts	Least Separation from Oncoming Traffic	Good Separation From Oncoming Traffic	Greatest Separation from Oncoming Traffic	Good Separation From Oncoming Traffic	Greatest Separation from Oncoming Traffic
Construction					
Earthwork - Cubic Yards of Material	28,000 CY	42,300 CY	25,100 CY	48,200 CY	87,700 CY
Construction Phasing	Tightest	Some Restrictions	Fewer Restrictions	Best- New Alignment	Best- New Alignment
Construction Cost (Millions)	\$3.90	\$4.63	\$3.59	\$4.42	\$4.49
Maintenance					
Ability to Store Snow	Good	Less	Good	Less	Good
Signs and Markings/ Mowing/ Patching/ etc	Fewer Signs / More Markings	Signing to Delineate Curbs	Mowing Medians	Signing to Delineate Curbs	Mowing Medians
Evaluation Summary	<p>Advantages:</p> <ul style="list-style-type: none"> Least right-of-way required Least impact to prime farmland Strong Public Support Least impact to current access No frontage roads to maintain Provides visual cue for driver to slow down <p>Disadvantages:</p> <ul style="list-style-type: none"> Less than desirable access management Potential for conflicting left turn movements Increased effort to plow median 	<p>Advantages:</p> <ul style="list-style-type: none"> Frontage road provides controlled access to Hwy Conflict points reduced with raised median Provides visual cue for driver to slow down Strong public support Good separation from oncoming traffic <p>Disadvantages:</p> <ul style="list-style-type: none"> Highest construction cost Requires additional ROW along west side of Hwy Difficult to plow raised median Require maintenance/snow removal for frontage roads 	<p>Advantages:</p> <ul style="list-style-type: none"> Frontage road provides controlled access to Hwy Lowest construction cost Can push snow to the median <p>Disadvantages:</p> <ul style="list-style-type: none"> Considerable right-of-way required Would impact center pivot on west side No visual cue to slow down Less public support Require maintenance/snow removal for frontage roads 	<p>Advantages:</p> <ul style="list-style-type: none"> Frontage road provides controlled access to Hwy Conflict points reduced with raised median Provides visual cue for driver to slow down Moderate public support <p>Disadvantages:</p> <ul style="list-style-type: none"> Highest construction cost Considerable right-of-way required Would impact 2 center pivots on west side Difficult to plow raised median Require maintenance/snow removal for frontage roads 	<p>Advantages:</p> <ul style="list-style-type: none"> Frontage road provides controlled access to Hwy Can push snow to the median <p>Disadvantages:</p> <ul style="list-style-type: none"> Higher right-of-way required would impact 3 center pivots on the west side No visual cue to slow down Less public support Require maintenance/snow removal for frontage roads
Alternative Selection	Yes	No	No	No	No

* ROW Acquired is calculated by adding 10% to area of roadway footprint outside of existing ROW.

E. Alternatives Carried Forward for Detailed Evaluation

E.1 No-Build Alternative

The No-Build Alternative would perpetuate the existing L62A and US 385 roadway alignments, geometry, and cross sections. The US 385 roadway has several vertical curves that do not meet current design criteria, incurs snow drifting and increased maintenance during winter driving conditions due to side slopes, and has a relatively high percentage of truck traffic. Beet trucks are allowed to be 15 percent overweight and can be as much as 120 feet in length, exacerbating passing opportunities. The roadway was constructed in 1958. Due to its age and the increasing volume of overweight trucks, maintenance requirements such as patching and overlays are anticipated to increase in extent and frequency.

Although the No-Build Alternative would not meet the project Purpose and Need, it is being carried forward for analysis and is discussed in subsequent sections to establish a baseline for comparison of the build alternative.

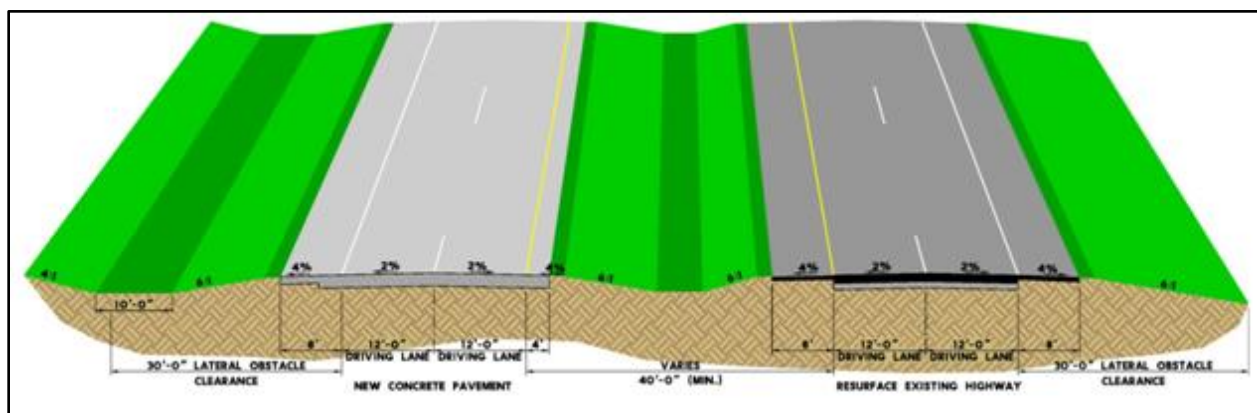
E.2 Preferred Alternative (Four-Lane West Alignment)

As a result of the preliminary screening and location-specific alternatives analysis, the Preferred Alternative would consist of the Four-Lane Divided, West Alignment Alternative, with the following site-specific (spot design) alternatives:

- Alternative 1: Large Sweeping Curve Alternative for the Junction of L62A/US 385
- Alternative 4: Angora East Alternative
- Alternative 8: Dinklage Feedlot Shifted Alternative
- Alternative 9: Alliance Five-Lane TWLTL Alternative

The Preferred Alternative would begin on L62A near MM 7.00, or CR 89, and continue through the junction at MM 9.26. It would then continue north on US 385 from MM 84.70, to Alliance near MM 109.00. The roadway would be constructed along the existing alignment for a majority of the project and would be built under traffic with minimal temporary construction impacts. The Preferred Alternative would be widened to a four-lane roadway west of the existing alignments of L62A and US 385. The horizontal and vertical design of the ultimate four-lane section would accommodate the interim construction of the southbound lanes, while using the existing highway as the northbound lanes of the roadway, as shown in **Figure 3.15**.

Figure 3.15 – Typical Rural Cross Section with Phased Construction

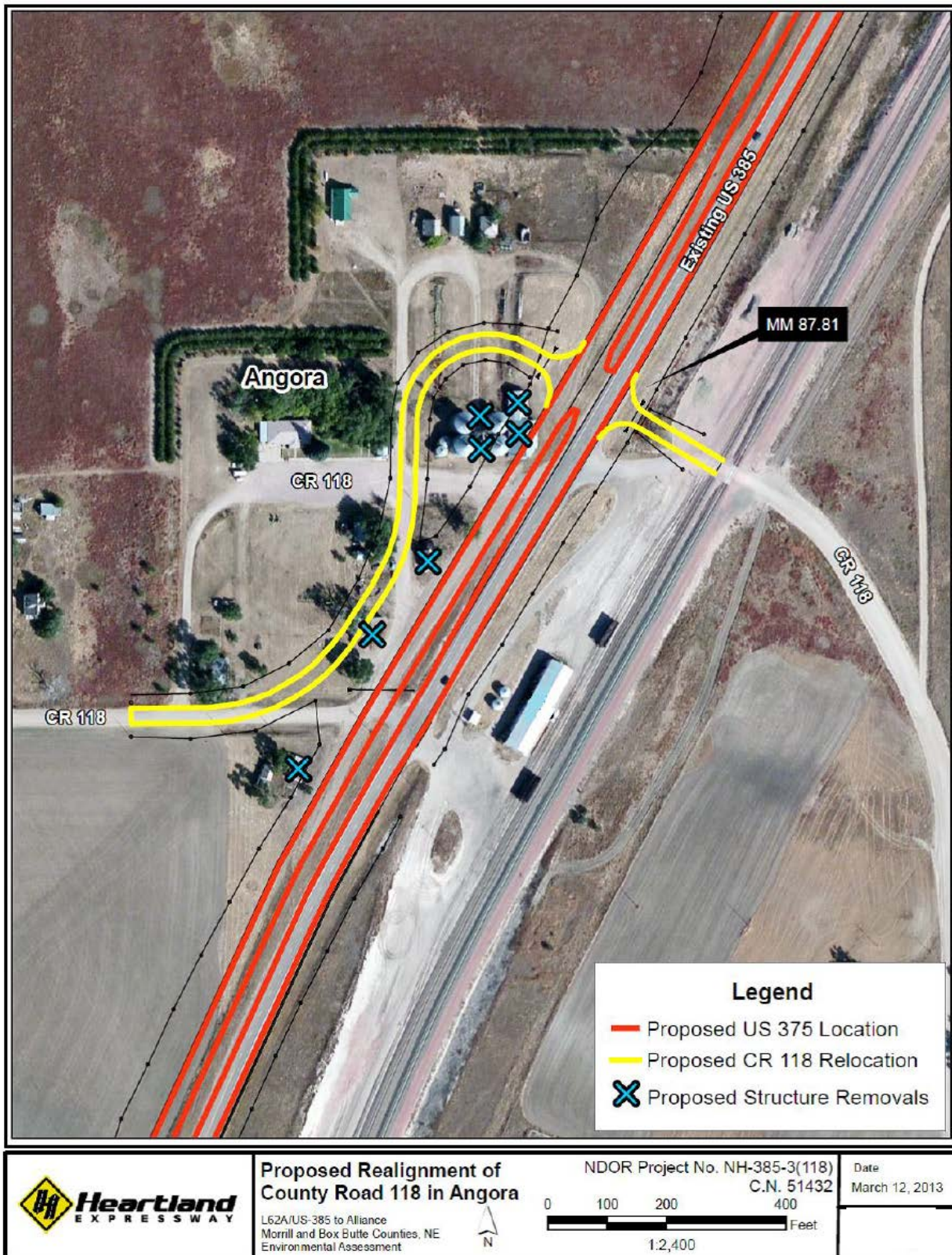


To use the existing US 385 pavement, the new project centerline would shift west to a point where the vertical deficiencies of the existing highway are corrected for the new southbound lanes, while maintaining a reasonable median width and ditch section between the existing (northbound) and the new (southbound) lanes. Based on guidance from *A Policy on Geometric Design of Highways and Streets*, 6th Edition (AASHTO, 2011), a maximum median width of 80 feet was used in analyzing the interim grading between the new southbound lanes and the existing highway at locations where there are county road intersections, commercial drives, and residential drives. For areas outside the vicinity of proposed intersections and drives, median widths greater than 80 feet could be used.

The project includes many culvert extensions, as well as new culverts, in the areas of new alignment. Median breaks would be provided at county roads, driveways, and field entrances as allowed through the Access Control Management policy for this project, with consolidation where feasible. **Appendix B** shows county road locations.

The county roads along the southern portion of the project, including CR 95, to the south of Angora, and CR 118, in Angora, would be realigned to correct excessive skew angles and reduce access points (**Figure 3.16**). A number of alternatives for the CR 118 intersection were considered however, the proposed alternative was preferred by landowners because it minimizes impacts to farm ground, and allows properties to remain functional. Although it requires impacts to a number of buildings and grain storage structures, most of the buildings are beyond use. Further, property acquisition will be handled following the Federal Uniform Acquisition and Property Relocation Act which will allow owners to replace or relocate existing grain storage structures. CRs 89, 116, and 120 would have the intersection returns reconstructed only. The north entrance and portion of surrounding roadway for the former Angora Wayside Area would be removed.

Figure 3.16 – Proposed Realignment of County Road 118 in Angora



Description of the Preferred Alternative

The Preferred Alternative would include Alternative 1: Large Sweeping Curve Alternative, to replace the existing L62A/US 385 Junction. The sweeping curve would cut through several large hills and ravines, resulting in cuts and fills of 40 feet or more. Drainage structures would be installed as needed. Intercepting dikes and drop pipes would be required to collect overland flow and prevent it from eroding the backslopes. This alternative would include a livestock crossing structure to be constructed near the realigned US 385 Junction.

The realignment of the south leg of US 385 would tee into the new four-lane highway near MM 85.00, as shown in **Figure 3.5** The realignment would begin just north of the existing junction and would be approximately 0.5-mile long. An auxiliary left-turn lane would be constructed at the intersection.

This alternative would have the least impact on potential habitat, would be the most direct route, would have the smoothest geometry, and has strong public support based on comments at past public meetings.

Through Angora, the Preferred Alternative would locate the new four-lane highway with a depressed median on the existing alignment, or Alternative 4: Angora East Alternative. The widening would occur to the west, which would result in some acquisition of ROW and relocations. The access drives within Angora, including CR 118, would be reconfigured to provide a single access point and reduce the number of median breaks. See **Figure 3.16** for CR 118 realignment.

This alternative would require the least amount of ROW, would have the least impact on prime farmland, has strong public support based on comments at past public meetings, and would have the least construction costs.

Continuing north from Angora through Morrill County, the US 385 alignment would be smoothed and flattened to provide a more traversable roadway. CR 128 would be realigned to both reduce the intersection skew and realign the intersection to be directly across from another driveway. The driveway connection to CR 128 would also be realigned to provide greater separation from the new southbound lanes of US 385. Several field entrances along the project would be consolidated to meet NDOR access control management guidelines.

The existing alignment of US 385 near MM 98.00 would be shifted west to remove the existing highway off the existing railroad ROW. Near MM 101.00, the existing alignment of US 385 would also be shifted west to avoid any impacts on the railroad ROW on the east side of US 385 and reduce impacts to the irrigation pivot and commercial businesses near the county line.

The Preferred Alternative would continue north of the Box Butte-Morrill county line through the junction with N-2 in the City of Alliance. The existing alignment would follow the existing highway in this segment such that the existing highway would become the northbound lanes and the southbound lanes would be constructed to the west. The Dinklage Feedlot Alternative would take advantage of an additional 30 feet of separation from the railroad tracks, while also avoiding impacts to the cattle pens and waste lagoons., and the Alliance Alternative would construct a five-lane roadway with a TWLTL.

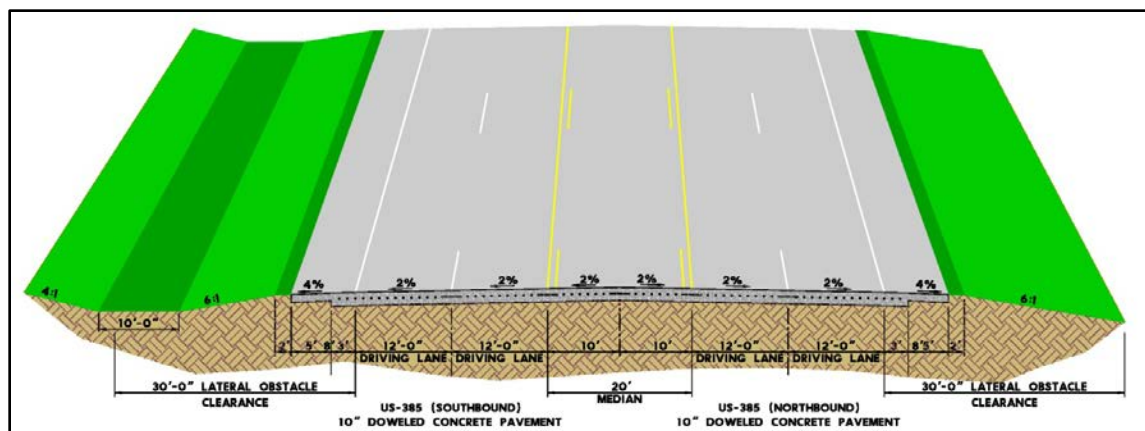
To minimize or avoid impacts on the feedlot, the design team studied the existing highway alignment and its relationship with the railroad alignment. In the area of the feedlot, the existing highway alignment gently pulls away from the railroad alignment, resulting in an additional 30-foot clearance between the railroad and the highway. By revising the alignment to maintain the same separation from the railroad tracks, as is elsewhere the highway alignment in the vicinity of the feedlot would be shifted approximately 30 feet to the east.

In addition, in the area immediately adjacent to the feedlot, the backslope of the roadside ditch would be steepened from a 4:1 to a 3:1. This would increase the buffer distance between the back of slope and the feedlot pens. This alternative would completely avoid impacts on the feedlot pens and the feedlot lagoons.

Additional ROW would still be required from the property owner, but not in the areas of the feedlot pens and lagoons. The additional ROW would be south and north of the feedlot operation. For these reasons, Alternative 8: Feedlot Shifted Alignment was selected as the Preferred Alternative.

In Alliance, Alternative 9: Five-Lane with TWLTL would consist of constructing a new five-lane roadway centered on the existing alignment (**Figure 3.17**). This alternative would provide a TWLTL from Rock Road through the junction with N-2 (West 3rd Street). The TWLTL would provide left-turn lanes for northbound and southbound traffic and unrestricted access for vehicles entering onto US 385. The existing frontage road would be eliminated, and access for drives would be provided onto US 385. Where possible, driveways would be consolidated to reduce the number of access points.

Figure 3.17 – Typical Cross Section in Alliance



This alternative, compared to the other Alliance alternatives, would require the least amount of ROW, would have the least impact on prime farmland, has strong public support based on comments at past public meetings, would have the least impact on existing access points along the highway, would not require frontage roads to maintain and plow in the winter, and would provide good visual cues for drivers to slow down as they approach the City of Alliance urban area.

Construction Phasing

The first construction project would be within the City of Alliance. The second construction project would begin south of the Alliance improvements, this project includes an interim build phase that uses the existing US 385 lanes as the northbound lanes, while constructing two new southbound lanes to the west. This phase would extend to south of Angora to the existing junction of L62A. Once the improvements approach the junction, the depressed median would be tapered down to establish auxiliary turn lanes at the intersection. The outside southbound lane would transition into the existing free right, and the US 385 median would continue to taper down to zero south of the intersection. A dedicated left-turn lane would be formed at the junction for northbound left turns. The existing US 385 lanes would be resurfaced as needed to extend the pavement life until such time they could no longer be resurfaced. Once this occurs, the northbound lanes would be reconstructed at the 40-foot median width and match the elevation of the southbound lanes. The sweeping curve connection to L62A and realignment of US 385 would be constructed during the third construction project.

General Project Schedule and Anticipated Funding

NDOR considers the proposed project a “planned expressway.” Planned expressways are not considered for traditional funding. However, they are eligible for innovative, non-traditional funds, such as Congressional earmarks, local funds, private funds, or any combination of these.

This project includes Federal funding in the amount of \$21.5 million. **Chapter 2, Section B.2** provides a breakdown of designated funding. It is anticipated that this money would be used to perform the environmental reviews and documentation, engineering design, and purchase of the ROW for the first two construction projects, with any remaining funds being used toward construction.

In addition, this project is one of the roadway improvement projects to be funded by the Build Nebraska Act, with funds in the Tier II grouping (FY 2016–2019). The act created the State Highway Capital Improvement Fund, which directs general fund money for construction of expressway system and high-priority highway projects, such as this one. The funding began in 2013 and would continue for 20 years until 2033.

The first construction project, Alliance South, DPS-385-4(139), CN 51522, programmed in the STIP for FY15, would construct US 385 from the junction of N-2 to approximately MM 100+00. The project would use designated federal funds and is estimated at \$25 million for construction costs and construction engineering.

The second construction project, L62A North, S-385-3(1021), CN 51443, programmed in the STIP for FY16, would construct US 385 from approximately MM 100+00 to the junction of US 385 and L62A. This project would use Build Nebraska Act funds and is estimated at \$30 million for construction costs and construction engineering.

The two projects above could be constructed in four construction seasons.

The third construction project, currently not programmed because it is more than five years out, would construct the segment of highway connecting L62A to US 385, via the long sweeping curve. This project would also require reconstructing the south leg of US 385 to connect to the new sweeping curve.

Upon completion of Phase II, interim phase construction will occur to prepare the project for Phase III construction (see **Figure 3.5**). As mentioned above, the third construction project which would be built when the transportation needs of the corridor warrant it and NDOR is committed to constructing Phase III of the project in the future when funding becomes available. Funding is anticipated to be included in the next Build Nebraska Act. Of note, the interim phase build-out meets the outlines Purpose & Need of this project as a useable and function facility. The interim construction would have operational independence and is a reasonable solution until the third construction project would be built. Refer to **Section S. Temporary Construction Impacts** for additional information.

Preliminary engineering, ROW and utilities have or would occur under a separate project NH-385-3(118), CN 51432, and are estimated at \$10 million.

The total cost (in today's dollars) of the project contemplated is estimated at \$90 million, which includes an estimated \$25 million to construct the sweeping curve and reconstruct the northbound lanes.

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

This chapter discusses environmental considerations for the project, the contextual setting of the affected environment, impacts of the No-Build and Preferred Alternatives, proposed mitigation, and standard specifications and special provisions (when they are used to minimize or avoid impacts).

Standard specifications are NDOR requirements regarding materials, products, services, and construction methods. Special provisions are additions and revisions to the standard specifications. This chapter also addresses issues that were eliminated from further study.

It is noted that *Standard Specification 107.01: Legal Relations and Responsibility to the Public – Laws to be Observed* (NDOR, 2007) is required comprehensively for all work conducted by the Contractor. Therefore, it is not repeated under every evaluated resource. The specification requires the Contractor to be aware of and observe Federal, State, and Local laws and ordinances.

A. Issues Eliminated from Further Detailed Study

Section 6(f) Resources

Issues involving Section 6(f) resources were eliminated from further study because there are no properties in the study area funded with Land and Water Conservation Funds.

Wild and Scenic Rivers

Wild and Scenic Rivers were eliminated from further study because there are no Wild and Scenic Rivers, or National Rivers Inventory rivers, in the project vicinity.

Air Quality, Greenhouse Gas Emissions, and Mobile Source Air Toxics (MSAT) Analysis

Air Quality

Air quality was eliminated from further study because (1) the project is located in an Attainment Area as defined by the National Ambient Air Quality Standards, and (2) a Memorandum of Understanding, dated November 2004, among FHWA, Nebraska Department of Environmental Quality (NDEQ), and NDOR applies to this project, exempting it from evaluation of air quality because the projected Average Daily Traffic (ADT) is below 100,000. (The highest ADTs in the traffic study are 4,120 in 2010 and 5,680 projected in 2035.)

Greenhouse Gas Emissions

FHWA has developed four main mitigation strategies to reduce transportation greenhouse gas (GHG) emissions:

1. Improve system and operational efficiencies by optimizing the design, construction, operation, and use of transportation networks.
2. Reduce travel activity by reducing growth in vehicle-miles traveled.
3. Introduce low-carbon fuels.
4. Increase fuel efficiency by advancing and bringing to market advanced engine and transmission designs, lighter-weight materials, improved aerodynamics, and reduced rolling resistance.

Additionally, the EPA and National Highway Traffic Safety Administration, on behalf of the USDOT, have issued rules to reduce GHG emissions and improve fuel economy for light-duty vehicles. Over the lifetime of the model year (MY) 2017-2025 standards, this program is projected to save approximately 4 billion barrels of oil and 2 billion metric tons of GHG emissions (EPA 2013).

While there would be an increase in ADT and VMT along the corridor due to future growth, the Proposed Alternative would improve the system and operational efficiencies, improving traffic movement and decreasing backups, which would ultimately reduce energy use and GHG emissions. This was eliminated from further analysis.

Mobile Source Air Toxics

FHWA's Interim Guidance on Mobile Source Air Toxic Analysis identifies three categories for analyzing MSATs in NEPA documents, depending on the potential for MSAT effects. A memo on MSAT impacts is provided in Appendix N, which concludes that MSAT emissions in the project area are likely to be lower in the future. Thus this was eliminated from further analysis.

Impaired/Unique Waters

Section 303(d) of the Federal Clean Water Act (CWA), which Congress enacted in 1972, requires states, territories, and authorized tribes (states) to identify and establish a priority ranking for all water bodies where technology-based effluent limitations required by Section 301 are not stringent enough to attain and maintain applicable water quality standards. Once identified, states are to establish total maximum daily loads (TMDLs) for the pollutants causing impairment in those water bodies and to submit, bi-annually, the (revised) list of impaired water bodies and TMDLs to the EPA. The requirements to identify and establish TMDLs apply to all water bodies regardless of whether a water body is impaired by point sources, nonpoint sources, or a combination of both. *Pronsolino v. Marcus*, 2000 WL 356305 (N.D. Cal. 30 March 2000).

The 303(d) List of Waters reports on streams and lakes identified as impaired for one or more pollutants and do not meet one or more water quality standard. Impaired waters are identified through assessment and monitoring programs administered by NDEQ personnel, and other Local, State, and Federal agencies. Based on NDEQ's 2014 *Water Quality Integrated Report*, there are no impaired streams or waters within the project area (NDEQ, 2014).

Section 4(f) Properties

There are no parks, recreational lands, wildlife refuges, or historic properties within or in the vicinity of the project study area.

B. Land Ownership, Jurisdiction, and Land Use

B.1 Summary

Land ownership, jurisdiction, and use were determined as to public versus private ownership, governmental jurisdiction, and existing and anticipated land uses. Based on this information, project alternatives were evaluated for their potential to bring about changes in land use.

B.2 Affected Environment

Resource Review

Current land ownership, jurisdiction, and use were determined through review of aerial photography, project plans, the *Alliance Comprehensive Plan & Long Range Transportation Plan (The Alliance Plan, City of Alliance, 2009)*, zoning maps from the City of Alliance and Box Butte and Morrill Counties, and conversations with planning personnel from the City of Alliance, and Box Butte and Morrill Counties. *The Alliance Plan* and interviews were also used to consider future land use.

Environmental Study Area

The environmental study area for this analysis is 0.25 miles wide in most locations, as defined as part of the project alternatives analysis (see **Chapter 2**) to encompass all potentially affected properties. Because several alternatives varied in their width, length, and location, the width of the environmental study area varies along the approximately 26-mile long roadway alignment.

Land Ownership

Land ownership is predominately privately held, with the exception of one parcel of land in Morrill County and one parcel in Box Butte County, both owned by the Nebraska Board of Education Lands and Funds and the US 385/L62A roadway ROW, owned by NDOR. The highway ROW was primarily purchased in the late 1950s when the existing roadway was constructed. In Morrill County, the ROW ranges in width from a minimum of 20 feet, where the roadway is next to railroad ROW, to a maximum of 500 feet near the Angora Wayside Area, with the average width being approximately 190 feet. While in Box Butte County, ROW varies between a minimum of 59 feet and a maximum of 181 feet.

Jurisdiction

The independent jurisdictional authorities governing within the environmental study area are Box Butte County, Morrill County, and the City of Alliance. The unincorporated community of Angora does not have a governing body, such as a council. The Pathfinder Irrigation District owns the Lowline Canal at the west end of the project. The existing box culvert will be extended on the canal, with no loss of irrigation function.

Existing Land Uses

Range lands and cultivated fields dominate the land uses in the environmental study area. However, several developed areas are present within the study area, including unoccupied structures, residences, and commercial agricultural areas. Clusters of structures occur in the vicinity of the unincorporated community of Angora (MM 87.75). The structures in Angora include two grain elevators, a post office, less than a half-dozen residences, and several vacant buildings; the surrounding area is agricultural land. Clusters of occupied residences occur near MM 101.72, at MM 105.77, and along the west side of and within the City of Alliance, while individual residences occur along US 385 throughout the environmental study area. Commercial operations occur primarily at MM 101.72 (Rhino Linings of Alliance and Auto Sales), at approximately MM 104.65 (Dinklage Feedlot), and within the City of Alliance. The primary

industrial land use is the BNSF Railway, which parallels US 385 from Angora to the Alliance city limits.

The former Angora Wayside Area is located east of the existing highway, north of the unincorporated community of Angora; however, this area is no longer maintained as such by NDOR. Rest stops along highways are considered to be transportation, not recreational, facilities and thus are not Section 4(f) properties. NDOR does not provide services at the site and proposes to remove driveway access to it. NDOR owns the former rest area and is the agency with jurisdiction over the property. NDOR's mission is to provide and maintain a statewide transportation system. Providing park, recreation, or wildlife refuge resources is not part of the NDOR mission, and rest areas are not considered to be parks. Furthermore, the rest area has not been identified as a historic resource. As this area is not a Section 4(f) and is no longer maintained as a rest area, there would be no changes to land use from removal of the driveway.

Zoning

The northern extent of the environmental study area is the western/southern edge of the City of Alliance. The city has a 2-mile zoning jurisdiction. Within the city limits, land is zoned for agriculture, highway commercial, residential mobile park, and railroad and light industrial. Within the City's extra-territorial jurisdiction, land is zoned for agriculture, heavy, light, and railroad industrial, highway commercial, and residential single and mobile family. South of the Alliance extra-territorial jurisdiction, the land within the project area is zoned for agriculture.

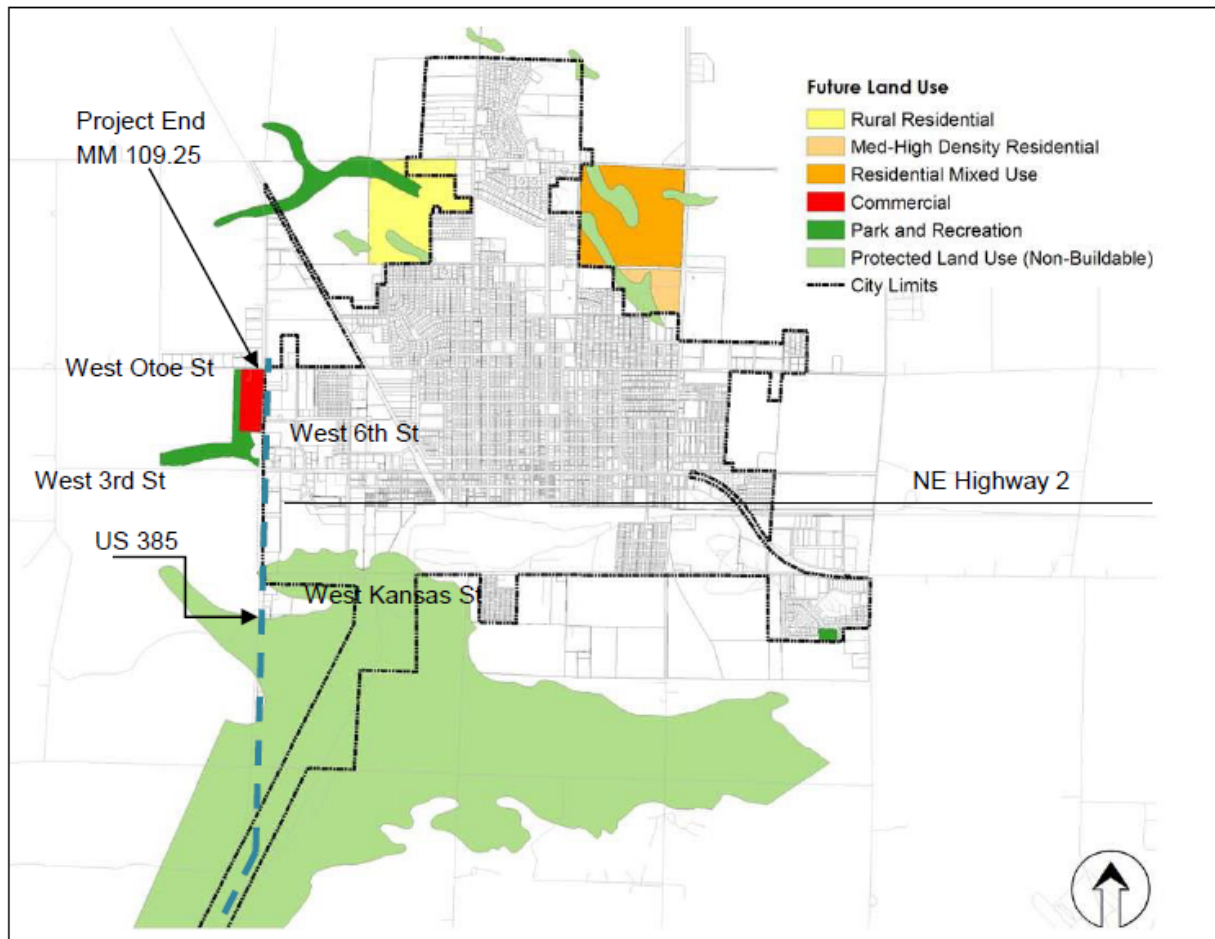
Future Land Uses

The Alliance Plan indicates the desire to include the implementation of a transitional speed limit near the city limits between the current speed of 45 mph and 65 mph, while long-term transportation plans (16+ years) include the installation of a traffic signal at the intersection of US 385/N-2 and West Kansas Street. This is accomplished with the construction of the Heartland Expressway Junction L62A/US 385 by reducing speed in the area highlighted in *The Alliance Plan*.

Three major future land use development scenarios have been envisioned for future land uses on the west and southwest edges of the City of Alliance. One future development scenario would be the creation of the Western Gateway at the intersection of US 385 and N-2. This development would be designed to encourage the location of commercial enterprises, as well as to provide an attractive entrance into Alliance.

Another future development scenario would be to transition from agricultural zoned land to commercial, recreational, and protected uses (**Figure 4.1**). Commercial land use areas would be located approximately between West Otoe Street and West 6th Street, while park and recreational areas would be located approximately between West 6th Street and West 3rd Street, though not along US 385.

Figure 4.1 – Potential Future Land Use
within the Jurisdiction of the City of Alliance



Source: *The Alliance Plan, 2009*

The Alliance Plan also indicates the potential conversion of land south of West Kansas Street along US 385 and the BNSF Railway, from agricultural to protected land use (non-buildable). This designation would serve to limit particular types of development due to inhospitable conditions, thus allowing a buffer zone around the BNSF rail yard. However, the designation would not preclude low impact agricultural, as most of the area is currently, passive recreational uses, or the widened highway which would not encroach on BNSF yard and would result in better access for yard workers.

As the former Angora Wayside Area is no longer maintained as a rest area, there would be no changes to land use from removal of the driveway.

B.3 Environmental Impacts of the No-Build Alternative

If the No-Build Alternative would be selected, then the proposed project would not be built. Additional ROW would not be acquired. All current highway access points would remain as is, and there would be no impact on existing or future land uses.

B.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would require:

- Acquisition of approximately 4 acres of zoned agricultural property in Angora.
- Removal of approximately 8 uninhabited structures in Angora. (Note that this is less than the number in the alternatives screening process due to efforts to minimize impacts in Angora.)
- Acquisition of approximately 2.4 acres of temporary easements in Box Butte County for driveway construction.
- Relocation of one residence located near the Box Butte-Morrill county line. Acquisition would not affect access to or occupancy of other residences in the area.
- Relocation of two residences near Sarpy Road. Acquisition would not affect access to or occupancy of other residences in the area.
- Acquisition of approximately 40 acres of new ROW in Box Butte County, of which approximately 1 percent is accounted for in Alternative 9.
- Acquisition of approximately 250 acres of new ROW in Morrill County, of which approximately 60 percent is accounted for in Alternatives 1, 4, and 7.

The exact amount of ROW needed for the project would be determined during final design. This project would require permanent and possibly temporary ROW from the Nebraska Board of Education Lands and Funds located in Section 36, Township 24, Range 49 West at the southern boundary of Box Butte County. This land is currently farmed, and does not have a school on it. No other public facilities/public lands (temporary or permanent) would be needed.

Current access points would be perpetuated or consolidated with adjacent properties. Controlled access would be acquired for the entire length of the project. Access to the individual businesses, residences, and other facilities in the area would be maintained during and after construction. The Contractor would coordinate any potential access restrictions with individual landowners and the City of Alliance prior to restrictions.

A number of alternatives for this intersection were considered however, the proposed alternative was preferred by landowners because it minimizes impacts to farm ground, and allows properties to remain functional. Although it requires impacts to a number of buildings and grain storage structure, most of the buildings are beyond use. Further, property acquisition will be handled following the Federal Uniform Acquisition and Property Relocation Act which will allow owners to replace or relocate existing buildings and grain storage structures.

The Preferred Alternative is in conformance with the STIP and with existing and currently proposed future land use plans. The project would have only a minimal effect on land ownership, jurisdiction, and land use.

B.5 Mitigation

Access to individual businesses, residences, and other facilities in the area will be maintained during construction (NDOR ROW Division, Contractor).

Property rights acquisition will be conducted by payment of fair market value for the property rights and damages that may occur as a result of the taking. Property rights acquisition will be completed in conformance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (Uniform Act), as amended, (42 USC 4601 et seq.), and the Nebraska Relocation Assistance Act (Neb. Rev. Stat. Section 76-1214 et seq.).

C. Socioeconomic Considerations

C.1 Summary

Socioeconomic issues related to the construction of two additional lanes are often complicated due to the size of the project. Issues to be considered include items such as permanent or temporary changes or impacts on travel patterns or accessibility; school districts or their operations (busing); recreational facilities; police and fire services; highway safety; and impacts on businesses.

C.2 Affected Environment

As mentioned previously, this project is part of the Heartland Expressway, which is a Federal High Priority Corridor. US 385 is the only National Highway System north-south route that spans the Nebraska Panhandle, connecting communities to each other and to neighboring states, and thus is an important part of the socioeconomics of the Panhandle region. Alliance is the economic hub of the project study area, providing a diverse economic base with major employers in the areas of agribusiness, industrial manufacturing, and railroad transportation. Scottsbluff, population 15,039, is located approximately 55 miles to the west, and Chadron, population 5,581, is approximately 55 miles north of Alliance. Several smaller communities within 60 miles of Alliance also provide alternative employment opportunities to citizens in the project vicinity.

Alliance had a population of 8,491 in 2010, which is a 5.2 percent decrease from the year 2000 according to the US Census Bureau (USCB, 2010). Additional details regarding the demographic data of the project study area can be found in greater detail in the **Chapter 4, Section D, Environmental Justice**, of this document. The City of Alliance is one of only 2,000 cities in the United States to provide its own electrical services through a community owned non-profit electric utility. Alliance also provides water, sanitary sewer, and refuse to the community. The City of Alliance is a member of the Public Alliance for Community Energy (ACE). ACE was formed in February 1998 and consists of 65 communities and one public power district that have joined together to become retail suppliers of natural gas.

Alliance also has several other facilities important to the region, including an airport, a public library, public/private schools, a post office, and a hospital. Western Nebraska Community College has a campus in Alliance, which provides continued educational services to the area. The Alliance area is also home to many recreational and tourist attractions, including the Knight Museum and Sandhills Center; Swallows Military Museum, Arboretum, and Conservatory; Skyview Golf Course; Big Blue Bay Outdoor Pool; Snake Creek Trail; and eight parks, ball fields, and tennis courts. Other recreational activities in the area include Carhenge, tent and recreational vehicle (RV) camping, fishing, and hunting.

BNSF is the largest employer in Alliance. BNSF was established in 1888 and employs approximately 1,800 people. Alliance's second largest employer is Alliance Public Schools, with approximately 360 employees, followed closely by Parker-Hannifin, with approximately 330 employees. Other major employers in Alliance include Box Butte General Hospital, City of Alliance, Perrin Manufacturing, and Vitalix.

US 385 serves as the main access route to the City of Alliance from the north and south. The Alliance Fire Department and emergency medical services use US 385 to access the surrounding rural area. The Box Butte County Sheriff's Department and the City of Alliance Police Department also use US 385 to access the surrounding area from Alliance. US 385 also serves as a route for students from the surrounding Alliance area.

Angora is an unincorporated town located approximately 20 miles south-southwest of Alliance on US 385 in Morrill County. With a population of 3 persons, Angora provides some agribusiness employment resources to the area and has a post office but does not have a school or other commercial services. One landowner owns the grain storage structures on both sides of the highway. These are used for personal farm operations, as the owner does not have the required license to rent/contract grain storage to multiple tenants. The facility is not operated as an open to the public grain storage facility serving area producers.

Morrill County provides several tourist opportunities that are accessible from the Heartland Expressway. Chimney, Courthouse, and Jailhouse Rocks were all used as landmarks for early pioneers and have become important tourist attractions. Bridgeport is the county seat of Morrill County and is located 37 miles south of Alliance and 15 miles south of Angora.

Current ranching practices allow ranchers to cross livestock at-grade, and typically ranchers call the sheriff's office to help direct traffic when this occurs.

C.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would not address issues concerning passenger vehicles and oversized trucks sharing the road. The road was originally constructed in 1958 to support small farms moving grain and root crops in single axle trucks. Changes in the agricultural industry have resulted in the use of longer, heavier trucks that can be difficult for smaller vehicles to see around for passing. The No-Build Alternative would not accommodate these changes.

Additionally, the No-Build Alternative would not accommodate increasing traffic levels. Increases in industry, agriculture, and mining have resulted in more oversized trucks using the road. The *Heartland Expressway Corridor Study* indicates that the percentage of truck traffic is estimated to increase over the next 20 years, from approximately 19 percent at present to 17 percent. The No-Build Alternative would not accommodate this increase in large truck traffic, which could lead to the use of alternate routes for through truck traffic, such as I-25, resulting in a decrease in the economy of the area.

C.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would be built with minimal disruption to the traveling public because traffic would be maintained on the existing roadway. School and emergency services routes,

truck delivery for manufacturing and businesses, traffic transporting goods and services, as well as general traffic would be minimally inconvenienced during construction equipment movements and material deliveries. Long-term impacts of the Preferred Alternative would be positive, resulting in a divided highway that would be more suited to and thus likely to be used by heavy trucks, and result in faster responses by emergency vehicles.

None of the business or residential driveways in Alliance would be consolidated.

In Angora, the buildings to be removed are degraded past the point of use and are unoccupied. In addition, there are no known plans to rehabilitate or repurpose any of these structures for business or other uses; therefore their removal would not negatively impact the economy or viability of Angora which currently has a population of 3 persons. The post office in Angora would not be impacted by the project. Furthermore, the proposed project may benefit the community by removing possible hazardous structures, improving the visual setting, and improving access through enhancement of the transportation facility.

Currently there are approximately 60 field entry or driveway access points on this route, as well as nine county roads. Access to the county road system would be maintained during and after construction (See **Section S. Temporary Construction Impacts**). Of the approximately 20 field entry or driveway entrances, all will have an alternative access point within a quarter-mile either from US 385 or a county road, with the following exceptions where there was no longer a need for access:

- 1 of the 2 entrances to the former wayside rest area
- 2 drives to the truck scale area (to be relocated)
- 2 drives connecting to the former US 385 roadbed, near CR 120
- 2 railroad drives (unpermitted with NDOR for access to the state highway system)

Existing livestock crossings would be maintained; two of which are grade separated crossings that go under the highway via box culverts; and one which is across the highway at-grade. Current practices do not require an access permit; however the NDOR recommends the rancher to contact local law enforcement prior to moving the livestock. Current practices for crossing the highway with livestock would not change with the project.

Property owners would be compensated for impacts to residential properties, farm and ranch property, irrigation equipment, grain storage structures, and other farm infrastructure during the ROW negotiation process which will follow the requirements of the Uniform Relocation Assistance and Real Property Acquisition Act (Uniform Act). Following this process, hardships on the property owners and farming operations (i.e. irrigation equipment) are mitigated by the property rights acquisition process, and would have no adverse socioeconomic impact. Depending on the preference of the property owner, the privately owned grain storage facility located west of US 385 could be relocated or replaced in another location on the same property without adverse impacts to farming operations. The privately owned grain storage facility located east of US 385 will not be impacted. See **Section O. Farmland**.

In addition, it is anticipated that construction of the Heartland Expressway, of which the Preferred Alternative is a part, would result in an economic benefit in the region, such as enhanced movement of agricultural commodities. An analysis of the economic benefits has been prepared for NDOR as a technical memorandum and is presented in **Chapter 2**.

C.5 Mitigation

Maintain or replace existing livestock crossings. Contractor would coordinate with landowners during construction to ensure timing of restrictions would not interfere with their operations (NDOR Environmental, District Construction, Contractor).

Per Standard Practice, NDOR shall notify the public at the start of construction by placing notices in the newspaper before construction, and electronic message boards may be used before the beginning of construction activities. NDOR shall also notify emergency services such as police and fire departments before construction activities begin, as well as maintain continued coordination throughout construction. Emergency services providers would be invited to the pre-construction meeting for this project (NDOR Communication, NDOR District 5).

Per standard specifications, the Contractor shall at all times, to the extent practicable, provide private dwellings, commercial properties, businesses, and public facilities access to and from the nearest intersecting public road or street (NDOR, 2007). Accommodations shall be made to ensure local traffic passing within the limits of the project has access to all private dwellings, commercial properties, businesses, agricultural properties, and public facilities. During those periods when a road is closed, even for a short duration, limited access must be maintained for authorized local traffic. If access is to be closed longer than one day, the Contractor would coordinate with the affected property owners (Contractor, NDOR District 5).

D. Title VI / Environmental Justice

D.1 Summary

The President signed Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, in 1994. This EO focuses the attention of Federal agencies on human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify the potential for disproportionately high and adverse effects on minority and low-income populations from proposed actions, and to identify alternatives that might mitigate these effects.

FHWA Order 6640.23A defines “Minority” and “Low-Income” as follows:

- a. **Low-Income.** A person whose median household income is at or below the Department of Health and Human Services poverty guidelines.
- b. **Minority.** A person who is:
 1. Black: a person having origins in any of the black racial groups of Africa;
 2. Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
 3. Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent;

4. American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or
5. Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islands.

A minority population should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (Council on Environmental Quality [CEQ], 1997).

Poverty status, which is used in this EA to define low-income status, is reported as the number of people with income at or below the poverty level. The 2014 DHHS Poverty Guidelines for the 48 contiguous states defines the poverty level as \$11,670 for an individual and \$23,850 for a family of four. The U.S. Department of Health and Human Services does not publish tabulations of the number of people below the DHHS poverty guidelines, which are a simplified version of the federal poverty thresholds. The federal poverty thresholds are used for calculating all official poverty population statistics, and are updated annually by the Census Bureau. The best approximation for the number of people below the DHHS poverty guidelines in a particular area is the number of persons below the Census Bureau poverty thresholds in that area. In this analysis, 2008-2012 American Community Survey (a Census Bureau product) was used to determine low-income data for the study areas. For more information, see <http://aspe.hhs.gov/poverty/faq.cfm>,

Data from the 2000 and 2010 Census are the latest reliable and consistent data regarding the ethnic composition and poverty status of the population, especially for sub-county divisions such as towns. Later estimates from various sources may use different methodologies and do not provide accurate comparisons. These definitions and assessment methodology follow the CEQ's Environmental Justice Guidance under the National Environmental Policy Act (CEQ, 1997) and the FHWA's Order 6640.23A (FHWA, 2012).

D.2 Affected Environment

Social and economic conditions for the full length of the Junction of L62A/US 385 to Alliance corridor were examined and have been divided into two study areas:

1. Morrill County (Study Area 1): Including the L62A/US 385 Junction near MM 84.70 to the Morrill/Box Butte county line near MM 101.72. Most of the project in Study Area 1 is routed through rural areas that are either underdeveloped or in agricultural production and, as a result, are not heavily populated.
2. Box Butte County (Study Area 2): From the Morrill/Box Butte county line to the end of the corridor in Alliance near MM 109.25. Study Area 2 passes through agricultural land use near MM 101.54 and then gradually borders the urban area of Alliance, beginning near MM 107.00.

Environmental justice analyses using 2010 U.S. Census Bureau data were performed to identify the potential for effects on minority populations throughout both study areas, from L62A/US 385

Junction to Alliance. In addition, using data from the 2008-2012 American Community Survey, income and poverty status were considered and reviewed along the alignment for each study area to identify the potential for effects on low income populations.

Table 4.1 shows minority and Hispanic populations for Census Tract 9511 and 9513 (which includes the part of the City of Alliance east of the project area, and, thus, the vast majority of the population on the project site), the two counties (all of Morrill County is in a single Census Tract, 9525), Nebraska, and the United States, while **Table 4.2** provides median household income, per capita income, and poverty status throughout both study areas.

Table 4.1 – Minority Population in the Project Vicinity

2010 U.S. Census Bureau Data						
	Census Tract 9511	Census Tract 9513	Box Butte County	Morrill County (Census Tract 9525)	Nebraska	United States
Population						
Total Population	2,259	4,217	11,308	5,042	1,826,341	308,745,538
Number						
White	2,202	3,490	10,149	4,600	1,572,838	223,553,265
Black or African American	3	28	52	12	82,885	38,929,319
American Indian and Alaska Native	15	281	409	55	18,427	2,932,248
Asian	3	9	34	18	32,293	14,674,252
Native Hawaiian and Other Pacific Islander	0	0	2	0	1,279	540,013
Some Other Race	12	252	379	280	79,109	19,107,368
Two or More Races	24	157	283	77	39,510	9,009,073
Hispanic or Latino (of any race)*	63	628	1,157	687	167,405	50,477,594
Percentage						
White	97.5	82.8	89.8	91.2	86.1	72.4
Black or African American	0.1	0.7	0.5	0.2	4.5	12.6
American Indian and Alaska Native	0.7	6.7	3.6	1.1	1.0	0.9
Asian	0.1	0.2	0.3	0.4	1.8	4.8
Native Hawaiian and Other Pacific Islander	0.0	0.0	0.0	0.0	0.1	0.2
Some Other Race	0.5	6.0	3.4	5.6	4.3	6.2
Two or More Races	1.1	3.7	2.5	1.5	2.2	2.9
Hispanic or Latino (of any race)*	2.8	14.9	11.4	14.9	9.2	16.4

*Note: The numbers and percentages of Hispanic or Latino people already are counted in the numbers and percentages for race, and thus are not included in the totals.

Source: U.S. Census Bureau, 2010

Table 4.2 – Income in the Project Vicinity

2010 Demographic Income Statistics					
	Alliance	Box Butte County	Morrill County	Nebraska	United States
Population					
Total Population	8,491	11,308	5,042	1,826,341	308,745,538
Number					
Individuals below poverty level	1,987	2,250	741	226,466	46,003,085
Percentage					
Individuals below poverty level	23.4	19.9	14.7	12.4	14.9
Income					
Median household income	\$43,118	\$44,025	\$42,025	\$51,381	\$50,046*
Per capita income	\$22,711	\$24,389	\$21,881	\$26,523	\$26,059*

Source: American Community Survey, 2008 – 2012,

*United States Median household income and Per capita income, American Community Survey, 2006 – 2010

Study Area 1 Demographics. Approximately 8.8 percent of the population in Morrill County was of racial minorities, compared to 13.9 percent for Nebraska and 27.6 percent for the U.S. Morrill County's Hispanic population was 13.6 percent, Nebraska's was 9.2 percent and the U.S. was 16 percent (USCB, 2010).

There are no centers of population along the project corridor within Study Area 1. According to the Census Bureau, the unincorporated community of Angora has a total population of three, distributed among three census blocks. All of the three are white and non-Hispanic. Slightly further west, a much larger census block has a population of eleven, all of whom are white and non-Hispanic. Note that due to the small population size, data on income is for a much larger area and there is no information available specifically for Angora.

The percentage of individuals below the poverty line in Morrill County was 14.7 percent, which reflects a little higher poverty level than those of Nebraska, at 12.4 percent, and slightly lower poverty levels than those of the United States at 14.9 percent (American Community Survey, 2008-2012).

Study Area 2 Demographics. As of 2010, the percentage of individuals below the poverty level in the City of Alliance was 23.4 percent, and the percentage of individuals below the poverty level in Box Butte County was 19.9 percent, both higher percentages than those of Nebraska, with 12.4 percent, and of the United States with 14.9 percent. A low-income housing area is located adjacent to the north end of the project area, along the east side of US 385. However, this area would be avoided during construction.

Approximately 2.5 percent of the population of Census Tract 9511, 17.3 percent of the population of Census Tract 9513, and 10.2 percent of the population of Box Butte County is made up of racial minorities. The percentage in Census Tract 9513 is higher than, and the percentage in Box Butte County and in Census Tract 9511 is lower than, that of Nebraska, with 13.9 percent. However all are lower than the percentage in the United States, with 27.6 percent. In addition, Census Tract 9511 has approximately 2.8 percent Hispanic population, and Census Tract 9513 has approximately 12.6 percent Hispanic population, compared to 10.7 percent in Box Butte County overall, 9.2 percent in Nebraska, and 16 percent in the United States.

In Census Tract 9513, the Census Block Group closest to the project is Block Group 4 (**Figure 4.2**). This group is on the east side of US 385 and extends from north of the project at West 10th Street to south of Sarpy Road, south of the City of Alliance, and to the east in an uneven boundary roughly to County Road 60. This Block Group has the highest minority (26.4 percent) and Hispanic (21.5 percent) populations in the area. This block also has a higher percentage of people below the poverty level than the rest of the census tracts in the project area.

In general, minority and low-income populations constitute a slightly higher percentage of the total populations in Box Butte and Morrill counties than for Nebraska. The population of Census Block Group 4 has a meaningfully higher population of minorities and thus has a protected population. As previously described, most of the remaining project study area is routed through rural areas that are either undeveloped or in agricultural production, and these areas do not have any protected populations.

D.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would not result in disproportionate impacts on low-income, minority, or vulnerable age populations relative to the general population.

D.4 Environmental Impacts of the Preferred Alternative

The potential adverse effects from this project for people living within the project area could include relocations of residences, right-of-way (ROW) acquisition, and access limitations during and after construction. These effects have been considered with regard to protected populations, to determine if any would suffer a "disproportionately high and adverse effect."

A "disproportionately high and adverse effect" on minority and low-income populations means "an adverse effect that: (1) is predominantly borne by a minority population and/or a low-income population; or (2) would be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority population and/or non-low-income population." (Definition from FHWA Order 6640.23A)

Relocations. The Preferred Alternative would result in the relocation of an occupied residence near MM 101.66 on the northwest side of US 385 and the relocation of two occupied residences near MM 106.40 on the southwest corner of the intersection of US 385 and Sarpy Road. According to Census Bureau data, public comment sheets, and personal communications, no known protected populations would be affected by any of the relocations.

Right-of-Way Acquisition. Approximately 40 acres of ROW would be acquired in Box Butte County, and approximately 250 acres of ROW would be acquired in Morrill County. Several efforts have been made to reduce impacts to any residents in the area from property rights acquisition. First, the project would follow an already existing roadway and would not substantially alter the current land use. Second, proposed property rights acquisition has been mostly offset to the west, where there are fewer residences.

There are no protected populations within the Morrill County study area. In Box Butte County, the protected population in Census Block Group 4 is located to the east of the existing highway (as are almost all the residences on this stretch of US 385), thus most of the ROW would be acquired to the west of the highway, minimizing impacts to residents.

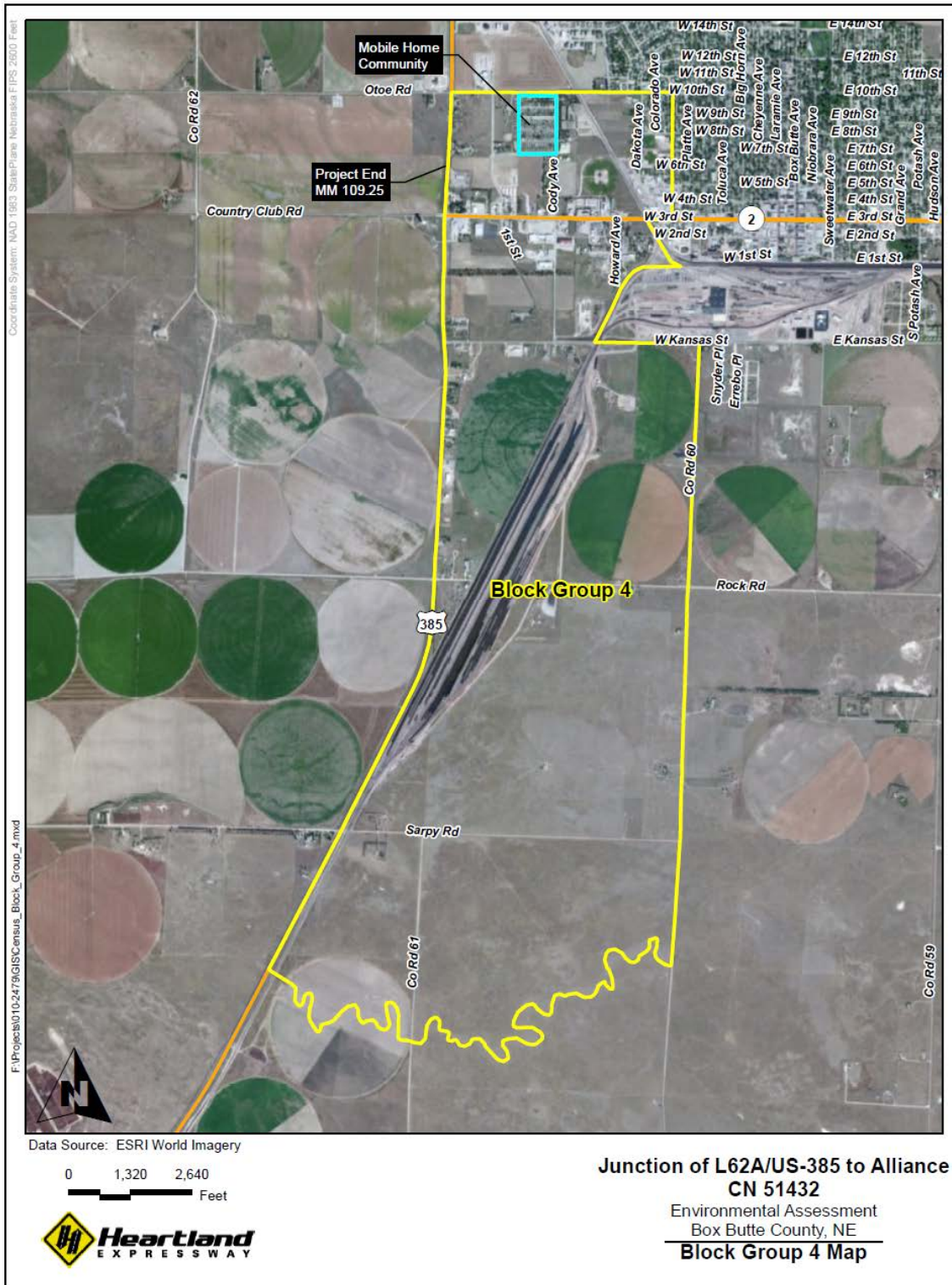
Within Census Block Group 4, ROW requirements have been minimized still further by eliminating a median and having a two-way left turn lane, thus narrowing the overall roadway. Small amounts of ROW would be needed from residences in Census Block Group 4 that front on or have driveway access to US 385, mostly for re-construction and consolidation of driveways to meet current safety standards.

As Census Block 4 covers an extensive area, in order to determine potential impacts to protected populations, an evaluation was made of the six Census Blocks within Census Block Group 4 that are immediately adjacent to US 385, extending from Otoe Road (West 10th Street) on the north to just south of Rock Road on the south. According to the 2010 Census Bureau data, this area includes a total population of 58, of which 8 (13.8 percent) are minorities (same numbers for Hispanics); this percentage is lower than the overall percentage in Census Tract 9513. Thus, the effects of acquisition of ROW from properties located adjacent to US 385 in Census Block Group 4 would not have a disproportionately high or adverse effect on the protected population in this Census Block Group. Note that no relocations are proposed for this area. **Figure 4.2** shows this block group and the low-income housing area in relation to the project terminus.

Access Limitations. Access to all residences and businesses would be provided both during and after construction. Access changes may occur during construction however at most this would consist of a few feet. All drives would be maintained in the Alliance area. Thus, access limitations would not result in a disproportionately high or adverse effect on protected populations.

The permanent impacts on social and economic conditions of L62A to Alliance, once completed, would include benefits to the cities within the corridor and the cities that the proposed project would connect by providing a reliable transportation system contributing to economic growth and productivity of the region. In addition, safety would be enhanced for residents turning onto or off of US385 by the addition of a two-way left turn lane in Alliance and a median with turn lanes at other locations.

Figure 4.2 – Census Block Group 4 and Low Income Housing



Source: U.S. Census Bureau

The adverse effects from this project would not be predominantly borne by minority/low income and would not be appreciably greater or more severe for the following reasons:

- There are no minority/low-income populations in the relocation areas.
- Within the ROW area, the population has a lower percentage of protected populations than surrounding areas.
- Temporary impacts from construction would be experienced by all residents and travelers.
- There would be no loss of access for residences during and after construction.
- There would be no loss of essential services for low income or minority populations.
- There is no disruption to patterns of travel in low income/ minority neighborhoods and no effects upon community cohesion in these neighborhoods, since the road is being improved on the existing alignment.
- After the project is completed, the project would provide an improved highway for all residents and travelers.

For these reasons, there would be no disproportionately high and adverse human health or environmental effects visited upon minority and low-income populations, as defined in FHWA Order 6640.23A.

D.5 Mitigation

No mitigation is required.

E. Cultural and Paleontological Resources

E.1 Summary

Cultural Resources

Section 106 of the National Historic Preservation Act, as amended, and implementing regulations found at 36 Code of Federal Regulations (CFR) Part 800, require that Federal agencies consider any effect a proposed action may have on historic properties.

The compliance process is generally as follows:

- Identify consulting parties.
- Identify and evaluate historic properties located within the horizontal and vertical Area of Potential Effect (APE) established for an undertaking.
- Assess adverse effects on properties listed, or eligible for listing, on the National Register of Historic Places (NRHP).
- Consult with the State Historic Preservation Officer (SHPO) and, as appropriate, the Advisory Council on Historic Preservation (ACHP) and other interested parties to resolve adverse effects.

There are four main criteria (Criterion A through D) to determine if a property is eligible for inclusion on the NRHP. A property is considered eligible if it meets one or more of these criteria, which include: (A) significant contribution to events in history, (B) lives of persons significant to our past, (C) distinctive characteristics of a type, period, or method of construction, architecture,

etc. that represents a significant and distinguishable entity; and/or (D) has yielded or may be likely to yield information important in history or pre-history.

In addition to being significant and meeting one of the four criteria for eligibility, the NRHP requires that a resource have integrity. As defined in National Register Bulletin 16A (Appendix IV: 3) integrity is “authenticity of a property’s historic identity, evidenced by the survival of physical characteristics that existed during the property’s historic or prehistoric period.” A historic property must retain enough of its essential physical features to convey its significance; this is expressed as “the characteristics of a historic property that qualify the property for inclusion in the National Register” [36 CFR §800.6(a)(1)].

Cultural resources generally include archaeological sites, historic properties, traditional cultural places, and other places where significant historic activities have taken place. These sites are often considered valuable to the human environment and measures must be taken to ensure they are treated appropriately. Additionally, the American Indian Religious Freedom Act of 1978 (P.L.95-341) requires that the effects of a federal undertaking on Native American sites or places (prehistoric or historic) that have religious, ceremonial, or sacred aspects be evaluated within the context of this law. .

Paleontological Resources

In 1959, Nebraska’s Legislature passed a law authorizing NDOR to enter into agreements with the appropriate state agencies to remove and preserve archaeological, paleontological, and historical remains when such remains were to be disturbed by highway construction. This legislation also authorized the use of highway funds for this specific purpose. This was the country’s first paleontological salvage program, the Highway Salvage Paleontology Program (HSPP) which is based on close cooperation between contractors, NDOR, and the University of Nebraska State Museum (UNSM). In areas where new construction threatens paleontologically sensitive areas, museum paleontologists follow a basic three-phase strategy of salvage pre-construction, during construction, and post construction, to recover the maximum amount of scientific information without causing construction delays.

E.2 Affected Environment

Cultural Resources

The Highway Archaeology Program of the Nebraska State Historical Society (HAP-NSHS) evaluated the potential for archaeological and architectural resources within the APE. Historical evaluations along US 385 have been occurring since 1991 and have continued to date.

A review of the Nebraska State Historical Society geographic information system (GIS) cultural resources database revealed two previously identified prehistoric archaeological sites and one possible historic trail within the APE. Therefore, an archaeological survey was completed in 2006 for the identified sites. The survey was unable to find the location of the archaeological sites, and no remaining footprint to the historic trail remains in existence (**Appendix C**).

A 2006 evaluation of standing structures identified one property that was considered potentially historic within the APE. This single structure was recommended as ineligible for listing on the

NRHP because it had been vacant for at least 20 years and had lost its setting, association, and feeling. The 2006 evaluation was re-evaluated in 2011 and 2014 and found to be satisfactory.

In 2011, Section 106 concurrence was requested by NDOR and FHWA regarding the evaluation of historical resources for this project (NH-385-3(118)) and the recommended finding of “no historic properties affected”. Concurrence was received from the SHPO on 6 February 2012 (**Appendix C**).

In 2014, Section 106 concurrence was re-evaluated by NDOR and FHWA for five (5) standing structures and a former private landfill (dump) within Angora. Additionally, NDOR and FHWA re-evaluated two (2) residences identified for demolition. Review of the properties indicated that none meet the guidelines established by the criterion described above for NRHP. The re-evaluation recommended a finding of “no historic properties affected”. Concurrence was received from the SHPO on 5 August 2014 for the Angora sites, and 25 August 2014 for the residences. (**Appendix C**).

In addition to the HAP-NSHS and GIS review, the Omaha Tribe of Nebraska Tribal Historic Preservation Officer and Pawnee Nation of Oklahoma Office of Historic Preservation also reviewed the project area for potential historical resources. Their reviews concluded that this project has no potential to adversely affect known archeological or historic tribal sites. Concurrences from the Omaha Tribe and Pawnee Nation were received on July 30 and 31, 2012, respectively (**Appendix C**).

Paleontological Resources

Paleontological resources were also evaluated in the vicinity of the L62A–US385 connection in 2011 (UNL State Museum, 2012). There were no previously reported fossil locations in the project area, although there are several within a five mile radius. Thus the evaluation indicated that fossil occurrence within the project area may be moderate to high (**Appendix D**).

E.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would result in no construction activities and, therefore, would have no effect on historic properties.

E.4 Environmental Impacts of the Preferred Alternative

Based on project review, no historic properties have been identified within the APE. Therefore, it has been determined that the proposed project would have no effect on historic properties (**Appendix C**).

For paleontological resources, there are no previously-reported vertebrate fossil localities that would be directly impacted by highway construction on this stretch of the Heartland Expressway. However, as there are several paleontological sites within a five-mile radius of the project, and in addition, the rock layers exposed in the survey area have produced fossils at other locations throughout the Panhandle, the overall potential for impacts to paleontological resources is moderate to high for this project.

E.5 Mitigation

For cultural resources, no pre-construction mitigation is required because no resources were identified.

For paleontological resources, additional field surveys and test excavations will be conducted prior to construction. The Highway Salvage Paleontology Program (HSPP) will be informed throughout the planning process with regard to alignment choice, grading details, and borrow pit locations. On-site monitoring and the fossil mitigation plan mentioned above will be implemented throughout all phases of construction.

For both cultural and paleontological resources, in the event of a discovery of archaeological or paleontological materials during construction, NDOR Standard Specifications for Highway Construction 107.10 (pg. 60, 2007) states, "The Engineer would be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation" (NDOR District Construction, Contractor).

E.6 Standard Specifications

The following specifications from the NDOR Standard Specifications for Highway Construction would apply:

- Standard Specification 107.10 – Legal Relations and Responsibility to the Public – Archaeological and Paleontological Discoveries (NDOR, 2007). In the event of a late discovery of archaeological materials, this specification states, "The Engineer would be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation."
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, and prevent damage to all public and private property.

F. Noise

F.1 Summary

NDOR conducted a noise study for the proposed project (**Appendix I**). The primary tasks for the study were to identify receivers that approached or exceeded the Noise Abatement Criteria determined for different types of receivers and to determine the relative change in traffic noise levels anticipated due to the changes in alignment. Noise levels were predicted for existing 2012 conditions, 2035 no-build conditions, and 2035 build conditions. The Traffic Noise Model (TNM) was applied using the appropriate roadway, traffic, and sensitive receiver information to predict the noise levels for each scenario.

F.2 Affected Environment

Most of the project route is in a rural environment with ranching and farming land uses. In addition, the BNSF mainline follows much of the alignment. Highway and rail traffic influence ambient noise levels in these rural areas. The north end of the environmental study area is on the western edge of the City of Alliance and has a variety of land uses that influence ambient noise, including industrial, residential, and agricultural uses, as well as rail activity.

F.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would have minimal noise impacts due to increased traffic.

F.4 Environmental Impacts of the Preferred Alternative

The predicted noise levels indicated that there are no instances of build condition noise levels substantially exceeding no-build condition noise levels in the study area (increase of 15 dBA [A weighted decibels] over the existing levels).

Results of the analysis showed that:

- No receivers experienced noise levels approaching or exceeding the Noise Abatement Criteria for the future build scenario.
- 2035 no-build noise levels increased between one (1) and two (2) dBA compared to existing levels (2012). Note that in general, a 1 dBA change is the smallest change in noise level a person can hear in a quiet environmental, and changes in traffic noise levels of one or two dBA typically cannot be detected by humans (**Appendix I**, Noise Study).
- Noise levels typically increased by 1 or 2 dBA when comparing the 2035 No-Build and build scenarios.

The noise analysis indicates that no receivers analyzed would have a noise impact in the year 2035 build scenario due to noise levels approaching or exceeding the Noise Abatement Criteria. Although two receivers would experience a noise impact in the build scenario; these residences are being acquired or relocated.

F.5 Mitigation

No mitigation is required.

G. Utilities

G.1 Summary

NDOR has the authority and responsibility to regulate utility occupancy on all state highway ROWs. In exercising this responsibility, NDOR may enter into agreements with political subdivisions regarding state highways located within their geographical boundaries. All other public roads and streets not designated as state highways are under the jurisdiction of the local political subdivisions in accordance with state statutes and local ordinances.

G.2 Affected Environment

The following known providers have utilities in the project corridor:

- SourceGas
- Charter Communications
- Valero Communications
- Century Link
- Chimney Rock Public Power District
- City of Alliance
- Pathfinder Irrigation

G.3 Environmental Impacts of the No-Build Alternative

With the No-Build Alternative, because there would be no change to the existing utilities within the environmental study area, there would be no impact.

G.4 Environmental Impacts of the Preferred Alternative

Under the Preferred Alternative, there would be a need to relocate utilities. All required utility adjustments would be coordinated through NDOR and the Contractor as per NDOR's Standard Specifications for Highway Construction. All utilities in the area have been notified of the project. Environmental impacts are not anticipated as a result of utility adjustments. A redundant service is provided so that customers do not experience the effect of being without service. This redundancy is provided in extra lines or bypassing the existing feeds prior to reconstruction of the existing lines. The utility owner is responsible for obtaining any environmental permits and approvals required for utility relocation. Disruption of utility service is not anticipated as a result of utility adjustments. The adjustment for these utilities would take place in the appropriate phase of construction. The utility companies are responsible for relocating their own facilities.

Specifically, the following may require relocation:

- Approximately 147,800 lineal feet of fiber optic lines
- Approximately 66,800 lineal feet of power lines
- Approximately 81,500 lineal feet of telephone lines
- Approximately 14,100 lineal feet of an 8-inch gas main

G.5 Mitigation

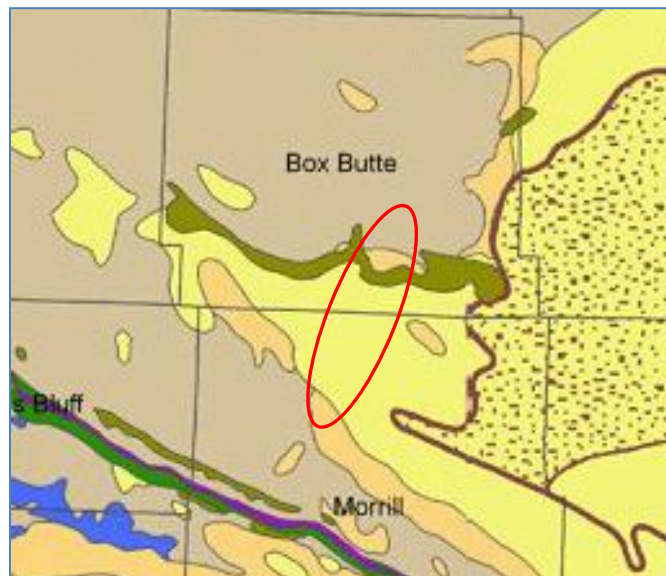
The Contractor shall follow the guidelines of NDOR's Policy for Accommodating Utilities on State Highway ROW (NDOR, 2001). It is NDOR's responsibility to notify utility companies of the need for relocation during the design stage of the project. The NDOR Utility Section would coordinate utility agreements with the utility companies prior to construction. It is the Contractor's responsibility to notify utility companies of relocation needs during the construction phase of the project for utilities that were not relocated before construction (NDOR Communications, NDOR District 5, Utility Provider(s)).

During the final design process, an environmental re-evaluation of utility work will be done if Federal funds are used for utility relocations, or if the Contractor will be responsible for any utility work whether or not Federal funds are used.

H. Land Resources and Vegetation

H.1 Summary

As described by Kaul and Rolfsmeier in *Native Vegetation of Nebraska* (1993), native vegetation along the project alignment consists of (1) Sandhills mixed-grass prairie, (2) Sandhills border mixed-grass prairie, (3) salt marshes and flats, and (4) a mosaic of mixed-grass/shortgrass prairies (Figure 4.3). Figure 4.3 – Native Vegetation of Nebraska, Kaul and Rolfsmeier, 1993.



Red oval is project location.

Yellow = Sandhills Mixed-grass Prairie
Olive = Salt Marshes and Flats

Tan = Sandhills Borders Mixed-grass Prairie
Taupe = Mosaic of Mixed-grass/Shortgrass Prairie

Sandhills Mixed-grass Prairie

This region occurs on fine sands of the dunes and interdune areas. The vegetative cover is less dense than other mixed-grass prairie types. The area is less suitable for crops and is used primarily as rangeland. Characteristic grasses and forbs include sand bluestem, hairy grama, prairie sandreed, sand lovegrass, plains sunflower, needle-and-thread, sand muhly, Sandhills ground-cherry, and little bluestem.

Sandhills Borders Mixed-grass Prairie

This region has a mixture of Sandhills and sandsage species and grows on non-gravelly soils. Characteristic grasses include sand bluestem, prairie sandreed, needle-and-thread, little bluestem, and hairy grama. Vegetation is sparse compared to prairies to the east, but wildflowers are abundant between grasses. Common species include gilia, silky prairie clover, hoary vetchling, wild begonia, and hairy puccoon. Sandsage region vegetation is similar to Sandhills mixed-grass prairie, but sand sagebrush is present. Wildflowers include yucca, prairie spiderwort, plains sunflower, bractless mentzelia, and western fleabane. Much of the sandsage prairie region has been converted to agricultural production with center-pivot irrigation. In addition, heavy grazing has resulted in a decrease in the native species with an increase of sand sagebrush.

Salt Marshes and Flats

This region contains saline marshes, ponds and flats that are subject to summer drying. Vegetation is patchy with areas of bare ground that often are encrusted with salts. Typical species include foxtail barley, three-square bulrush, salt marsh bulrush, Nevada bulrush, and Nuttall's alkali grass. While the alignment crosses the mapped vegetation type, no salt marshes or flats were observed during the field surveys.

Mosaic of Mixed-grass/Shortgrass Prairie

This region is characterized with short-grass prairie vegetation in the drier sites and mixed grass prairie in slightly more mesic sites. Shortgrass prairie species include blue grama, buffalo grass, and blackroot sedge. Mixed grass species include taller grass species such as western wheatgrass and needle-and-thread. Wildflowers include milk-vetches, scarlet gaura, cutleaf iron plant, plains phlox, miner's candle, narrow leaf beardtongue, and plains prickly pear. Much of the plant community has been converted to cropland, particularly on level land, although large expanses of this prairie type remain on the rocky escarpments. Lowlands and gentler slopes are heavily grazed and are rather weedy.

H.2 Affected Environment

The project begins in the rolling hills and side slopes of the North Platte River Valley in an area of Panhandle Mixed-grass Prairies. Heading north on US 385, the hills flatten into a wide plain in the vicinity of Angora, where dryland farming dominates the landscape. Continuing north, US 385 crosses the western edge of the Sandhills Region, including some areas of wet meadows. The Sandhills end near the Morrill/Box Butte county line, and the terrain flattens into a wide plain that extends north to Alliance and beyond. The flat landscape is almost entirely in agricultural use with widespread center-pivot irrigation and sugar beets, potatoes, corn, and beans as the dominant crops.

H.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would have no impacts on habitat.

H.4 Environmental Impacts of the Preferred Alternative

The project footprint beyond the existing ROW includes the following amounts of habitat:

- Approximately 85 acres of Sandhills prairie
- Approximately 120 acres of mixed-grass/shortgrass prairie
- Approximately 13 acres of rocky ravines
- Approximately 10 acres of wetlands
- Approximately 12 acres of irrigated cropland
- Approximately 25 acres of dryland cropland
- Approximately 25 acres of developed land

While some of this acreage would be converted to roadway pavement, much of the acreage within the footprint would be maintained as grassed ROW and roadside ditches. Due to high

groundwater in some locations, particularly within the Sandhills, it is likely that many of the ditches would support wetlands.

H.5 Mitigation

Upland vegetation disturbed by road construction would be seeded with appropriate seed mixtures. Sandy soils would be protected from erosion by best management practices (BMPs). NDOR Standard Specifications would be followed (NDOR Roadside Stabilization Unit, District Construction).

Those areas disturbed during construction would require revegetation to prevent future erosion, sedimentation, or blowout conditions. To reduce impacts on vegetation within the limits of construction and permanent ROW and to ensure successful revegetation, some or all of the following measures should be implemented:

- Develop seed mixtures, rates, and seeding dates for project areas.
- Use manure as a topdressing to help establish vegetation in nutrient-poor sandy soils.
- Apply mulch on all slopes and ensure that mulch is adequately anchored to prevent wind and water erosion.
- Implement specific procedures to prevent introducing or spreading noxious weeds.
- Conduct follow-up inspections of all disturbed areas during the project establishment phase to determine vegetation success.
- Remediate seeded areas as necessary until revegetation is successful.

The top 4 to 6 inches of soil should be saved and stockpiled during construction for re-spreading on disturbed areas.

H.6 Standard Specifications

- Standard Specification Division 800 – Roadside Development and Erosion Control
- Standard Specification Section 805 – Certified noxious weed free mulch.

I. Streams, Drainage, and Floodplain Considerations

I.1 Affected Environment

Streams

Although topographic maps show some dashed blue lines signifying streams, the project site was found to have no natural streams. On a topographic map, dashed blue lines indicate either intermittent streams that have some groundwater component and thus are characterized by flowing water for most of the year but may dry out during periods of low rainfall, or ephemeral streams that have no groundwater component and are characterized by seasonally flowing water, generally only after rain events.

The project alignment crosses a drainage identified on the topographic maps as Snake Creek. However, a site visit determined that this was an upland swale in the vicinity of the project site rather than a stream, as it did not display any channel characteristics such as a defined bed and bank, or an ordinary high water mark (OHWM). The U.S. Army Corps of Engineers (USACE)

concluded with this assessment and provided a jurisdictional determination that Snake Creek is not a waters of the U.S. (**Appendix E**)

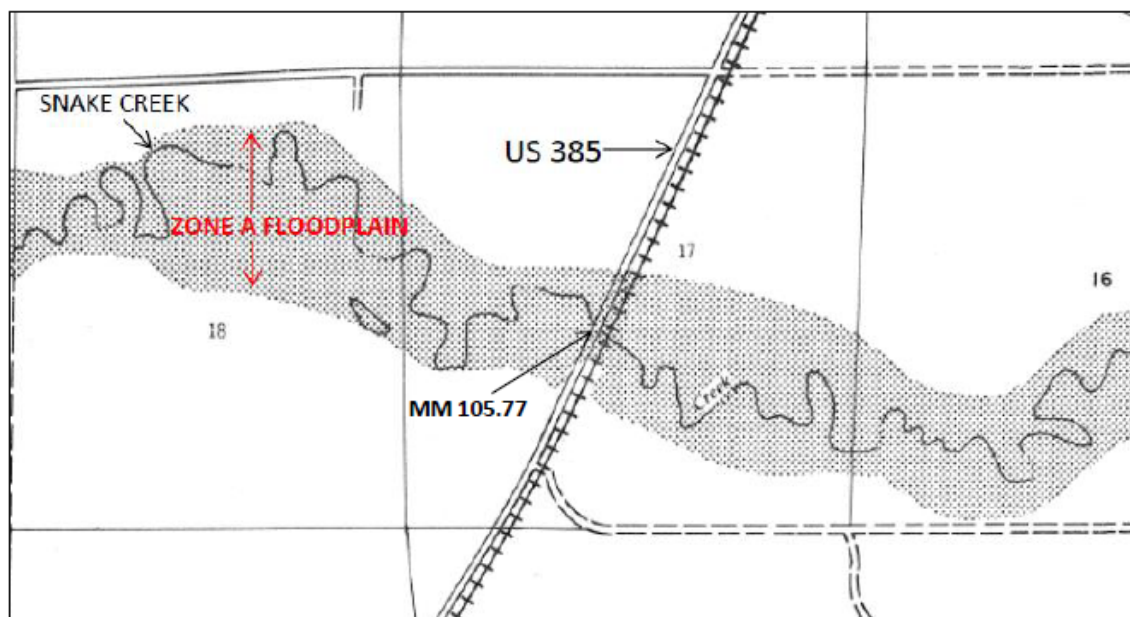
The only feature with a defined bed and bank within the project study area is the Lowline Canal, a man-made canal that supplies irrigation water to agricultural areas in the southern part of the project study area. The Lowline Canal is fed by Lake Minatare near Scottsbluff, Nebraska, and discharges into the Northport Canal. That canal appears to have a significant nexus through additional canals and possibly an unnamed tributary, which eventually drains to the North Platte River. The jurisdictional determination from the USACE indicated that the Lowline Canal is waters of the U.S (**Appendix E**)

Drainage and Floodplains

Olsson Associates (Olsson) prepared a draft drainage study for NDOR (February 2012). The study summarized the existing drainage areas in the project vicinity as mostly uncultivated agricultural land, with some center-pivot irrigated crop land located near Alliance and Angora. The drainage areas are predominantly upland, Sandhill areas with extremely high permeability soils. Most of the area in each watershed is noncontributing to runoff due to the presence of “sinks” or areas of ponding.

FEMA has mapped the area surrounding Snake Creek, approximately 3 miles south of the City of Alliance (and located in Section 17, Township 24 North, Range 48 West) as having a Zone A (100 year) floodplain. **Figure 4.4** shows the FEMA floodplain map for the Snake Creek crossing.

Figure 4.4 – FEMA Floodplain Map of US 385 Crossing of Snake Creek in Box Butte County



Source: FEMA floodplain map of Box Butte County, Community Panel Number 310416 0015 A, Effective Date 23 August 1977

I.2 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would have no impacts on streams, drainage, or floodplains.

I.3 Environmental Impacts of the Preferred Alternative

Impacts on streams, drainage, and floodplains would be limited to lengthening the box culvert at the Lowline Canal. It is likely that impacts at this location would not require mitigation; however, revegetation of the stream side slopes should follow standard provisions.

I.4 Mitigation

Nebraska floodplain regulations require any project that crosses a mapped, regulated Floodplain (100 year base floodplain) to obtain a floodplain permit. NDOR shall acquire the proper floodplain permits, and shall certify that the construction activities are in compliance with the State of Nebraska floodplain regulations.

I.5 Special Provisions

- Special Provision – Temporary Water Pollution Control (B-3-0509). Establishes the required documentation included in the Environmental Commitment Document and Project Erosion and Sediment Control Inspection.
- Special Provision – Storm Water Pollution Prevention Plan (A-20-0307). Requires the Contractor to understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES).
- Special Provision – Storm Water Discharges (A-43-0408). Requirements associated with storm water discharges from construction sites to Waters of the State of Nebraska.
- Legal Relations and Responsibility to the Public (A-43-0210). Requirements if Contractor violates any governing Federal, State, or local environmental quality regulation and/or is in noncompliance with any environmental commitment.

J. Groundwater and Wellhead Protection Areas

J.1 Summary

Nebraska Administrative Code Title 118, Groundwater Quality Standards and Use Classification, defines groundwater as “water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated” (NDEQ, 27 March 2006). Title 118 and related regulations administered by NDEQ and NDNR govern the use of groundwater in Nebraska and set standards for protection of groundwater quality to prevent contamination in designated areas (NDEQ, 13 April 2002; NDNR, 11 May 1994). The Wellhead Protection Area Act (Nebraska Revised Statute 46-1501 et seq.) provides for wellhead protection areas (WPAs) to regulate potential sources of contamination in close proximity to municipal and other public wells used to provide drinking water.

J.2 Affected Environment

The environmental study area is located over the High Plains aquifer (known as the Ogallala aquifer in Nebraska) and is one of the largest aquifers in the country, covering 174,000 square miles (USGS, 2010). Depth to the first occurrence of groundwater within the environmental study area is approximately 10 to 35 feet below ground surface (bgs). In other areas of the environmental study area, depth to groundwater ranged greatly from approximately 6 to 100 feet bgs (NDNR, 2011). Additionally, there may be areas where depth to groundwater is greater than

300 feet bgs. This is due in part to the Sandhills (sand dunes) topography where depth to groundwater may vary greatly between higher dunes and intervening valleys. Regional flow generally occurs in an east-southeasterly direction (UNL CSD, 1995).

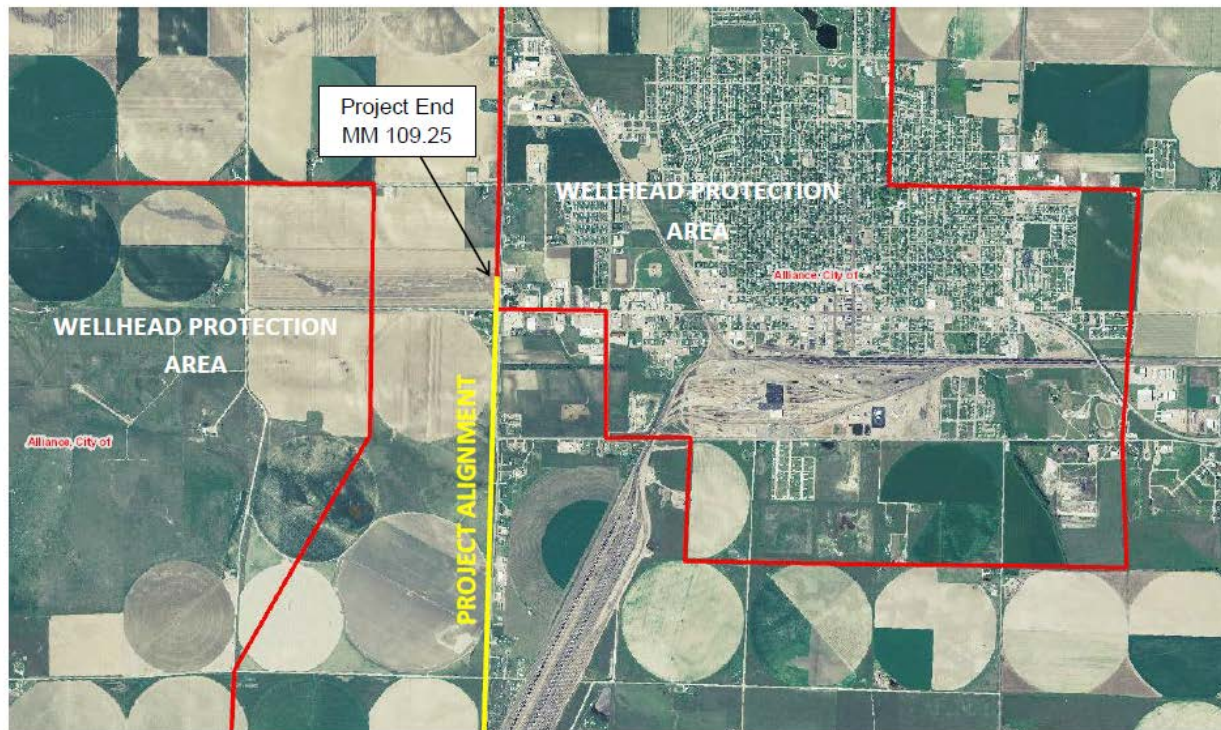
Groundwater flow may be independently influenced by water table elevations (topography) and may flow from areas with high water table elevations to areas with lower water table elevations, which may not be consistent with the direction of flow for surface water. Sites west of the project area are assumed to be potentially up-gradient relative to the project area. Confirmation of the direction of groundwater flow beneath the subject property was beyond the scope of this study.

Olsson completed a drainage study in February 2012, which indicated that the primary drainage areas along the project are predominantly upland Sandhills areas characterized by highly permeable soils. Therefore, the “majority of the area in each watershed is non-contributing” to site drainage “due to the presence of sinks or ponding areas.” For the purposes of this study, sinks are considered areas with no defined outlet or no clear drainage path.

There are sixty (60) registered active groundwater wells within the environmental study area: thirty-seven (37) groundwater quality monitoring wells, nine (9) irrigation wells, six (6) domestic drinking water wells, three (3) livestock drinking water wells, two (2) remediation/recovery wells, two (2) registered as Other (lake supply, fountain, or geothermal), and one (1) geothermal well (NDNR, 2011).

The northern 0.5-mile stretch of the project and portions of the environmental study area are within the western portion of the City of Alliance WPA. The City of Alliance WPA also includes areas by Bronco Lake, approximately 2 miles west of the city, and the Alliance Municipal Airport, approximately 2.5 miles to the southwest. These additional WPA areas are located outside the environmental study area. No other WPAs are located near the project study area. **Figure 4.5** shows the northern part of the project alignment relative to the City of Alliance WPAs.

Figure 4.5 – Location of Wellhead Protection Areas in the Project Vicinity



Source: NDEQ, <http://deqims2.deq.state.ne.us/deqflex/DEQ.html> Accessed 21 January 2013

Decreases in groundwater quality and impacts on the water table or aquifers are considered unlikely as a result of this project due to the moderate to low contaminant levels expected given moderate to low ADT, pollutant removal via vegetated swale filtration and/or infiltration of roadway runoff. Based on the location of municipal wells relative to the proposed project there is no reasonable possibility of contamination of a public water supply source, water supply treatment facility, or distribution system by this project.

J.3 Environmental Impacts of the No-Build Alternative

Groundwater and WPA concerns are not applicable to the No-Build Alternative because the need for altering the roadway configuration would not be part of this alternative.

J.4 Environmental Impacts of the Preferred Alternative

NDEQ regulates groundwater quality standards and use classifications under Title 118. Title 118 provides numerical standards for many parameters and requires that any substance introduced to groundwater, directly or indirectly, should not cause the groundwater to exceed those standards.

Several registered groundwater wells are located along the project area and within the environmental study area. Because wells in place before 1993 are not required by law to be registered with NDNR, an unknown number of unregistered wells may be located along the project area and within the environmental study area. One well located within Angora was identified to be in conflict with the proposed relocation of CR 118. Further review indicated that the well in conflict is an actively used domestic well. NDOR visited the project site on 29 August

2012, and contacted the well owner regarding the well in conflict (**Appendix F**). The well owner stated that the well is periodically used and was last used 4 to 5 years ago. They also stated that they did not have specific plans to use the well and that decommissioning the well is a possibility they would consider.

When asked if they were aware of other wells within Angora, the well owner provided information about another unregistered well located further south near the former gasoline filling/service station and grocery store located near approximate mainline MM 87.65 left. They stated this well had not been used in more than 40 years and was last known to pump sand.

Any registered or unregistered wells within the ROW to be acquired would be properly decommissioned. NDOR ROW would coordinate with the owners of wells that would be directly impacted by the proposed project. If the well is actively used, NDOR ROW would get estimates to have the property owner hire their own contractor to replace the well. NDOR ROW would then have an independent contractor decommission the well after ROW negotiations and acquisitions are complete. If the well is not in use, the Contractor would decommission the well after negotiations with the owner. A licensed water well contractor would decommission the groundwater well(s) as specified in the Nebraska Department of Health and Human Services regulations under Nebraska Administrative Code Title 178, Water Well Standards, Chapter 12, Water Well Construction, Pump Installation, and Water Well Decommissioning Standards (12 February 2005). Proper decommissioning of affected wells would not have a significant impact on groundwater quality. Please refer to **J.5 Mitigation**.

A portion of the project has been identified as being located adjacent to the City of Alliance WPA. The highway drainage features for this project include open ditches and culverts that would not have an impact on the Alliance WPA in which this project is located. Therefore, there is no identified impact on the WPA from the project; however, NDOR's Standard Specifications 107.01 and 107.09 address the Contractor's responsibility to keep fully informed of, observe, and comply with all Federal, State, and Local laws and ordinances that affect the conduct of the work (NDOR, 2007). For additional information, contact NDEQ or go to NDOR's website for a link to the NDEQ website.

J.5 Mitigation

NDOR ROW would coordinate with the owners of wells that would be directly impacted by the proposed project. If the well is actively used, NDOR ROW would get estimates to have the property owner hire their own contractor to replace the well. NDOR ROW would then have an independent contractor decommission the well after ROW negotiations and acquisitions are complete. If the well is not in use, the Contractor would decommission the well after negotiations with the owner (Contractor, NDOR ROW).

A licensed water well contractor would decommission any wells in accordance with the Nebraska Department of Health and Human Services regulations under Nebraska Administrative Code Title 178, Water Well Standards, Chapter 12, Water Well Construction, Pump Installation, and Water Well Decommissioning Standards (12 February 2005) (Contractor, NDOR ROW).

J.6 Standard Specifications

- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, replace, or restore private property.

K. Wetlands, Waters of the US, and Waters of the State

K.1 Summary

Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328). Scientists from Olsson and FHU environmental assessment teams conducted a wetland determination of the project location between 13 and 15 June 2011. Data for the field research were collected by driving the alignment to identify hydrophytic vegetation and signs of hydrology, then mapping all wetland sites using GPS in accordance with the methods set forth in the *1987 US Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, January 1987) and *Regional Supplement to the US Army Corps of Engineers Wetland Delineation Manual: Great Plains Region* (USACE, March 2010).

K.2 Affected Environment

Based on a review of existing resources and the field investigation, team members determined that twenty-four (24) distinct Palustrine Emergent Temporarily/Seasonally Flooded (PEMA/PEMC) wetlands occur within the study area. All wetlands found during the field investigation are located within the Sandhills of Nebraska. The total area of wetlands within the study area is approximately 41 acres.

These wetland types are classified according to the system developed by Cowardin et al (1972) and are defined as follows,

- Palustrine (P) refers to a type of wetland system. In the study area, the Palustrine System includes wetlands dominated by trees, shrubs, emergent plants, mosses or lichens as well as small basins that lack this vegetation but are smaller than about 20 acres and are shallower than about 6.6 feet deep.
- The Palustrine System is further divided based on type of vegetation and water regimes. Class Emergent (EM) is characterized by erect, rooted, herbaceous vegetation that grows in wet conditions (hydrophytes), excluding mosses and lichens. This vegetation is present for most of the growing season in most years.
- Water regimes for these wetlands are either Temporarily Flooded (A) or Seasonally Flooded (C). Temporarily flooded means that surface water is present for brief periods during the growing season. Plants that grow both in uplands and wetlands may be found in wetlands with a temporarily flooded water regime. Seasonally flooded means that surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years.

These wetlands are considered Sand Hills Wetlands. Most of these wetlands are natural, although some are excavated. All wetlands appear to be isolated with no significant nexus to

waters of the US. In addition to these wetlands, Snake Creek and the Lowline Canal were investigated; these are described in Section I above.

A jurisdictional determination request was submitted to the USACE in July 2012 to determine whether wetlands and waters within the study area are waters of the US (under the jurisdiction of the USACE) or Waters of the State (under the jurisdiction of NDEQ). A site visit was conducted on 24 October 2012, and the USACE made a determination in December 2012 that Snake Creek is not a waters of the US but is an upland swale, and that only the Lowline Canal was a waters of the US. All wetlands on the site were determined to be Waters of the State. More information on the wetlands and other waters, including location maps, can be found in **Appendix E**.

K.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would have no impact on any additional wetlands.

K.4 Environmental Impacts of the Preferred Alternative

At this time, only preliminary impacts are known due to the level of design that has been done. Preliminary impacts indicate that the Preferred Alternative would have an impact on approximately 10 acres of wetlands. In addition, extended or additional box culverts would be required at the Lowline Canal and Snake Creek crossings.

As the USACE has determined that all the wetlands that occur on the project site are Waters of the State, permanently impacted wetlands would require mitigation as determined in coordination with NDEQ. The typical wetland creation ratio for replacement of impacted wetlands ratios is 1.5:1, thus requiring approximately 15 acres of mitigation wetlands to offset approximately 10 acres of wetland impacts. However, at the discretion of NDEQ, impacted wetlands occurring within roadside ditches may be mitigated on-site at a 1:1 ratio, if the project design allows for the creation of new ditch wetlands adjacent to the impacted areas. Appropriate mitigation sites would require adequate hydrology and would be seeded with a mix of hydrophytic grasses and sedges appropriate for the region to create in-kind replacement. Monitoring the progress of vegetation establishment and evaluating hydrology would be required to ensure the success of the mitigation wetland areas (NDOR Environmental).

K.5 Mitigation

During final design, NDOR will coordinate with NDEQ concerning requirements for compensatory mitigation for Waters of the State. In addition, any potential compensatory mitigation sites will be environmentally reviewed prior to construction.

Before any construction work, NDOR would obtain a Section 404 permit from the USACE if impacts on waters of the US are anticipated, as well as a Letter of Opinion of Non-Degradation from NDEQ for Impacts to Waters of the State (NDOR Environmental).

NDOR would obtain a Construction Storm Water (CSW) Permit from NDEQ under the NPDES and would produce an associated Storm Water Pollution Prevention Plan (SWPPP) before submitting the Notice of Intent (NOI). Additionally, NDOR is required as part of their Municipal Separate Storm Sewer System (MS4) permit to report annually to NDEQ on the status of post-construction activities. NPDES requirements include the evaluation of impaired and unique

waters as part of the CSW NOI, SWPPP preparation, and MS4 permit (NDOR Roadside Stabilization Unit). Platte River Depletions

L. Platte River Depletions

L.1 Summary

Governors of Colorado, Nebraska, and Wyoming, and the US Department of the Interior signed the Platte River Recovery Implementation Program (PRRIP) in 2006, with an effective date of 2 January 2007. Habitat of the interior least tern, piping plover, and pallid sturgeon may be affected by water depletions in the Platte River basin resulting from the potential impoundment of surface water runoff in borrow sites or excavation that exposes groundwater that is hydrologically connected to the river, thereby depleting the river through increased evapotranspiration (PRRIP, 24 October 2006).

L.2 Affected Environment

Because the portion of the project located in Morrill County is within the Platte River drainage basin, it has the potential to have an impact on Platte River flows related to water depletion concerns.

L.3 Environmental Impacts of the No-Build Alternative

Platte River depletion concerns are not applicable to the No-Build Alternative because the need for borrow would not be part of this alternative.

L.4 Environmental Impacts of the Preferred Alternative

Stormwater drainage culverts and open ditches are planned for conveying stormwater runoff from the facility in the preliminary design of the Preferred Alternative. Therefore, stormwater runoff would not be detained and all water would remain in the same drainage basin, thereby meeting the US Fish and Wildlife Service (USFWS) *de Minimis* determination (USFWS 2009, <http://www.fws.gov/platteriver/deminimisREVNOV2009.htm>). Operational or maintenance activities would not expose groundwater. According to the USFWS website concerning ESA coverage under the Program, if it is below the threshold for *de Minimis*, consultation is not required.

L.5 Mitigation

The Contractor would be required to provide the needed borrow material and would identify a source of material that does not include dredging Platte River sediment. The Contractor shall try to obtain borrow material from an upland site to prevent depletion issues and would be required to submit a Materials Source Site Identification and Evaluation form to NDOR and USACE. After receiving the form, NDOR would forward the Material Source Form to the USFWS, NGPC, DNR, and HAP-NSHS (NDOR Environmental, District Construction, Contractor).

If the borrow site is located within a depletion area of concern and it is identified that it would pond water after excavation, NDOR would determine project-related impacts by calculating the evaporated loss of water at the borrow site, by using the Natural Resource Conservation Service (NRCS) – US Department of Agriculture (USDA) Consumptive Use Calculator. For

borrow sites/detention basins that would result in the exposure of groundwater in the North Platte River Basin, NDOR would submit the borrow site request information to the NGPC and USFWS. This would be done to determine ways to avoid depletions or provide offsets if depletions are to occur. Requests for borrow sites that occur outside the Platte River watershed would be submitted to the DNR for tracking surface water depletions (NDOR Environmental, District Construction, Contractor).

Borrow sites that expose groundwater and are obtained outside the PRRIP areas would be offset according to the Biological Opinion prepared by NGPC in accordance with the Nebraska Nongame and Endangered Species Conservation Act. Borrow sites that pond water and occur outside the PRRIP area and the Platte River watershed would be calculated using the NRCS Consumptive Use Calculator and submitted to the DNR to be included in the report to the Governance Committee (NDOR Environmental, District Construction, Contractor).

L.6 Standard Specifications

- Standard Specification 205.02 – Excavation and Embankment – Material Requirement (NDOR, 2007). Contractors are required to provide clean earth fill that is of approved suitable materials for roadbed and embankments.

L.7 Special Provisions

- Special Provision – Borrow Site Approval (B-1-0408). Requirements associated with the embankment materials, and borrow site approval.

M. Noxious Weeds

M.1 Summary

Noxious weeds, which are invasive species that are monitored because of their tendency to degrade natural ecosystems and native plant communities, could be introduced. The State of Nebraska regulates noxious weeds. Several regulations and guidelines pertain to noxious weeds and invasive species, including EO 13112, Invasive Species (64 FR 6183), the Nebraska Noxious Weed Control Act (Nebraska Department of Agriculture, June 2008), and the Nebraska Noxious Weeds Regulations (Nebraska Department of Agriculture, December 2008).

EO 13112 states that all projects would, "...subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: i) prevent the introduction of invasive species; ii) detect and respond rapidly to, and control, population of such species in a cost-effective and environmentally sound manner; iii) monitor invasive species population accurately and reliably...[and] iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded..." (64 FR 6183). The Nebraska Noxious Weed Control Act states that all landowners must manage noxious weeds that may be damaging to adjacent landowners (Nebraska Department of Agriculture, June 2008).

The list of noxious weeds of Nebraska includes the following that occur statewide (Nebraska Weed Control Association, 2012):

- Musk thistle (*Carduus nutans*)
- Leafy spurge (*Euphorbia esula*)

- Canada thistle (*Cirsium arvense*)
- Plumeless thistle (*Carduus acanthoides*)
- Spotted and diffuse knapweed (*Centaurea diffusa*, *C. maculosa*, and *C. stoebe*)
- Purple loosestrife (*Lythrum salicaria* and *L. virgatum*)
- Saltcedar (*Tamarix ramosissima* and *T. parviflora*)
- Common Reed (*Phragmites australis*)
- Japanese knotweed (*Fallopia japonica*)

In addition to the state listed noxious weeds, these plants are considered noxious by counties:

- Field bindweed (*Convolvulus arvensis*) – Box Butte and Morrill County
- Scotch thistle (*Onopordum acanthium*) – Morrill County

The Nebraska Invasive Species Council has developed Nebraska's Watch List for Invasive Species, which is a list of possible invasive plants to monitor for their spread and impacts on surrounding areas. The listed plants may be on adjoining states' noxious weeds lists or may have an impact on agriculture or ecosystems of Nebraska. The species list is available at <http://www.newweed.org/Documents/Watchlist.pdf>.

The Watch List includes the following invasive species that occur in the project region:

- Russian knapweed (*Acroptilon repens*)
- Black knapweed (*Centaurea moncktonii*)
- Houndstongue (*Cynoglossum officinale*)
- Goat's-rue (*Galega officinalis*)
- Yellow bedstraw (*Galium verum*)
- Saltlover (*Halogeton glomeratus*)
- Henbane (*Hyoscyamus niger*)
- Perennial pepperweed (*Lepidium latifolium*)
- Eurasian water-milfoil (*Myriophyllum spicatum*)
- Sulphur cinquefoil (*Potentilla recta*)

M.2 Affected Environment

The project environmental study area is primarily made up of roadways, grasslands, and agricultural production areas. As such, the vegetation in any one area may include both native and exotic species adapted to the drier conditions of the western Great Plains. However, areas along roadways and agricultural fields may be highly or more frequently disturbed, allowing for a larger variety of vegetative species. The beginning of the project along L62A, the environmental study area, is located within the shortgrass prairie ecosystem and primarily grassland outside the ROW. The exception to this is the irrigated agricultural fields that exist near MM 7.0 along L62A. The vegetative community within this area is termed "black-root sedge" due to the prevalence and variety of an upland *Carex* species. Further north within the Sandhills Ecoregion, a community of hydrophytic (water-loving) wetland vegetation was identified near

MM 94.0 and was primarily composed of sedges, rushes, and wetland grasses. Toward the end of the environmental study area, near Alliance, vegetation consists of mowed lawns and landscaping, including ornamental trees and shrubs. Overall, vegetation within the environmental study area is considered typical of the region.

None of the Watch List invasive species were observed during the site reconnaissance.

M.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would result in neither disturbance nor improvement to the proposed site's vegetation composition.

M.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would require the conversion of grassland areas in the vicinity of the sweeping curve, tree removals, and clearing and grubbing along US 385. These wooded locations consist primarily of volunteer species on steep slopes.

M.5 Mitigation

No mitigation is required.

M.6 Standard Specifications

- Standard Specification 202.01(4)(d) – Clearing and Grubbing (NDOR, 2007). Trash, dead trees, and vegetation in the ROW limits and beyond the limits of construction shall be disposed of by the Contractor.
- Standard Specification 803.02 – Seeding – Material Requirements (NDOR 2007). Requirements associated with seeding methods, rates of application, and seed mixtures.
- Standard Specification 803.03 – Seeding – Construction Methods (NDOR, 2007). Requirements associated with planting season and methods.
- Standard Specification 806.02(4)(c) – Sodding – Material Requirements (NDOR, 2007). Requirements associated with sod material and placement.
- Standard Specification 807 – Erosion Control (NDOR, 2007).

N. Endangered Species Act, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and Fish and Wildlife Coordination Act

N.1 Summary

Endangered and Threatened Species

Federally listed endangered and threatened species are protected under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.). Adverse effects on a federally listed species or its habitat would require consultation with the USFWS under Section 7 of the ESA. Section 7 of the ESA of 1973, as amended, requires Federal agencies to ensure that actions that they authorize, fund, or carry out are not likely to jeopardize the continued existence of proposed, endangered, or threatened species or result in the destruction or adverse modification of their critical habitat. State listed endangered and threatened species are

protected under the Nebraska Nongame and Endangered Species Conservation Act (NESCA). The Nebraska Game and Parks Commission (NGPC) administers the NESCA.

Bald and Golden Eagles

Bald and golden eagles have specific protection under the Bald and Golden Eagle Protection Act (16 USC 668-668c.), which is administered by the USFWS. Protections under this act prohibit “take” of bald and golden eagles. The project was reviewed for potential impacts to bald and golden eagles. Bald eagles use tall trees for roosting or nesting, and nearby open water for foraging; golden eagles use shortgrass and mixed-grass prairies for foraging, and rocky cliffs, tall trees and other high places for nesting.

Migratory Birds

Under the Migratory Bird Treaty Act (MBTA) (16 USC 703-712: Ch. 128 *as amended*), construction activities in grassland, wetland, stream, and woodland habitats, and those that occur on bridges (for example, which may affect swallow nests on bridge girders) that would otherwise result in the taking of migratory birds, eggs, young, and/or active nests should be avoided. Although the provisions of MBTA are applicable year-round, most migratory bird nesting activity in Nebraska occurs during the period of 1 April to 15 July. However, some migratory birds are known to nest outside the aforementioned primary nesting season period. For example, raptors can be expected to nest in woodland habitats during 1 February through 15 July, whereas sedge wrens, which occur in some wetland habitats, normally nest from 15 July to 10 September.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC 661-667e, Ch. 55 *as amended*) provides the basic authority for USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. This act requires Federal agencies that construct, license, or permit water resource development projects to first consult with USFWS and the State fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts. The project was evaluated for potential impacts to fish and wildlife.

N.2 Affected Environment

Informally FHWA and NDOR have met with USFWS and NGPC throughout the development of the EA. The initial meeting to discuss the project occurred on 29 November 2011. The primary concerns of USFWS and NGPC were the prairie dog colony near the sweeping curve and the habitat connectivity of the swift fox. Requested information on the prairie dog colony and its relationship to the sweeping curve alignments (Phase III) was provided to USFWS and NGPC in memos dated 3 June 2011 and 4 November 2011. A Biological Assessment (BA) was prepared and approved by NDOR in compliance with the *Nebraska Programmatic Agreement for the Federal Aid Transportation Program* (January 2012).. FHWA signed the BA on 29 April 2012 and submitted the BA to USFWS and NGPC requesting their concurrence that the project “**may affect, not likely to adversely affect**” the Black-footed Ferret, Blowout Penstemon, and Swift Fox. USFWS concurred on 1 May 2014 and NGPC concurred 16 May 2014. (See **Appendix G** for agency coordination letters.)

Endangered and Threatened Species

Table 4.3 identifies State and federally listed endangered and threatened species that may potentially be located within the project study area based on the NDOR Species Evaluation Parameter (SEP) Form. For all other listed species in Morrill and Box Butte counties not included in **Table 4.3** a determination of No Effect has been made due to a lack of suitable habitat for the species.

Table 4.3 – Federal- and State-Listed Species with Suitable Habitat in Project Area

Common Name	Scientific Name	Status
Black-footed ferret	<i>Mustela nigripes</i>	Federal and State Endangered
Swift fox	<i>Vulpes velox</i>	State Endangered
Blowout penstemon	<i>Penstemon haydenii</i>	Federal and State Endangered

The northern long-eared bat (*Myotis septentrionalis*) is proposed to be federally listed as endangered; therefore, the project was also investigated for its potential to impact the northern long-eared bat.

Bald and Golden Eagles

The project area contains no suitable habitat for the bald eagle (tall trees for roosting or nesting that are located close to open water for foraging). Golden eagles use shortgrass and mixed-grass prairies for hunting, and they prefer rocky cliffs, tall trees, and other high places for nesting. Some rocky ledges are present northwest of the junction of L62A/US385, and a landowner in the area has reported seeing golden eagles on his property. It has been determined that suitable habitat for golden eagles does exist within 0.5 mile of the environmental study area. If construction would begin between February 1 and April 15, a nest survey must be completed at least 1 but not more than 14 days prior to construction. If construction would begin between April 15 and October 1, a nest survey completed in March is sufficient, as nests would likely already be constructed if nesting would occur that year. However, a nest survey may be completed anytime during this timeframe, as long as it is completed prior to construction. If golden eagles are nesting in the area, consultation with NGPC and USFWS would be required.

Migratory Birds

Outside the existing roadway, the project area is primarily grasslands and prairie pastures; however, two separate areas may be distinguished regarding migratory bird species. In the northern section of the project area, near Alliance, trees and brush thickets associated with residences may provide nesting habitat for woodland nesting migratory bird species. Areas near houses and buildings may provide other resources available for various woodland bird species. South of Alliance, where pastures and grasslands dominate the landscape, the community of migratory bird species is more likely to consist of ground nesting bird species. Ground nesting birds prefer locations that provide, among other things, ample cover for protection from the elements and predators. However, ledge or outcrop nesters may also have suitable nesting locations in this southern area due to the varied topography.

Fish and Wildlife Coordination Act

Olsson completed a wetland delineation of the project area on June 13–15, 2011 (see **Section K. Wetlands, Waters of the US, and Waters of the State** for a detailed discussion). Based on current project design, this project may require a Section 404 permit from USACE. A Corps Jurisdictional Determination received on 3 December 2012 concluded Lowline Canal is a jurisdictional water of the U.S.; however, Snake Creek and the 24 identified wetland areas are non-jurisdictional. At this time, impact calculations are not yet known.

N.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would have no impact on endangered and threatened species, bald and golden eagles, or migratory birds because there would be no new disturbances in the project environmental study area other than general maintenance and repair of the existing roadways. This type of activity generally occurs within the existing footprint of the roadway. Therefore, endangered and threatened species and migratory bird resources would not be expected to be adversely affected by the No-Build Alternative.

N.4 Environmental Impacts of the Preferred Alternative

Black-footed Ferret

No black-footed ferrets have been observed in the project area. Effects on black-footed ferret from the proposed construction were primarily focused on a potential reintroduction site, the existing prairie dog colonies north and south of the intersection of US 385 and L62A; these colonies comprise a 1,000-acre prairie dog complex. This site is considered “intermediate suitable” for black-footed ferrets due to the size and long-term viability of the prairie dogs in this location.

The Preferred Alternative would change the priority traffic movement from US 385 to the Heartland Expressway (L62A). The Preferred Alternative would impact 9.6 acres of prairie dog colony. The old L62A pavement would be removed and the area reseeded. A potential benefit to black-footed ferret would be the connection of two prairie dog colonies that are currently separated by L62A. Their connection would create a single, larger colony that would be more suitable for black-footed ferret. The relocation of the road from its current location to north of the prairie dog complex would reduce the potential of road mortality of ferrets.

Direct effects from construction activities would be temporary in nature and would primarily occur outside of potentially suitable habitat for black-footed ferret. Direct effects from animal-vehicle collisions would be considered an adverse effect to a ferret population. However, the Preferred Alternative was selected in part because it would move the highway north of the potentially suitable habitat, decreasing the likelihood of potential ferret-vehicle mortality. Therefore, direct effects from construction and vehicle-ferret collision would be minimal and considered discountable.

Indirect effects of the Preferred Alternative would be beneficial as the roadway would be moved north and the old road bed would be restored to native grass. This would connect approximately 60 acres of the prairie dog colony to the approximately 1,000-acre colony located south of L62A, increasing ferret habitat.

Cumulative effects to black-footed ferret are unlikely as a result of this project. Although Nebraska Revised Statute 23-3803, The Black-tailed Prairie Dog Management Act, could affect potential habitat throughout the state, the act does not have any bearing on black-footed ferret reintroduction at the project site. The USFWS considers this site to be a viable reintroduction site and has management actions in place for prairie dogs. The project would have no measurable cumulative effect on black-footed ferret.

Based on this analysis, the project would have discountable effects to black-footed ferret and would potentially benefit black-footed ferret reintroduction habitat. NDOR and FHWA have determined this project **may affect**, but is **not likely to adversely affect** black-footed ferret. For more details of the black-footed ferret analyses, see the project's Biological Assessment (can be obtained by contacting NDOR or FHWA).

Blowout Penstemon

Blowout penstemon is a perennial herb that exists almost exclusively in sand dune blowouts, a common feature of the Nebraska Sandhills and surrounding areas. Thus, blowout penstemon may be considered a species affected by proposed construction activities since sand dune blowouts were found within the project study area. Construction impacts on blowout penstemon were considered for the entire project study area; however, only the middle section of the route occurs within the Sandhills (from north of Angora to the Morrill/Box Butte county line).

Surveys were conducted and no blowout penstemon was identified in the study area; there are no records of blowout penstemon within 5 miles of the study area. Thus it is unlikely to be impacted by the project. NDOR and FHWA have determined that the project **may affect**, but is **not likely to adversely affect** the blowout penstemon with the incorporation of conservation commitments. Results of the survey can be found in the project Biological Assessment (can be obtained by contacting NDOR or FHWA).

Swift Fox

Suitable habitat for the swift fox is present in the project area and consists of shortgrass prairie, generally along L62A and US 385 from the Lowline Canal to just north of Angora. There is approximately 104 acres of suitable habitat within the Limits of Construction. Other locations along the project corridor are considered marginally suitable habitat. Along this segment of the roadway, the speed limit would remain unchanged and traffic volumes are expected to increase only minimally by 2035. In the area of the sweeping curve, the road has been designed to provide a wide grassy median (40-ft wide) which would serve as a rest area between crossings and would allow for greater sight distance for both animals and drivers.

Project impacts at swift fox den sites could result from construction activities involving soil disturbance, and fencing could hinder movement of the species. Thus, implementation of conservation measures would be necessary to avoid adverse effects. NDOR proposes to implement special conservation conditions that would limit the fencing type to kinds that are non-restrictive to swift fox, and would enhance habitat through the installation of artificial escape dens (see **Section P.5 Mitigation**). Artificial den locations would be determined through further consultation with NGPC to determine the appropriate number and placement of the dens in the

landscape and may be related to the estimated number of swift fox within the area of suitable habitat.

NDOR also proposes to require a survey for active dens prior to construction, limitation of construction activities to times when dens are inactive, and closure of inactive dens. Implementation of the proposed conservation measures listed below (see **Section N.5 Mitigation**) would result in a “may affect, not likely to adversely affect” determination for swift fox.

Direct effects from project construction would be considered discountable because surveys would be conducted for active swift fox dens prior to construction. If active dens are present, construction activities would be limited to times when the dens are inactive. The expansion of the roadway from a two-lane to a four-lane highway would increase the amount of pavement the fox would need to cross. While the roadway would provide a wide grassy median as a rest area for the fox and allow greater visibility of vehicles by foxes, roadways can be a source of vehicle-related mortality, particularly for juvenile foxes. The potential direct effects of mortality from swift fox-vehicle collision along the roadways would be offset by the beneficial effects of the artificial escape dens that allow foxes to avoid predation (**Appendix G**).

Indirect effects of the project would include the impact of an estimated 104 acres of potentially suitable habitat for the swift fox by converting grasslands to pavement and adding grassed medians and shoulders. However, given the configuration of the acres impacted by the project in combination with the amount of potentially suitable habitat in the area, it is not likely that the project would have a long-term adverse impact on swift fox. Some indirect effects of the Preferred Alternative would be beneficial such as moving the L62A roadway to the north, reseeding the old road bed to shortgrass prairie, and reconnecting approximately 60 acres of prairie dog colony to the larger colony located south of L62A. The reconnection would increase habitat connectivity for prairie dogs, benefiting swift fox.

Cumulative effects may involve the completion of the Heartland Expressway. Construction of the Heartland Expressway has resulted in a loss of shortgrass prairie habitat in Nebraska and other states, and its completion may result in additional loss. Completion of the Heartland Expressway would consist of widening existing 2-lane roadways, generally a lesser impact than new alignments. Mitigation strategies implemented on the L62A/US 385 project would offer habitat enhancement for swift fox and would not contribute to cumulative impacts from the overall Heartland Expressway Corridor. It is not anticipated or reasonably foreseeable that any economic growth would occur near suitable swift fox habitat along the project corridor.

With the implementation of the proposed conservation measures listed below (see **Section N.5 Mitigation**), NDOR and FHWA have determined that the project **may affect**, but is **unlikely to adversely affect** the swift fox. For more details of the swift fox analyses, see the project’s Biological Assessment (can be obtained by contacting NDOR or FHWA).

Northern Long-eared Bat

The project area is mostly categorized by rolling Sandhills and shortgrass prairie habitat. Very few trees exist within the current project’s limits of construction. Based on aerial review, it

appears there would likely be approximately 15 to 20 trees to clear, with the majority of the species being Eastern red cedar and a few deciduous species. In Angora and a few isolated farmstead locations, it appears the project may require the clearing of a metal barn, grain silos, and a few houses and sheds. Based on current known habitat requirements for northern long-eared bat, the project area does not appear to be suitable, as it is west of the species' primary range and likely does not provide suitable winter hibernacula sites nearby. The majority of the trees that would be cleared do not consist of suitable size and type used by this species for summer roosting. Based on the lack of suitable habitat within the project area, this project would have **No Effect** on northern long-eared bat.

Bald and Golden Eagles

Bald eagles are unlikely to be affected by the Preferred Alternative because there is no suitable habitat in the vicinity of the project. Golden eagles use shortgrass and mixed-grass prairies for hunting, and they prefer rocky cliffs, tall trees, and other high places for nesting. Some rocky ledges are present northwest of the junction of L62A/US385, and the Preferred Alternative includes construction activities both along and off the current alignment in this vicinity. Although it is possible that the Preferred Alternative and the associated construction activities in the project area would disturb golden eagles, there is unlikely to be any significant adverse effects due to the fact that NGPC has no records of golden eagle nests in the project area, and NDOR would use associated mitigation measures that include following a Golden Eagle Survey Protocol (**Appendix G**).

Migratory Birds

The migratory bird communities that are mostly likely to be present within the project environmental study area correspond to two habitat types: grasslands and urban woodlands. Thus, the south, middle, and portions of the north segments (Morrill-Box Butte county line to approximately Alliance) correspond to grassland nesting migratory birds, and the far northern segment, in and near Alliance, most likely consists of more habitat generalist bird species. In the grassland areas, the Preferred Alternative includes construction activities both along and off the current alignment, while in the northern segments activities are along the current alignment. A survey for the Sweeping Curve Alternative was conducted in June 2011 to document wildlife, including migratory birds, in grassland areas where construction would occur. That survey identified migratory birds (**Table 4.4**).

It is likely that the Preferred Alternative and the associated construction activities in the project area would temporarily disturb migratory bird activity. However, with associated mitigation measures in place, it is likely that disturbance would be minor or negligible.

Table 4.4 – Migratory Birds Identified during Sweeping Curve Wildlife Survey

Common Name	Scientific Name	Common Name	Scientific Name
American crow	<i>Corvus brachyrhynchos</i>	Mourning dove	<i>Zenaida macroura</i>
Burrowing owl	<i>Athene cunicularia</i>	Common nighthawk	<i>Chordeiles minor</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	Red-tailed hawk	<i>Buteo jamaicensis</i>
Horned lark	<i>Eremophila alpestris</i>	Red-winged blackbird	<i>Agelaius phoeniceus</i>

Lark sparrow	<i>Chondestes grammacus</i>	Swainson's hawk	<i>Buteo swainsoni</i>
Lark bunting	<i>Calamospiza melanocorys</i>	Upland sandpiper	<i>Bartramia longicauda</i>
Meadowlark	<i>Sturnella neglecta</i>	Western kingbird	<i>Tyrannus verticalis</i>

Fish and Wildlife Coordination Act

Any impacts to vegetated areas would be revegetated per BMPs included in the erosion control plan. A Temporary Erosion Control Plan shall be developed before beginning construction to avoid impacts to fish and other aquatic organisms. This plan would show the BMPs necessary at the beginning of the projects and would be updated as BMPs are added or modified throughout the construction process. When land disturbances are greater than or equal to one acre, the Temporary Erosion Control Plan would be a component of the NDOR's SWPPP.

Comprehensive and effective erosion and sediment control measures shall be implemented throughout the construction process to minimize the likelihood of sediment discharges. NDOR promotes the use of sediment and erosion control techniques in combination with each other, rather than as stand-alone BMPs to improve the effectiveness of these BMPs. Please refer to NDOR's "Construction Stormwater Best Management Practices" Pocket Field Guide for additional information concerning NDOR's recognized BMPs. USFWS recommended BMPs are included with their concurrence in **Appendix G**.

BMPs are considered during all stages of the project's planning and design. They are implemented and maintained for the duration of the construction project and until the vegetation on the project sites has been re-established. Per the plans, the site would be vegetated with a perennial seed mixture containing native species. Most of the vegetated areas to be disturbed consist mainly of non-native cool season grasses; therefore, the use of the native grass species in the seed mixture should have a beneficial effect to terrestrial resources. An inspection and maintenance schedule is being developed and implemented on all projects that require a SWPPP to help ensure effectiveness of the BMPs. The SWPPP also requires the Contractor must provide a spill prevention plan. The spill prevention plan is reviewed during each inspection, as required by the Construction Stormwater Permit.

NDOR is committed to protecting Nebraska's water resources. Through design, construction, and establishment phases of each project, erosion and sediment control BMPs are being considered, installed, and maintained to help ensure that sediment discharges are minimized to the maximum extent practicable. Culverts are designed to allow appropriate conveyance values and prevent excessive erosion, as well as allow aquatic species passage when water is present in the channel.

The most frequently observed crash patterns along the corridor were animal (deer) related collisions representing 35 percent to 38 percent of the reported collisions. The average across the statewide highway system in 2009 was 22.6 percent but varies considerably by county based on the local deer population. A detailed analysis of deer vehicle collisions along the project corridor was conducted to identify any potential animal-vehicle collision hotspots (see 31 July 2014 memo in **Appendix G**). NDOR compared 8 years of data to the state average and

found the average number of Deer Related Collisions along the entire study corridor equates to 0.30 crashes/mile/ year. This was consistent with the statewide average of 0.29 animal crashes/mile/year on state highways in 2009. The data also showed that animal-vehicle collisions are randomly distributed along the project corridor with no identified hotspots (2 or more crashes per mile per year). No fragmented riparian corridors or other habitat pathways that might attract animals were identified during this analysis. The widening from 2 lanes to 4 lanes would provide some improvement in sight distance and a driver's ability to react to deer adjacent to the roadway.

Overall, the impacts to fish and wildlife resources from this Preferred Alternative would be minimal and considered discountable.

N.5 Mitigation

The concurrence package for the project, approved by FHWA, USFWS, and NGPC (**Appendix G**), includes the following conservation conditions and survey protocol that will be required for the project based on interagency coordination and the Programmatic Agreement for Endangered and Threatened Species (and covering Bald and Golden Eagle Protection Act [BGEPA], and MBTA). The Responsible Party for the measure is found in parentheses.

- **Changes in Project Scope.** If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from FHWA. (*District Construction, Contractor*)
- **Conservation Conditions.** Conservation conditions are to be fully implemented within the project boundaries as shown on the plans. (*District Construction, Contractor*)
- **Early Construction Starts.** Request for early construction starts must be coordinated by the Project Construction Engineer with NDOR Environmental for approval of early start to ensure avoidance of listed species sensitive lifecycle timeframes. Work in these timeframes will require approval from FHWA and could require consultation with USFWS and NGPC. (*District Construction, Contractor*)
- **E&T Species.** If federal or state listed species are observed during construction, contact NDOR Environmental for a reference of federal and state listed species. (*NDOR Environmental, District Construction, Contractor*)
- **Refueling.** Refueling will be conducted outside those sensitive areas identified on the plans, in the contract, and/or marked in the field. (*Contractor*)
- **Restricted Activities.** The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (*stationing, reference posts, mile markers, and/or section-township-range references*) of the project, within the ROW designated on the project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites. Any project-related activities that occur outside these areas must be environmentally cleared/permitted with NGPC, as well as any other

appropriate agencies by the Contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The Contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of 4 different ground photos showing the existing conditions at the proposed activity site, depth to ground water and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager will notify NDOR Environmental which will coordinate with FHWA for acceptance if needed. The Contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. (NDOR Environmental, District Construction, Contractor)

- **Waste/Debris.** Construction waste/debris will be disposed of in areas or a manner that will not adversely affect state and/or federally listed species and/or designated critical habitat. (Contractor)
- **Fencing.** When project-related fence construction/relocation work is required to be done prior to the start of construction and if the fence work occurs outside urban or cropland areas not within swift fox or mountain plover range, then fencing can be installed/relocated at any time using the following criteria:
 - a. The fencing is temporary in nature and/or consists of only hand-driven posts
 - b. The work does not compact the soils (for example, through the use of heavy equipment) or cause soil disturbance beyond the driving of posts
 - c. Within the **whooping crane** migration corridor, work occurring within 0.5 mile of wetlands or perennial waters will occur between the hours of 10:00 am to 4:00 pm when the work is between March 10 to May 10 or September 16 to November 16

If the fencing work cannot meet these criteria, then NDOR Right-of-Way Division shall coordinate with NDOR Environmental prior to the completion of ROW negotiations.

- **Platte River Depletions.** All efforts will be made to design the project and select borrow sites to prevent depletions to the Platte River. If there is any potential to create a depletion, NDOR (during design) and the contractor (for borrow sites) shall follow the current Platte River depletion protocols for coordination, minimization, and mitigation. In general the following are considered *de minimis* depletions, but may still require agency coordination; a project which: a) creates an annual depletion less than 0.1 acre feet, b) creates a detention basin that detains water for less than 72 hours, c) any diverted water will be returned to its natural basin within 30 days, or d) creates a one-time depletion of less than 10 acre feet.
- **Revegetation.** All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the Plan for the Roadside Environment. However, within the first 16 feet of the road shoulder, and within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state

or federally listed threatened or endangered plants were identified in the project area during surveys. If listed **plants** were identified during survey, any seed mix requirements identified during resource agency consultations shall be used for the project. (NDOR Environmental)

- **Sensitive Areas.** NDOR Environmental will mark any Environmentally Sensitive Areas on the plans, in the field, or in the contract for avoidance. (NDOR Environmental, District Construction)
- **Species Surveys.** If species surveys are required for this project, NDOR will send results will to the USFWS, NGPC, and if applicable USACE. FHWA will be copied on submittals. (NDOR Environmental, District Construction)

Blowout Penstemon

- A qualified biologist will survey according to protocol during the growing season (June - July) prior to the completion of the Process. If the Natural Heritage Database identifies a known occurrence within 1.0 mile of the project, since the year 1975, there will be another survey according to protocol during the growing season immediately prior to construction. If species are not found during the survey, then the May Affect, Not Likely to Adversely Affect stands. If positive finding, then consultation is required.

The site was surveyed on June 13-15, 2011. No blowout penstemon were documented at the time of the survey. No Natural Heritage Database records exist within 1 mile of the project area. No further surveys are required.

Swift Fox

NOTE: The matrix identified both SF-1 and SF-2 conservation conditions; however, based on past conversations with NGPC and to reduce confusion, only SF-1, which is the more restrictive conservation condition, will be implemented.

- Up to a year prior to construction, NDOR or a qualified contractor may survey for potential swift fox den sites within the projects' environmental study area. Any potential den sites that are not in use by any species may be covered with 2" by 4" weld-wire fencing and adequately secured to the ground. Two weeks prior to the start of construction, a qualified biologist shall survey the environmental study area according to protocol to determine if active swift fox den sites are present. If an active den with young is located and it is outside the project limits, then a buffer zone shall be established around the den and all construction activities shall avoid the buffer until the den is abandoned. If an occupied den with or without young is identified within the project limits or staging areas, NDOR shall immediately coordinate with the NGPC and notify FHWA (if applicable) to determine how to proceed. A buffer zone shall be established around the den and all construction activities shall avoid the buffer until NDOR gives approval to enter the buffer area. Between April 1 and August 31 the buffer zone shall be 250 yards around the active den site; other times of the year, the buffer shall be 100 yards around the active den site. (NDOR Environmental)

- Within swift fox habitat (within the second and third construction projects, but not the first project in Alliance), NDOR will install fencing within the NDOR ROW using a 4-strand barbed wire, wildlife permeable, fencing (see example drawing in **Appendix G**). No woven or welded wire will be allowed. During final design coordination with USFWS and NGPC will occur to obtain concurrence on the fence locations. (NDOR Design, Construction, Contracting).
- Artificial escape dens will be installed along the project corridor in areas of suitable habitat as determined by NDOR or a qualified biologist. Escape den specifications and habitat suitability maps for the Junction L62A/US 385 to Alliance project can be found in the attached Swift Fox Escape Den Protocol (see **Appendix G**). (NDOR).
- If the speed limit is changed in the future, NDOR will coordinate with NGPC. (NDOR).

Bald and Golden Eagle Protection Act

- Suitable **Golden Eagle** nesting habitat exists within 0.5 miles of the Environmental Study Area. If construction will begin between February 1 and April 15, a nest survey must be completed at least 1 but not more than 14 days prior to construction. If construction will begin between April 15 and October 1, a nest survey completed in March is sufficient, as nests will likely already be constructed if nesting will occur that year. However, a nest survey may be completed anytime during this timeframe, as long as it is completed prior to construction. If golden eagles are nesting in the area, consultation with NGPC and USFWS will be required. (NDOR Environmental, District Construction, Contractor)

Migratory Bird Treaty Act

- If the proposed construction project is planned to occur during the primary nesting season or at any other time that may result in the take of nesting migratory birds, the USFWS recommends that the project proponent (or construction contractor) arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. Surveys must be conducted during the nesting season. USFWS further recommends that field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by the project proponent (and/or construction contractor) until such time as construction on the proposed project has been completed. (NDOR Environmental)

Fish and Wildlife Coordination Act

- Any impacts to vegetated areas would be revegetated per BMPs included in the erosion control plan. A Temporary Erosion Control Plan shall be developed before beginning construction to avoid impacts to fish and other aquatic organisms. This plan would show the BMPs necessary at the beginning of the projects and would be updated as BMPs are added or modified throughout the construction process. When land disturbances are greater than or equal to one acre, the Temporary Erosion

Control Plan will be a component of the NDOR's SWPPP. (NDOR Roadside Stabilization Unit)

- Comprehensive and effective erosion and sediment control measures shall be implemented throughout the construction process to minimize the likelihood of sediment discharges. NDOR promotes the use of sediment and erosion control techniques in combination with each other, rather than as stand-alone BMPs to improve the effectiveness of these BMPs. Please refer to NDOR's "Construction Stormwater Best Management Practices" Pocket Field Guide for additional information concerning NDOR's recognized BMPs. (NDOR Roadside Stabilization Unit)

P.6 Special Provisions

- Special Provision – Environmental Commitment Document (B-3-0509). Establishes the required documentation included in the Environmental Commitment Document and Project Erosion and Sediment Control Inspection.
- Special Provision – Special Prosecution and Progress – Migratory Bird Responsibility (A-42-0807). The Project Sponsor would be responsible for migratory birds on this project until the execution of the contract; at which time, the Contractor shall assume the responsibility for meeting all requirements for migratory birds.

O. Farmland

O.1 Summary

Under the Farmland Protection Policy Act (FPPA), Federal agencies must identify and take into account the adverse effects of Federal programs on the preservation of prime or unique farmland. The purpose of the FPPA and 7 CFR Part 658 is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses and to assure that Federal programs are compatible with State and Local policies to protect farmland.

The US Department of Agriculture (USDA) FPPA guidelines require coordination with the NRCS if the land needed for development is purchased after 6 August 1984. Form CPA-106 (Farmland Conversion Impact Rating) is used to score the relative value of the site. For FPPA-regulated farmland, a threshold limit of 160 points determines if further action is necessary. Scores between 160 and 200 require further consideration of alternatives that would avoid this loss.

O.2 Affected Environment

According to the 2007 Census of Agriculture, Box Butte County has 466 farms with an average size of 1,440 acres totaling 670,815 acres of farmland. Of the total acres, 384,377 (57.30 percent) is characterized as cropland; 273,693 (40.80 percent) is characterized as pasture; and 12,745 (1.89 percent) is characterized as other uses.

Morrill County has 495 farms, with an average size of 1,822 acres totaling 902,005 acres of farmland. Of the total acres, 266,362 (29.53 percent) is characterized as cropland, 622,654 (69.03 percent) is characterized as pasture, and 12,989 (1.44 percent) is characterized as other uses.

The two counties together total 1,572,802 acres of farmland with 650,739 (41.37 percent) acres being cropland, 896,347 (56.99 percent) acres being pasture, and 25,734 (1.64 percent) acres being other uses.

NRCS identifies three soil types in Box Butte County as being farmland of statewide importance, totaling 26,370 acres (3.9 percent) of the total land cover within the county. None of the three soil types are located within the limits of construction or would be acquired for permanent ROW. NRCS identifies 37 soil types as being prime farmland if drained or irrigated representing 342,270 acres (49.6 percent) of the total land cover within the county. Approximately, 24.8 percent of the land within Box Butte County along the alignment is designated as prime farmland if irrigated, with 17 different soil map units contributing to the land coverage.

NRCS identifies three soil types in Morrill County as being farmland of statewide importance, totaling 6,461 acres (0.7 percent) of the total land cover within the county. None of the three soil types occurs along the project alignment. The NRCS identifies 33 soil types within Morrill County as being prime farmland if irrigated totaling 156,179 acres (17.1 percent) of the total land cover within the county. Approximately 13.8 percent of the land within Morrill County along the alignment is designated as prime farmland if irrigated, with 18 soil map units contributing to the land cover. Along the entire alignment, 16.7 percent of the land is designated as prime farmland if irrigated.

O.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would have no impacts on farmlands.

O.4 Environmental Impacts of the Preferred Alternative

The proposed project requires the acquisition of approximately 300 acres of land for ROW and roadway construction purposes. This represents 0.02 percent of the total farmland within the two counties. Of the 300 acres, approximately 70 acres is designated as prime farmland if irrigated. This represents 0.014 percent of the total acreage of prime farmland if irrigated within the two counties. Based on review of aerial photography, approximately 8 of the 70 acres appear to be irrigated and would be considered prime farmland by the NRCS. Acquisition of ROW would primarily take place adjacent to existing ROW, except at the southern end of the project where a new alignment is proposed through existing rangeland. While the affected parcel would be divided, by the roadway, access would be maintained to the two new parcels and would not have an impact on ranching operations. The acquisition of additional ROW may require the alteration of seven center-pivot irrigation units along the alignment. However, none of the additional property rights acquisition involves the entire center-pivot system or an entire parcel of farmland. Therefore, the alterations would be minor in nature and have little effect on farming operations.

The completed Farmland Conversion Impact Rating Form (**Appendix H**) shows Part VI as having a corridor assessment of 57 points, which does not warrant a land evaluation by the NRCS. The proposed project would fall below the 160 point threshold and does not require further action. The NRCS confirmed the "Total Points" on 31 July 2014 and that "NRCS has determined that your project was found to be cleared of FPPA significant concerns." (see **Appendix H**)

O.5 Mitigation

No mitigation is required.

P. Hazardous Materials

P.1 Summary

A *Hazardous Materials Technical Report* (HMTR) (July 2012) was prepared to identify and characterize sites and areas that may represent a risk from exposure to hazardous materials. A site reconnaissance was conducted on 13 June 2011, by environmental professionals experienced in conducting Phase I Environmental Site Assessments in accordance with American Society for Testing and Materials (ASTM) 1527-05 and All Appropriate Inquiry. The methodology used to identify sites with recognized environmental conditions (RECs) and potential recognized environmental conditions (PRECs) included:

- Limited site reconnaissance from public ROW of properties adjacent to the project area to identify activities that could potentially result in hazardous materials contamination,
- Review of readily available historical sources of information of the environmental study area,
- Review of readily available Local, State, and Federal agency environmental records to identify known contaminated sites and regulated sites, and
- Identification of properties within the environmental study area requiring additional evaluation or investigation to assist in property rights acquisition, project design, and specific-materials management or institutional controls required during construction.

P.2 Affected Environment

The HMTR (FHU, July 2012) identified two (2) RECs and nine (9) properties with PRECs within the project area or in the vicinity of the project during the site reconnaissance, historical review, or regulatory records search. RECs sites are those with known existing or past releases of any hazardous substances or petroleum products into structures on the site or into the ground, groundwater, or surface water of the site. **Table 4.5** identifies those sites having recommendations based on the HMTR review. **Figures 4.6 to 4.8** show the locations of the sites.

P.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would not involve any ROW or construction activities other than general maintenance and repair of the existing roadways within the project area. The No-Build Alternative would have no effect on any known PREC or REC sites within the environmental study area.

P.4 Environmental Impacts of the Preferred Alternative

Soil excavation would be required to construct the road bed and to develop stormwater drainage and post-construction BMPs; however, no soil is planned to leave the project site. Approximately 138,200 cubic yards (CY) of fill material would be required for project construction.

The PRECs and RECs identified above may potentially be directly affected by property rights acquisition and/or construction activities associated with the Preferred Alternative. Additionally, the Preferred Alternative alignment would have an impact on the PRECs located within Angora; therefore, based on this and the previous information, soil sampling for volatile organic compounds (VOCs) and petroleum compounds was recommended.

Table 4.5 – Sites with Potential Impacts to the Project

Site Address	Description of Property	Recommendations
Adjacent Properties to the East of US 385, L62A		
1. WESTCO Cenex (aka Terry's Corner and Alliance Co-op Association N 2 and US 385	REC. Active filling station and active USTs. LUST site recommended for closure. Monitoring wells located on-site. No right-of-way acquisition is expected at this time.	Based on review of the regulatory file, the pending No Further Action status from NDEQ, the topographically down-gradient position relative to the project construction activities, the facility is considered unlikely to impact construction and vice versa. No further assessment is recommended for this property.
2. Sargent Irrigation US 385 and Kansas Avenue	REC. LUST site closed to No Further Action No right-of-way acquisition is expected at this time.	Based on review of the regulatory file, the location of the former tank site topographically down-gradient from the project, and the No Further Action status of the facility, it is considered unlikely to impact construction and vice versa. No further assessment is recommended for this property.
3. BNSF Railroad Adjacent and parallel to US 385	PREC. Impacts to soil and groundwater along the railroad corridor may exist due to undocumented events and an accumulation of hydrocarbon exhaust, drips, leaks, and spills over time. No right-of-way acquisition is expected at this time.	Based on the topography in the area, proposed depth of grading, and distance between the railroad and the highway, the migration of potential contamination from railroad related activities to the project area is considered unlikely. No further assessment is recommended for this property.
4. Heitz Auto Salvage Yard 6061 Rock Road	PREC. A private auto salvage yard that has historically been present. Activities associated with scrap yards include the use/generation of petroleum products, oils and grease, spent solvents, and degreasers. Other potential concerns include heavy metals in the soil. No right-of-way acquisition is expected at this time.	Based on the topography in the area, proposed depth of grading, and distance between the property activity areas and the highway, the migration of potential contamination from auto related activities to the project area is considered unlikely. No further assessment is recommended for this property.

Site Address	Description of Property	Recommendations
Adjacent Properties to the West of US 385, L62A		
5. Dinklage Feed Yard 2822 S. US 385	PREC. This property is an active cattle feedlot with on-site waste water treatment lagoons. No right-of-way acquisition is expected at this time.	Based on preliminary design information construction activities associated with the project would avoid impacts to the livestock waste control lagoons. Additionally, no known spills or releases have been documented at the facility. Based on review of the above information, the facility is considered unlikely to impact construction and vice versa. No further assessment is recommended for this property.
6. Rhino Linings of Alliance & Auto Sales 13896 S US 385	PREC. This property is occupied with a residence and business which consists of two shop buildings and outdoor storage areas. Unknown material handling, storage, and disposal practices. Potential material include: fuel, motor oils, hydraulic fluids, degreasers, paints and solvents. Partial right-of-way acquisition or easements expected.	Based on topography of the area, proposed depth of grading, distance of the shop buildings to the location of the ROW, and the <i>de Minimis</i> conditions observed from public ROW, the facility is considered unlikely to impact construction of vice versa. No further assessment is recommended for this property.
7. Sand & Gravel Stockpiles MM 104.08	PREC with potentially <i>de Minimis</i> conditions. NDOR contractors used this property in the past as a mobile batch plant for highway & road construction activities. No right-of-way acquisition expected.	Based on the distance of the facility in relation to the project and the <i>de Minimis</i> conditions observed from public ROW, the facility is considered unlikely to impact construction of vice versa. No further assessment is recommended for this property.
8. Angora Elevator (west side of US 385)	PREC. This property is an active grain elevator that has been in operation since at least the 1940s. Areas of railroad and truck access were observed, including loading and unloading areas. In the past grain elevators used grain fumigants during their operation to prevent pest infestations. They also commonly used dust suppressants, petroleum products, fuels, etc. during operation. Partial or full right-of-way acquisition expected.	Based on the past use of the facility, its close proximity to the project, topography in the area, and property rights acquisition, subsurface sampling is recommended at this facility. Results of the sampling would aid in determining appropriate materials management and worker health & safety during construction.

Site Address	Description of Property	Recommendations
Adjacent Properties to the West of US 385, L62A		
9. Angora Elevator (east side of US 385)	PREC. This property is a grain storage facility. In the past, grain elevators used grain fumigants during their operation to prevent pest infestations. They also commonly used dust suppressants, petroleum products, fuels, etc. during operation. No right-of-way acquisition is expected.	Based on the topography in the area, the down-gradient position of the facility from the project, the proposed depth of grading, and the depth to groundwater the migration of potential contamination from grain storage related activities to the project area is considered unlikely. No further assessment is recommended for this property.
10. 1 – Abandoned Building in Angora	PREC. This property appears to have been operated as a former auto repair and/or filling station. Unknown material handling, storage, and disposal practices. Potential material include: fuel, motor oils, hydraulic fluids, degreasers, paints and solvents. Full right-of-way acquisition expected.	Based on the past use of the facility, its close proximity to the project, topography in the area, and property rights acquisition, subsurface sampling is recommended at this facility. Results of the sampling would aid in determining appropriate materials management and worker health & safety during construction.
11. 2 – Abandoned Building in Angora	PREC. This property appears to have been operated as a former auto repair and/or filling station. Unknown material handling, storage, and disposal practices. Potential material include: fuel, motor oils, hydraulic fluids, degreasers, paints and solvents. Partial right-of-way acquisition expected.	Based on the past use of the facility, its close proximity to the project, topography in the area, and property rights acquisition, subsurface sampling is recommended at this facility. Results of the sampling would aid in determining appropriate materials management and worker health & safety during construction.

Figure 4.6 – Sites with Potential Impacts on the Project: Angora



Figure 4.7 – Sites with Potential Impacts on the Project: Dinklage Feedlot and Rhino Linings

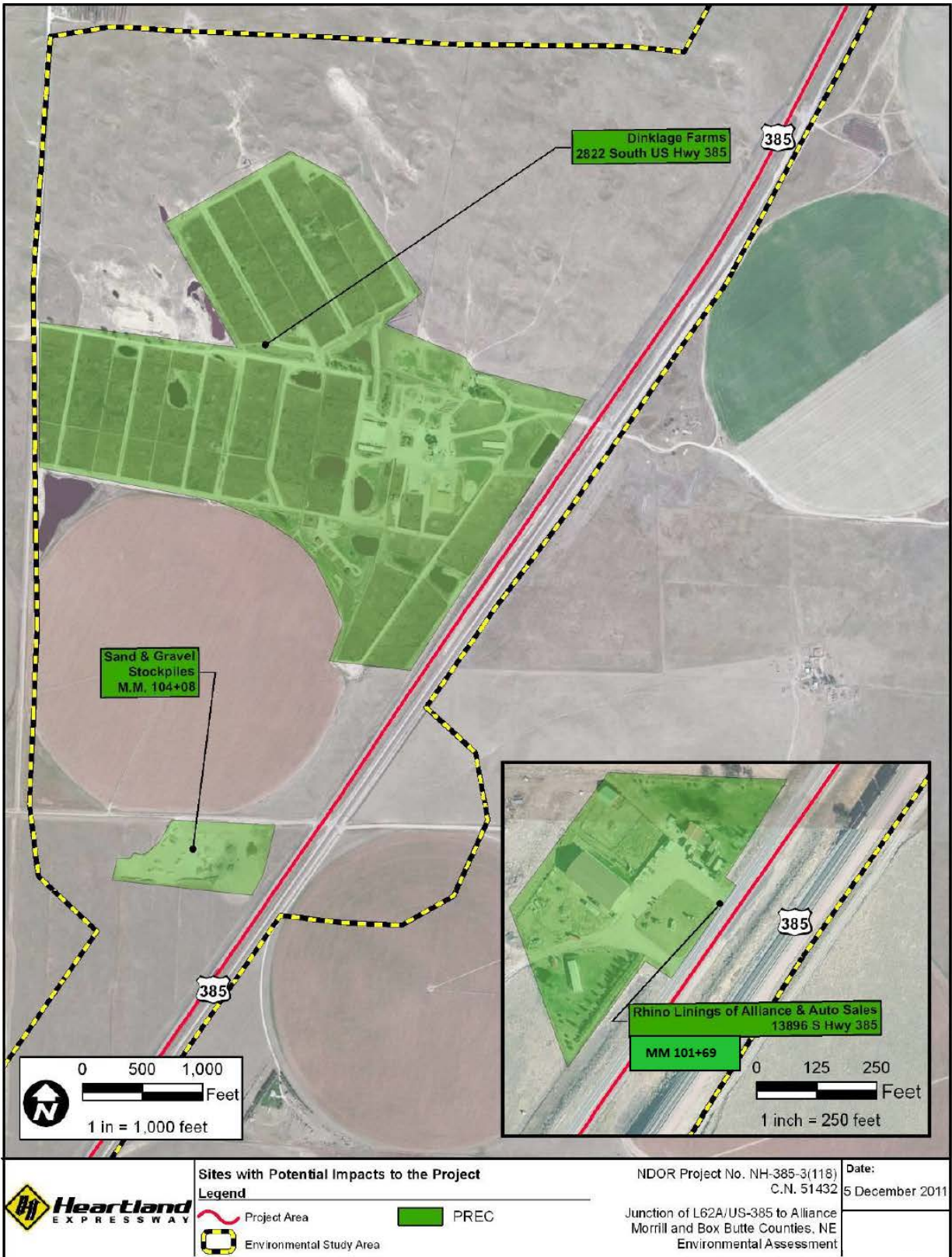
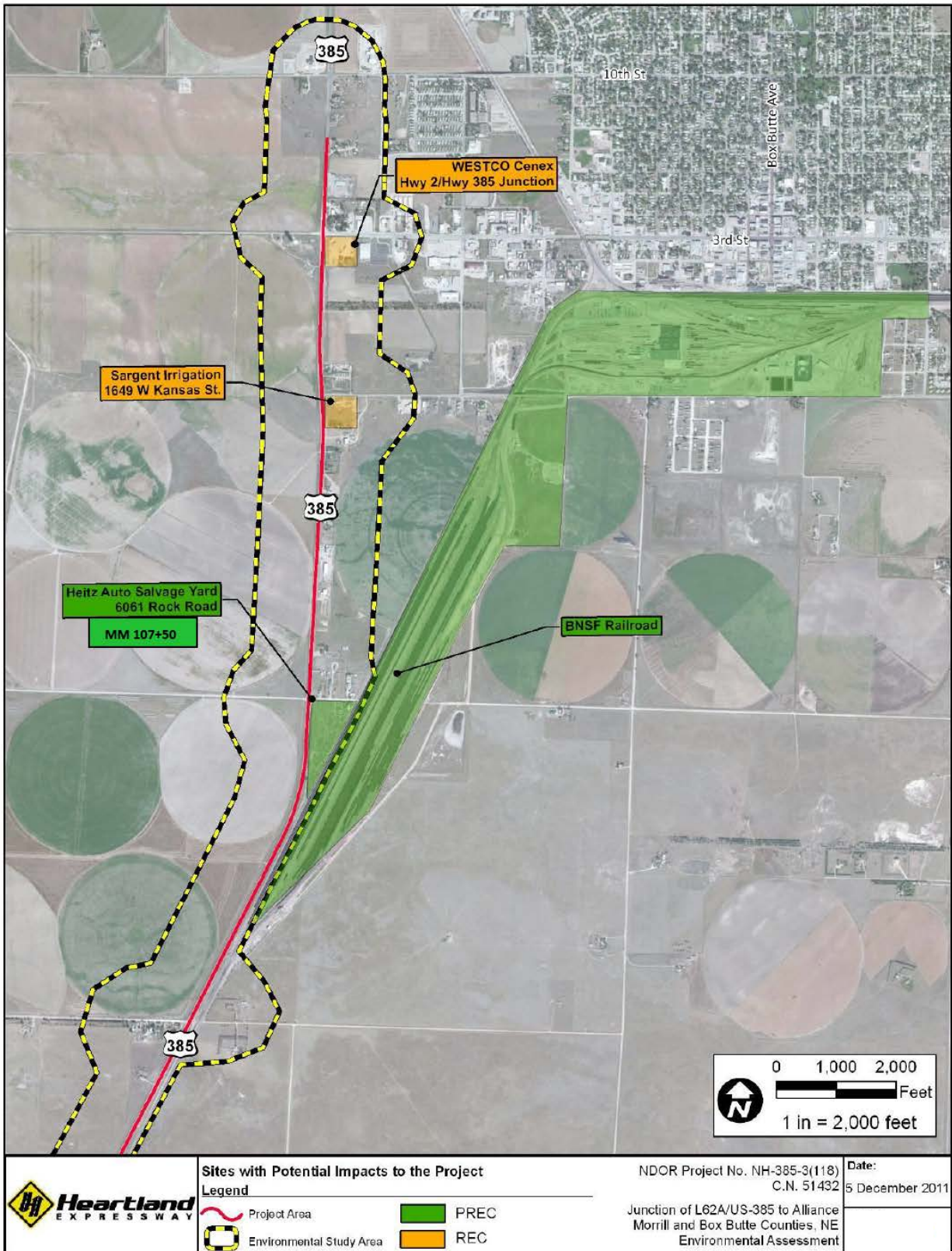


Figure 4.8 – Sites with Potential Impacts on the Project: Alliance



Surface Soil Sampling and Analysis

Soil sampling was conducted for the specific purpose of assessing the potential presence of contamination at two properties within Angora. The two properties are within the property rights acquisition along US 385 and would have the potential for surficial soil contamination due to the past use of the properties as an auto repair shop and grain elevator.

Soil was sampled for VOCs and petroleum compounds to determine if contamination was present at concentrations that would influence the alternative selection process, to ensure the proper avoidance/mitigation strategies are implemented, to ensure full disclosure to the public during the NEPA process, and to determine if human health risks exist from the construction or operation of the proposed facility. Olsson conducted the field work on 11 September 2012 to determine the presence of VOCs and petroleum compounds in the surface soils within the project environmental study area. Sampling was conducted in accordance with accepted industry field methods and the NDOR approved work plan. (see **Appendix J**).

Nine (9) soil samples were collected from shallow soil boring locations (B-AA-1 through 3, B-AB 1 through 3, and B-AE-1 through 3) relative to both the existing roadway and the proposed preliminary design (**Figure 4.9**). The soil samples were collected from the interval of 15 feet below existing ground surface and sent to ESC Lab Sciences, Inc. in Mount Juliet, Tennessee, under chain-of-custody for analysis. The submitted soil samples were analyzed for concentrations of VOC by EPA Laboratory Method 8260 and petroleum compounds using OA-1 and OA-2 methods. The detected concentrations of petroleum compounds are compared to risk-based screening levels (RBSLs) established in the NDEQ Environmental Guidance Document – Risk Based Corrective Action (RBCA) at Petroleum Release Sites: Tier 1/Tier 2 Assessments and Reports. RBSLs for soil leaching to groundwater, enclosed space vapor inhalation, and exposure from contaminated surface soils pathways were considered. Neither of the two detected concentrations exceeded applicable RBSLs. No VOCs were detected in the soil samples tested in the laboratory analysis. **Table 4.6** summarizes the laboratory results.

During the sampling event, evidence of a private landfill was discovered. During the pre-drilling site walkthrough on 10 September 2012, the landowner notified Olsson's drill crew that the former private dump was located north and east of the grain elevator. There was no record of the dump site in the regulatory databases or NDEQ's readily available public resources.

Figure 4.9 – Location of Borings

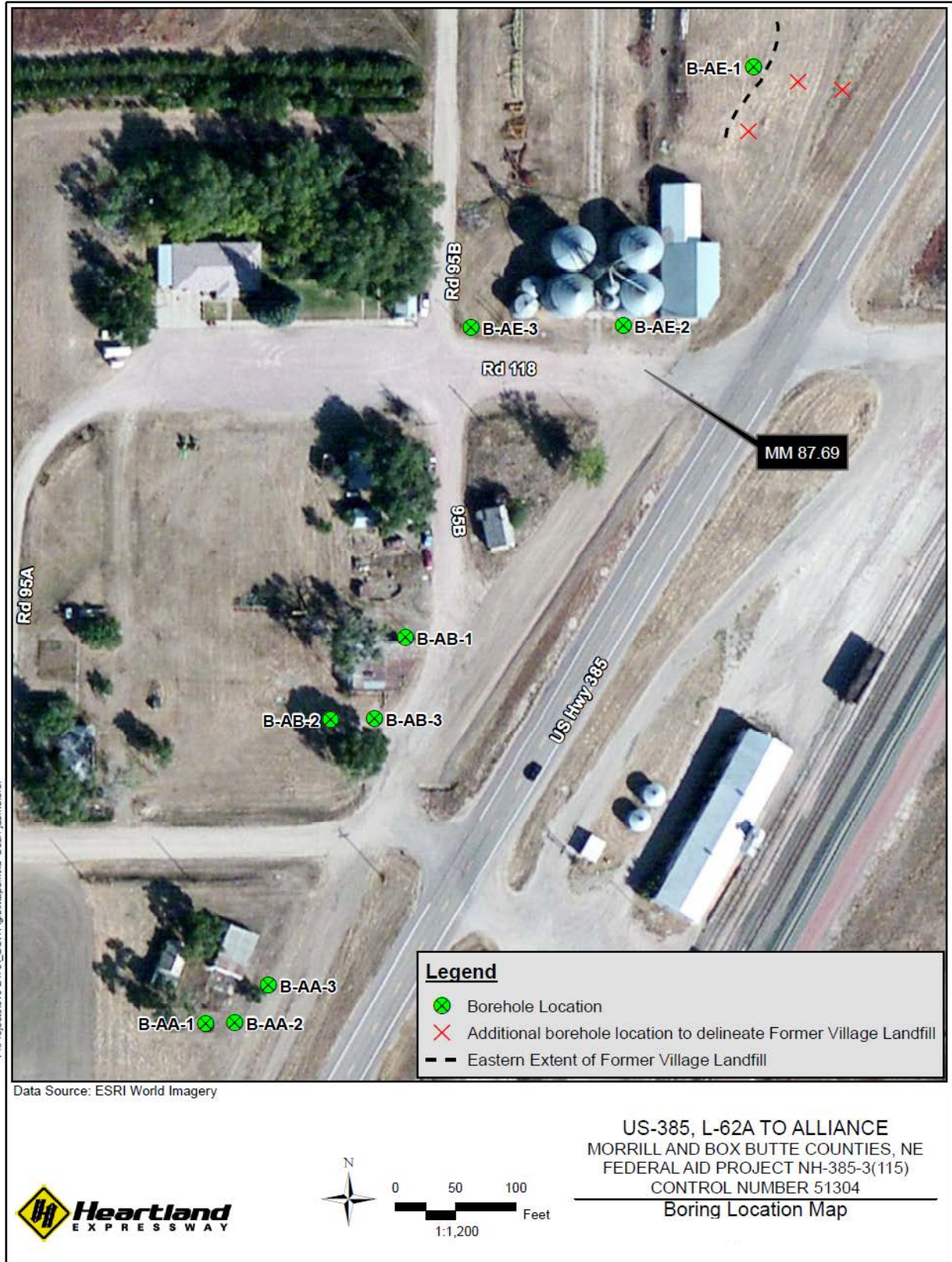


Table 4.6 – Results of Laboratory Analysis

Sample Identification		B-AA-2	B-AE-3	B-AE-3 (duplicate)	Detection Limit	NDEQ	NDEQ	NDEQ
Sample Depth		0-2 ft	0-2 ft	0-2 ft		RBSL ¹	RBSL ²	RBSL ³
Parameter	Method	mg/kg [#]	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Motor Oil*	OA-2	11	18	17	10	152,666	>Sat	3,173

*Concentrations are listed as milligrams per kilogram (mg/kg).

[#]The NDEQ guidance uses the term “Waste Oil” and is considered equivalent to lab report term “Motor Oil.”

¹ NDEQ RBCA Table 8-5: Soil Leaching to Groundwater, Groundwater Flow Rate <0.1 ft/day. Value represents the most conservative RBSL value.

² NDEQ RBCA Table 8-8: Enclosed Space Vapor Inhalation Exposure Pathways Commercial Exposure; Building Present, Subsurface Sediments – Sands (more conservative selection), Vertical Interval Between Contamination and Structure <3 feet.

³ NDEQ RBCA Tables 8-10: Exposure from Contaminated Surface Soils

>Sat – means that the RBSL would be greater than any possible saturated concentration of the contaminant in soil.

Sample B-AE-1 was originally sited for drilling about 65 feet east of the identified former dump location. With permission from NDOR Environmental, the bore site was relocated to the east edge of the former dump and three additional boreholes were drilled east of the former dump site to determine the extent of buried debris. **Figure 4.9** shows the locations of these borings. These boreholes were drilled solely for the intent to determine the presence of evidence of anthropogenic waste (debris) in the subsurface and to identify the eastern extent of the former dumpsite (in relation to the highway ROW). No waste debris was present in any of the additional boreholes; thereby, indicating that the former dump area did not extend into the US 385 ROW. Soil samples were not collected from these additional three borings for laboratory analysis; however, the findings are summarized below.

Based on the information provided previously and the results of the soil sampling analysis, no further environmental investigation or remedial action is recommended for the project and areas within the environmental study area. Due to the low level of motor oil and the non-detection of VOCs in soils within the environmental study area, there are no human health concerns for the construction workers. Also based on sampling analysis, the need to use specific personal protective equipment (PPE) during construction is not anticipated. Refer to the full sampling report included in **Appendix J**.

P.5 Mitigation

Performance of the utility work set forth in the project plans and specifications will be conducted in accordance with any easement agreement among the utility companies, Box Butte and Morrill Counties, and/or private landowners, and whether or not federal funds would be used to reimburse for utility relocations. If federal funding is used, transformers will be reviewed for PCB content (the equipment can be identified by blue stickers that say either “PCB-free” or “No PCBs”). If PCB-containing transformers or other equipment are suspected to be present, NDOR requires that they be managed and disposed of according to the TSCA regulations in coordination with USEPA. Releases of PCBs to the environment at levels requiring action under

TSCA are to be managed or remediated according to TSCA regulations and in coordination with USEPA. If present, the utility owner is responsible for transformer equipment, including those that are PCB-containing and will be responsible for maintaining and/or replacing equipment with PCB-free equipment. Any electrical equipment with no label or unknown concentration is assumed to be "PCB contaminated equipment" per EPA regulation and should be managed by the utility company accordingly. NDOR or their representative will contact the utilities to schedule performance of the work and will coordinate the work with the project construction activities per NDOR's *Standard Specifications for Highway Construction*, Subsections 105.06 and 107.16 (NDOR, 2007). (Project Sponsor, Contractor)

Prior to the demolition/modification activities, structures must be thoroughly inspected for the presence of asbestos-containing material (ACM). All suspect ACM must be sampled and laboratory analyzed or is assumed to contain asbestos and must be handled as such. Suspect ACM associated with bridge structures may include, but are not limited to: utilities attached to the structure, joint compounds or sealers, and deck overlays. The inspector must be certified in accordance with the Nebraska Department of Health and Human Services (DHHS) Nebraska Asbestos Control Program Regulations, Title 178. A list of Licensed Asbestos Inspectors can be found at: <http://dhhs.ne.gov/publichealth/Documents/asbestosinspectors.pdf>. Documentation of inspection shall be provided to the NDOR project manager by the Contractor and shall be recorded in the ECOD system. If the bridge structure is compromised of only steel, concrete, brick or wood, an inspection by a certified inspection is not necessary. (Contractor)

If ACM is found to be present, removal and disposal of the ACM shall be in accordance with DHHS Nebraska Asbestos Control Program Regulations, Title 178 and will occur prior to any bridge demolition or renovation activities. The Contractor shall develop a removal and disposal plan in coordination with a licensed Asbestos Removal Contractor and NDOR. A list of Licensed Asbestos Inspectors can be found at:

<http://dhhs.ne.gov/publichealth/Documents/asbestosinspectors.pdf> . (Contractor)

Demolition of structures will require the Contractor to submit a written NESHAP (National Emission Standards for Hazardous Air Pollutants) notification. If no asbestos is present, the notification is sent only to the Nebraska Department of Environmental Quality (NDEQ). If asbestos is present, in addition to the notification to NDEQ, the DHHS is also notified, using DHHS Form 5. The Contractor shall submit the NESHAP Notification of Demolitions and Renovation to NDEQ and DHHS (when required) at least 10 working days prior to commencement of any demolition activities or disturbance of any ACM. The ten day clock starts with the day the Notification is postmarked, hand delivered (includes submittals by email notification) or picked up by a commercial delivery service, such as UPS, FedEx, etc. Faxing documents is prohibited. The NDOR project manager shall be provided copies of said notifications and their submittal date, which shall be recorded in the ECOD system. (Contractor)

Currently, the Terry's Corner (WESTCO) service station at the intersection of US 385 and N-2 does not occur within the proposed construction areas. If project plans should change, a Soil Vapor Extraction (SVE) remediation system and several groundwater monitoring wells are located on the Terry's Corner (WESTCO) Leaking Underground Storage Tank (LUST) site. Although the SVE system is currently inactive and in the NDEQ site closure process,

modifications to this system and any groundwater monitoring wells will require coordination with NDEQ and the owner of the system. The NDEQ contact is Quinn Krikac at (402) 472-0299.

Appendix J includes the location of the SVE system and the monitoring wells. If the project plans should change, the location of the SVE system and associated wells should be included in all project specifications and plan drawings (NDOR Environmental, Designer, Contractor).

If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material will stop until NDOR/FHWA is notified and a plan to dispose of the hazardous materials has been developed. Then NDEQ will be consulted and a remediation plan will be developed for this project. The potential exists to have contaminants present resulting in minor spillage during fueling and service associated with construction equipment. Should contamination be found on the project during construction, the NDEQ will be contacted for consultation and appropriate actions be taken. The Contractor is required by NDOR's Standard Specification Section 107 (legal relations and responsibilities to the public) to handle and dispose of contaminated material in accordance with applicable laws. (Contractor)

If hazardous materials are encountered during construction, applicable requirements for actions to be taken are located in Section 107.01 of the Standard Specifications for Highway Construction (NDOR 2007). Prior to construction activities, a Preconstruction Meeting will be held as required by Section 103.01 of the 2002 NDOR Construction Manual. The purpose of the meeting is to discuss pertinent information to the project before construction begins, including hazardous materials reviews and health and safety issues. (District Construction, Contractor)

P.6 Standard Specifications

- Nebraska Administrative Code Title 178, Chapter 23. Regulations regarding the training, certification, and work practices associated with removal of lead-based paint.
- Standard Specification 732.01 – Lead-Based Paint Removal – Description (NDOR, 2007). Requirements associated with the removal of lead-based painted structural steel members.
- Standard Specification 732.02 – Lead-Based Paint Removal – Material Requirements (NDOR, 2007). Requires that all materials used must be in compliance with all applicable laws and regulations.
- Standard Specification 732.03 – Lead-Based Paint Removal – Construction Methods (NDOR, 2007). Requirements associated with construction methods for removal of lead-based paint.
- Standard Specification 701.01 – General Requirements – Description (NDOR, 2007). Describes procedures and equipment associated with the construction of structures
- Standard Specification 203.01 – Removal of Structures and Obstructions – Description (NDOR, 2007). Requirements associated with the removal and disposal of structures and obstructions.

- Standard Specification 203.02 – Removal of Structures and Obstructions – Construction Methods (NDOR, 2007). Requirements associated with the construction methods associated with the removal of structures and obstructions.
- Standard Specification 203.03 – Removal of Structures and Obstructions – Method of Measurement (NDOR, 2007). Specifies how to measure removal of structures and obstructions.
- Standard Specification 107.01 as Amended A-43-0210 – Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007). Requires the Contractor to notify the Engineer if previously unidentified hazardous materials are encountered.

Q. Material Sources and Waste Materials

Q.1 Summary

Material sources (borrow sites) are used for the construction of projects and must adhere to environmental laws before their use. For some projects, materials excavated from a project site may also be used for fill material or for other construction needs. The Contractor should obtain all environmental clearances and permits required for borrow site prior to obtaining borrow material for a project (See Platte River Depletion Chapter IV.M). Borrow and material waste areas must be restored as specified in NDOR's Standard Specification 208. The project requirements for material sources and details regarding material disposal are provided below.

Q.2 Affected Environment

Borrow sources are generally available up and down the North Platte River Valley in this region of Nebraska, as evidenced by abandoned sand and gravel pits that have been converted to recreational lakes. Active commercial sand and gravel pits are operating in this region.

Q.3 Environmental Impacts of the No-Build Alternative

Because the No-Build Alternative has no associated borrow or waste material, there would be no impact on material sources or waste materials.

Q.4 Environmental Impacts of the Preferred Alternative

The overall project is anticipated to need between approximately 138,200 CY of borrow material or have approximately 75,300 CY of excess excavation depending on how the Contractor phases the grading. Borrow materials are anticipated to be available for site preparation in the general area. No material source has been identified for borrow material, at this time. The selected Contractor would be required to provide the needed borrow material and would identify a source of material that does not include dredging within the channel of the Platte River. The Contractor should obtain all environmental clearances and permits required for the borrow site before obtaining borrow material for the project (See Platte River Depletion Chapter IV.M). Excess materials removed from the project would be legally disposed of in accordance with NDOR Standard Specifications.

Q.5 Mitigation

The following project activities will, to the extent possible, be restricted to the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the ROW designated on the project plans: borrow, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage areas. Any project-related activities that occur outside these areas must be environmentally cleared/permitted with the USFWS and NGPC, as well as any other appropriate agencies by the Contractor and those clearances/permits shall be submitted to the District Construction Project Manager before the start of the above listed Project activities. The Contractor will submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of four ground photos showing the existing conditions of the proposed activity site, depth to groundwater and depth of the planned pit, and the "Platte River depletion status" of the site. The District Construction Project Manager will notify NDOR Environmental, which will coordinate with FHWA for acceptance, if needed. The Contractor must receive notice of acceptance from NDOR, before starting the above listed project activities. (NDOR Environmental, District Construction, Contractor).

Q.6 Standard Specifications

- Standard Specification 732.01 – Lead-Based Paint Removal – Description (NDOR, 2007). Requirements associated with the removal of lead-based painted structural steel members.
- Standard Specification 732.02 – Lead-Based Paint Removal – Material Requirements (NDOR, 2007). Requires that all materials used must be in compliance with all applicable laws and regulations.
- Standard Specification 732.03 – Lead-Based Paint Removal – Construction Methods (NDOR, 2007). Requirements associated with construction methods for removal of lead based paint.
- Standard Specification 701.01 – General Requirements – Description (NDOR, 2007). Describes procedures and equipment associated with the construction of structures.
- Standard Specification 203.01 – Removal of Structures and Obstructions – Description (NDOR, 2007). Requirements associated with the removal and disposal of structures and obstructions.
- Standard Specification 203.02 – Removal of Structures and Obstructions – Construction Methods (NDOR, 2007). Requirements associated with the construction methods associated with the removal of structures and obstructions
- Standard Specification 203.03 – Removal of Structures and Obstructions – Method of Measurement (NDOR, 2007). Specifies how to measure removal of structures and obstructions.
- Standard Specification 107.01 as Amended A-43-0210 – Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007). Requires the

Contractor to notify the Engineer if previously unidentified hazardous materials are encountered.

- Standard Specification 205.02 – Excavation and Embankment – Material Requirement (NDOR, 2007). Requirements associated with the embankment materials, and borrow site approval.
- Standard Specification 208 – Borrow and Waste Site Restoration (NDOR, 2007). Requirements associated with the restoration of Department provided sites from which borrow is obtained.

R. Visual Resources

R.1 Summary

Because US 385, within the environmental study area, is part of the US 385 Gold Rush Byway, it is important to consider the impact on visual aesthetics of the project.

This section describes the character of the landscape in the project area, as well as the local government planning, that is relevant to the physical appearance of project components. This section also describes whether the project would be compatible with local scenic highways and byways, as well as the measures and methods available for reducing visual impacts.

The current alignments of US 385 and L62A have existed at their current location for more than 50 years. Alternatives for the North and Middle segments would be constructed over the existing alignment and should not decrease the visual quality of the area. Within the South segment, a new alignment would be constructed off the original alignment (**Chapter 2**). The view from, and of, the new alignment would not be inconsistent with, or visually more intrusive than, the existing highway structures.

R.2 Affected Environment

Landscapes

The US 385 Gold Rush Byway transects the Nebraska Sandhills and the shortgrass prairies of western Nebraska. The Gold Rush Byway is not identified as one of the “National Scenic Byways” as designated by the U.S. Department of Transportation, and the State of Nebraska does not have a formal scenic byway program. However, some routes within the state have been designated as either Byways (as this one is) or Scenic Byways as they have historic, scenic, or other tourism values. The Gold Rush Byway (158 miles of US 385 from Colorado to South Dakota) is primarily of interest because it follows the route of the Black Hills Gold Rush. During the Black Hills gold rush in the 1870s, gold was transported along this route to the railroad station in Sidney. In addition, it connects to tourist destinations such as Chadron State Park and the Pine Ridge Ranger District of the Nebraska National Forest near Chadron. A number of museums tell the pioneer story such as the Mari Sandoz High Plains Heritage Center in Chadron and the Fort Sidney Museum and Post Commander’s Home in Sidney.

From US 385 within the project area, views primarily include grasslands and pasture landscapes in the sections south of the City of Alliance, and light urban and railroad industrial landscapes in and around the City of Alliance. Additionally, light industrial properties are visible

within the city from US 385. While not always visible, escarpments, such as Courthouse and Jail Rocks and Chimney Rock, can be seen from portions of US 385 that are near the town of Bridgeport, outside of the project limits.

Planning

Currently, no plans exist for additional scenic resources within the environmental study area. However, the exception to this is within the City of Alliance. Based on *The Alliance Plan* (Alliance, 2009), the area surrounding the intersection of US 385 and N-2 would provide an attractive and inviting entrance to the city.

R.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would have no impact on visual resources.

R.4 Environmental Impacts of the Preferred Alternative

Project construction of the Preferred Alternative is likely to change the visual aesthetics within the environmental study area. During construction, machinery and activities would change the current view from the existing alignment. However, such obstructions would be temporary in nature and would not likely detract from the visual resources once construction of the proposed project is complete. Within the area of the Sweeping Curve Alternative, where new alignment would be constructed, the view is likely to remain similar to that of the existing roadway. Thus, the view from and of the new alignment would not be inconsistent with, or visually more intrusive than, the existing highway structures.

R.5 Mitigation

No mitigation is required.

S. Temporary Construction Impacts

S.1 Summary

Project construction activities may lead to temporary short term impacts. These impacts would typically include such things as construction noise, dust, traffic accommodations during construction activities, access to adjoining properties, and construction accommodations needed to build the project.

S.2 Affected Environment

The existing environment includes a two-lane highway with residential, commercial and agricultural properties adjacent. Construction activities are not currently in progress.

S.3 Environmental Impacts of the No-Build Alternative

The No-Build Alternative would require continued maintenance activities such as pavement overlays to the existing pavement. Maintenance activities would have temporary construction impacts relative to the No-Build Alternative. These impacts would include lane closures and increased travel times. The ultimate replacement of the pavement infrastructure would occur sooner with this alternative.

S.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would construct two new southbound lanes to the west of existing US 385 and north of existing L62A for most of the project for the interim build scenario. This would allow traffic to be maintained on the existing highway. Two segments in the Sandhills region and the Dinklage Feedlot Alternative would require traffic to be shifted from the existing highway to the new southbound lanes so that the existing highway can be removed and reconstructed. The Alliance Alternative would be constructed half at a time, allowing US 385 to remain open during construction. For the ultimate build scenario, traffic would be diverted to head-to-head traffic on the southbound lanes, while the northbound lanes are reconstructed 40 feet to the east.

Although traffic would use the existing highway and therefore be largely unaffected during construction, short-term, temporary impacts may occur due to lane closures necessary to accommodate specific construction activities/phases. These activities could include delivery of materials, equipment mobilization, and construction of tie-ins and cross-overs.

Field, commercial, and residential drives would be temporarily impacted during construction of the southbound lanes and necessary regrading or realignment of drive approaches. This would be similar for the reconstruction of the northbound lanes. Access would be maintained at all times via temporary roads, lane closings, or other methods.

Access to residences, farms, and businesses located on county roads within this project would be maintained at all times via temporary roads, lane closings, phased construction, adjacent county roads, or other methods. Providing access at all times includes indirect access as well as direct access. Examples of indirect access include closing one county road intersection but leaving the adjacent ones open to maintain access. When the county road is done, it is opened and the next county road to be worked on is then closed. The goal is to maintain access from some public road to the property owners.

It is anticipated that the county road closures would be short-term for the reconstruction of the particular intersection with US 385, and adjacent county roads would be marked for detour routes. No permanent closures would occur. Locations of the county roads are shown in **Appendix B**. Impacts to the county roads along the project are described below.

- CR 89 north approach would not be impacted by the construction of new highway. The new lanes would be constructed to approximately 150 feet to the west and the interim median cross-over would occur approximately 500 feet to the west. CR 89 south approach would require the approach be reconstructed when the south lanes are reconstructed. For the interim condition, no impacts are anticipated.
- CR 116 would be temporarily impacted during construction of the southbound lanes. The approach would be closed during reconstruction to tie into the new lanes. Traffic volumes are low and impacts would be temporary.
- CR 95 would be realigned approximately 550 feet north to correct the intersection skew angle and consolidate access points along the highway. Most of the realignment would occur away from traffic, with temporary lane closure during construction of the tie-in.

Traffic volumes are low and impacts would be temporary with easily accessible alternative access available to the north from CR 118.

- CR 118 west approach would be closed and realigned to the north approximately 650 feet to correct the intersection skew angle and consolidate access points along the highway. Most of the realignment would occur away from traffic, with temporary lane closure during construction of the tie-ins. Traffic volumes are low and impacts would be temporary with easily accessible alternative access available to the north from CR 120, and south from CR 95.
- CR 118 east approach would be realigned to the north approximately 150 feet to correct the intersection skew angle. This approach would be constructed to accommodate both the ultimate and the interim construction concepts. This realignment would require temporary lane closure. Traffic volumes are low and impacts would be temporary with easily accessible alternative access available to the north from CR 120.
- CR 120 would be temporarily impacted during construction of the southbound lanes. The approach would be closed while being reconstructed to tie into the new lanes. The east approach would require reconstruction when the northbound lanes are reconstructed. Traffic volumes are low and impacts would be temporary.
- The former Angora Wayside Area (former rest area) south driveway would be reconstructed when the northbound lanes are reconstructed, resulting in temporary lane closure. The north driveway would be removed permanently.
- CR 128 would be realigned approximately 300 feet south to correct the intersection skew angle and consolidate access points along the highway. A driveway off the county road would also be realigned to improve geometrics and better define the driveway. For both roadways, traffic volumes are low and impacts would be temporary.
- Construction of the southbound lanes would have a temporary impact on Wayne Road. The west approach would be reconstructed to tie into the new lanes and would improve the intersection skew angle. Most of the realignment would occur away from traffic, with temporary lane closure during construction of the tie-ins. The east approach would require reconstruction when the northbound lanes are reconstructed. Traffic volumes are low and impacts would be temporary.
- Construction of the southbound lanes would have a temporary impact on Valley Road. The west approach would be reconstructed to tie into the new lanes and would improve the intersection skew angle. Most of the realignment would occur away from traffic, with temporary lane closure during construction of the tie-ins. The east approach would require reconstruction when the northbound lanes are reconstructed. Traffic volumes are low and impacts would be temporary.
- Sarpy Road would be temporarily closed during construction of the southbound lanes. The west approach would be reconstructed to tie into the new lanes. The east approach would require reconstruction when the northbound lanes are reconstructed. Traffic volumes are low and impacts would be temporary. Alternative routes are available during the closure.

- Construction of the southbound lanes would have a temporary impact on Rock Road. The west approach would be reconstructed to tie into the new lanes. To maintain access, the east approach would require phased reconstruction when the northbound lanes are reconstructed. Traffic volumes are low and impacts would be temporary.
- Construction of the northbound lanes would have a temporary impact on Kansas Street. To maintain access, the east approach would require phased reconstruction when the northbound lanes are reconstructed. Impacts would be temporary.
- West 3rd Street, N-2 would be temporarily impacted during construction of the southbound lanes. The west approach would be reconstructed to tie into the new lanes. To maintain access, the east approach would require phased reconstruction when the northbound lanes are reconstructed. Impacts would be temporary.

The Preferred Alternative would have no major traffic noise level impact. Increased noise from construction activities would be temporary and short term.

Dust from construction activities would be minor and temporary. Nebraska Air Quality Regulations (Title 129, Chapter 32) state that no person may cause or permit a road being constructed or repaired without applying reasonable measure to prevent particulate matter (commonly referred to as dust) from becoming airborne and remaining visible beyond the premises where it originates. Slight wetting of the soil during demolition and earthwork activities to prevent dust from impacting on-site workers and any potential off-site migration is recommended. Additionally, the EPA suggests the need for dust suppression when dry and dusty conditions are present to reduce the inhalation of dust, including the recommended use of dust masks by contractors.

S.5 Mitigation

Access to residences, farms, and businesses located on county roads within this project would be maintained at all times via temporary roads, lane closings, phased construction, adjacent county roads, or other methods. Providing access at all times includes indirect access as well as direct access. Examples of indirect access include closing one county road intersection but leaving the adjacent ones open to maintain access. When the county road is done, it is opened and the next county road to be worked on is then closed. The goal is to maintain access from some public road to the property owners. Public and emergency services would be notified of short-term road closures prior to them occurring. Message boards may be used to alert the public of road closures and detours. (District Construction, Contractor)

For each impacted county road, access would be constructed in phases to maintain access at all times. Methods to keep access open include: shoo-flies, constructing intersections half at a time, traffic management, and temporary access. A note would be included on the construction plans indicating that access is to be maintained. Furthermore, per NDOR's Standard Specifications, the Contractor shall at all times, to the extent practicable, provide private dwelling, commercial properties, businesses, and public facilities access to and from the nearest intersecting public road or street (NDOR, 2007). Accommodations shall be made to ensure local traffic passing within the limits of the project has access to all private dwellings, commercial properties, businesses, and public facilities. If a road is closed, limited access must be

maintained for authorized local traffic. If access is closed longer than one day, the Contractor would meet with the property owners to address temporary access issues. Access details shall be coordinated among NDOR's Project Manager, the Contractor, and property owners. (District Construction, Contractor)

If a temporary access road or detour is determined necessary for portions of the phased construction outside of the study area, the impacts would be re-evaluated during final design. (NDOR Environmental)

The Contractor is required by NDOR's Standard Specification sections 309 and 312 for dust control during construction. (Contractor)

S.6 Standard Specifications

- Standard Specification 301.02(1a, 1b) General Requirements – Equipment (NDOR, 2007). Requires that all equipment shall be kept in satisfactory working condition and shall be operated within the manufacturer's specifications.

T. Secondary and Cumulative Impacts

T.1 Summary

This section discusses impacts from the project that are not direct impacts, including secondary and cumulative impacts. Secondary effects are those that are "caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR 1508.8). Generally, these impacts are induced by the initial action. They comprise a wide variety of secondary effects such as, changes in land use, water quality, economic vitality and population density. Cumulative effects are impacts which result from the incremental consequences of an action when added to other past and reasonably foreseeable future-actions (40 CFR 1508.7). These impacts are less defined than secondary effects. The cumulative effects of an action may be undetectable when viewed in the individual context of direct and even secondary impacts, but nonetheless can add to other disturbances and eventually lead to a measurable environmental change.

Direct Impacts

Direct impacts that are directly caused by the project itself, usually within the limits of the construction of the project have been discussed in each of the environmental resource sections in **Chapter 4**.

Secondary Impacts

Improvements to US 385 would provide for increased vehicular volume resulting from new regional sources of energy development, expanding agricultural markets, and commercial development. However, it is also likely to result in an expansion of regional development. Particularly when improvements to the Heartland Expressway are completed, the L62A/US 385 to Alliance segment is likely to attract new and rising industries due to improved connections for the Nebraska Panhandle region. However, the timeframe for this completion is not known at this time but is beyond 10 years in the future.

Often, induced growth is a secondary impact due to economic development that comes from increased road capacity. For this project, it is anticipated that there could be an increase in growth in the Alliance area but is unlikely to increase development along most of the corridor, due to the very low population density, the lack of centers of employment, and the agricultural nature of the study area south of Alliance. To a great extent, the induced growth would be more likely to counteract a slow reduction in the population of the Nebraska panhandle and return the region to a population level that once existed. For example, the population of Alliance has declined approximately 14 percent since 1980, according to U.S. Census Bureau data.

Cumulative Impacts

The area of US 385 in the immediate vicinity of Alliance has been the site of several past and proposed future development projects. In addition, the entire Heartland Expressway—both past and future improvements—from Denver to Rapid City fall under the category of cumulative impacts.

T.2 Affected Environment

Geographic and Temporal Limits

Two geographic areas are considered important for impact analysis. While the proposed improvements cover a geographic area defined by the 26-mile long route in Morrill and Box Butte Counties in Nebraska, the overall Heartland Expressway project extends from Denver through Scottsbluff to Rapid City (see **Figure 1.4**). Beneficial and adverse impacts are considered for the proposed 26-mile long project, as well as from construction of the entire Heartland Expressway. The full extent of the project benefits will not be realized until the entire expressway is completed.

The time period for this analysis is 20 years following completion of the project; this corresponds to a reasonable period for the benefit cost analysis.

Past Actions included in the Impacts Analysis

BNSF has a large rail yard in Alliance and is the largest employer in the area. BNSF draws its workforce of more than 2,000 from throughout the Nebraska Panhandle. The railroad runs crews throughout the region servicing tracks and working in the Alliance shops. The Alliance Yard serves the BNSF line from the Wyoming Powder River Basin, one of the largest coal-mining areas of the world. Heavy rail traffic into Alliance heads to power plants in the Midwest, South, and eastern US. Other industries in Alliance include Dayco Industries, which manufactures belts and hoses, and Perrin Manufacturing, which provides off-highway HVAC systems.

Important agricultural commodities in the region include specialty crops, such as sugar beets, edible dry beans, and potatoes, as well as wheat, corn, forage, and cattle and calves. These products are shipped primarily by truck to markets in Scottsbluff via L62A/US 385 or to more distant markets accessed via I-80. The location of the Western Sugar Refinery in Scottsbluff creates heavy traffic on L62A/US 385 with harvest trucks moving stockpiled beets through the winter months. Corn and bean processing plants are also located in Scottsbluff.

In general, there has been a decline in the population of the region over the last several decades, due in part to consolidation of ranches and farms into larger, fewer holdings. For example, according to the US Census Bureau, the population of Morrill County dropped from approximately 6,100 people in 1980 to approximately 5,000 in 2010, and the population of Box Butte County dropped from 13,700 to 13,300 in the same time period.

While outside of the direct project area, past actions have included construction of earlier segments of the Heartland Expressway, including from Denver to Kimball, from Kimball to Minitare, and from Rapid City to the Nebraska state line.

Present Actions included in the Impacts Analysis

Within the past two years, a new Pepsi Distribution Center was completed, located south of the intersection of US 385 and N-2. In addition, the Farm Credit facility located near US 385 and 10th Street was recently completed.

The State of Nebraska legislature recently passed Nebraska Revised Statute 23-3803, the program for management of black-tailed prairie dogs. This statute requires property owners to prevent prairie dogs on their property from spreading onto adjacent properties. Counties would have the power to notify landowners that a colony is not being managed, and they could require landowners to take action. Landowners would have to notify counties that they have acted to address the problem.

Future Action included in the Impacts Analysis

A future development in the vicinity of Alliance is planned by West Plains Grains, which would be constructing a \$14 million intermodal facility adjacent to the BNSF railroad line and located on US 385 one mile north of 10th Street.

Based on North Dakota's experience with oil shale deposits in the Bakken Formation, which starts approximately 400 miles north of the project site, development of these new areas may increase truck traffic in the area (estimated increase from 17 percent to 34 percent). Personal communication with the Assistant Engineer of the Traffic Division and with the Assistant Director of Planning and Asset Division of the North Dakota Department of Transportation (Jack Olson, 4 February 2011) indicated that the district has experienced a 300 percent increase in traffic since drilling began, with an increase in trucks due to the use of support trucks shipping materials (that is, sand and water) back and forth from rigs to pipeline heads and other sites.

Resources Considered for Impacts Analysis

Due to the sparse population density of most of the project area, secondary and cumulative impacts are somewhat limited. These primarily would include impacts on socioeconomic resources from construction of the Heartland Expressway, and impacts to species that rely on natural resources such as the Sandhills prairie and Shortgrass/Mixed grass prairies that predominate along the project alignment. These species include the black-footed ferret and swift fox.

T.3 Environmental Impacts of the No-Build Alternative

Secondary Effects

No secondary impacts are anticipated from the No-Build Alternative.

Cumulative Effects

Population in the Nebraska Panhandle has declined over the last several decades, mostly due to consolidation of ranches and farms into larger and fewer holdings. Transportation access to the Panhandle communities would not improve under the No-Build Alternative, and this decline may continue.

T.4 Environmental Impacts of the Preferred Alternative

Secondary Effects

Socioeconomics. Improving the highway infrastructure will facilitate economic development by enhancing the efficiency and mobility of Nebraska Panhandle regional commerce for residents, businesses, visitors, and interstate travel.

Positive project impacts from increased development and tourism, due to increased access to the Nebraska Panhandle, are most likely to occur within the City of Alliance and immediate surroundings (that is, the City's extraterritorial jurisdiction). Most of the rest of the region is sparsely populated and has minimal infrastructure for development. In anticipation of that, the City has developed a comprehensive plan (*The Alliance Plan*, referred to in **Section 4.B** above) that would help guide new development within Alliance and its extra-territorial jurisdiction.

While several buildings will be impacted within the unincorporated community of Angora, these impacts will be minor since the community consists of a population of 3 persons, buildings impacted are not inhabitable, grain storage structures may be relocated or replaced depending on landowner preferences, and owners will be compensated following the Federal Uniform Acquisitions and Property Relocation Act. The community post office will not be impacted, and there is no school.

Impacts to farm properties will be mitigated. Livestock crossings will be maintained or replaced. Farm properties with access impacts will be provided new access if no alternative access exists; in general, new access points would require no more than a mile of additional travel. While access may be impacted, overall travel would be improved by construction of the new expressway facility.

Cumulative Effects

Socioeconomics: Regional Connectivity. While the proposed improvements have benefits as a stand-alone project, the approximately 27-mile long route would have greater benefits once the entire Heartland Expressway is completed. Congress identified this High Priority Corridor in 1991 to extend from Denver through Scottsbluff to Rapid City. Since 1991, about 50 percent of the Heartland Expressway has undergone improvements. Currently, it is a four-lane divided highway from the City of Minatare west past Scottsbluff and south to Interstate 80 (I-80), and from the Nebraska-South Dakota state line north to Rapid City. This leaves a two-lane gap between the four-lane sections, extending from the Nebraska-South Dakota line south and west to Minatare. Eventually, this gap is intended to be closed by constructing a four-lane

expressway, which would provide a transportation network that connects not only the cities within the Heartland Expressway corridor, but others throughout the Great Plains. This segment would provide an expressway link for the City of Alliance to I-80, the largest freight transportation corridor in the United States, and to I-90 at Rapid City, South Dakota. According to local officials and business leaders, this connection is a vital link for all sectors of the regional economy of the Panhandle.

A new economic study conducted as part of the Heartland Expressway Corridor study shows that benefits of improvements to US 385 in Nebraska consisting of expansion to a four-lane facility would result in a benefit/cost ratio of 1.7, and improving this part of the Heartland Expressway alone would result in a benefit/cost ratio or at least 1.2—indicating a positive impact on the regional economy. These types of improvements typically provide benefits that include travel time savings (which may occur as motorists experience reduced travel times), increased safety (which may occur as the number of accidents that take place on the corridor are reduced); and operating cost savings (that may occur as the distances driven by motorists are reduced), as well as economic development feasibility.

Natural Resources: Swift Fox. Construction of the Heartland Expressway in Nebraska and nearby states has resulted in a loss of short-grass prairie habitat, and completion of the entire project would result in additional loss of short-grass prairie habitat. However, habitat losses from construction of the Heartland Expressway would be minor compared to the loss of swift fox habitat from agriculture and mineral extraction. University of Nebraska – Kearney researchers would conduct a study in the future on the potential impacts on the swift fox from the Heartland Expressway improvements.

Another action associated with the L62A/US 385 Project is proposed economic development in the Alliance vicinity. However, because this area is surrounded by pivot irrigation and rail yard development, it would not be considered suitable habitat for swift fox. The L62A/US 385 Project does not include the construction of an interchange, which is defined as a grade-separated intersection. While the L62A/US 385 Project does include replacement of the existing L62A/US 385 junction because this junction is not near any current development, is not a grade separated interchange, and would not be designed to allow easy access to surrounding properties, it is not anticipated or reasonably foreseeable that any economic growth or development would occur at this intersection where potentially suitable habitat for swift fox exists.

With the implementation of habitat enhancement measures and species protection conservation conditions, the project would have incremental minor adverse impacts on the swift fox, but would not result in significant adverse cumulative effects to swift fox.

Natural Resources: Black-Footed Ferret. Although the black-footed ferret is not currently found in Nebraska, potential habitat for the ferret is present in the project area and consists of a large prairie dog complex area in the southern part of the project alignment. The Black-tailed Prairie Dog Management Act requires property owners to prevent prairie dogs on their property from spreading onto adjacent properties. Counties would have the power to notify landowners that a colony is not being managed, and they could require landowners to take action. Landowners would have to notify counties that they have acted to address the problem.

This act would affect the black-tailed prairie dog. However, neither this act nor any other reasonable or foreseeable action has any bearing on black-footed ferret reintroduction at the Project site, as the USFWS considers this site to be a viable reintroduction site with management actions in place for prairie dogs. The Project would have no measurable cumulative effect on black-footed ferret. In addition, proposed economic development is desired in the Alliance vicinity, which is surrounded by pivot irrigation, contains no prairie dog colonies, and is not suitable habitat for black-footed ferret.

Anecdotal evidence from landowners indicates that plague hits these colonies periodically, the last time several years ago, which depressed the prairie dog population in the colony for a few years. In addition, the landowners use various eradication methods on the prairie dogs, including the use of a government trapper who uses poisoned oats during the winter. After eradication, mounds are leveled for natural revegetation

Based on this analysis, the project would have discountable effects to black-footed ferret and provide potentially beneficial indirect effects to potential black-footed ferret reintroduction habitat. By moving the roadway corridor north of the prairie dog complex, potential adverse effects from construction and animal-vehicle collisions is avoided. The project would have incremental beneficial impacts on the black-footed ferret, and therefore does not result in significant cumulative effects to black-footed ferret.

T.5 Summary of Impacts

Table 4.7 summarizes the environmental consequences and assigns a relative ranking for the two alternatives carried forward for detailed evaluation. An impact assignment of positive, negative, or no impact for each resource is presented, as well as an evaluation of whether the impact is likely to be Low, Moderate, or High. . For instance, a rank of Moderate relative to Low or None in the land use category indicates that a particular alternative would result in larger impacts on land use relative to the other alternative.

Table 4.7 – Summary of Environmental Consequences

Environmental Consideration	No-Build Alternative	Preferred Alternative
Land Ownership, Jurisdiction and Land Use	None	Moderate Negative: Acquisition of approximately 290 acres ROW, approximately 2.4 acres of temporary easements, relocation of 3 occupied residences, and removal of 8 uninhabited structures in Angora.
Socioeconomic Considerations	Moderate Negative: Decline in population expected to continue; region less desirable for new employers, no accommodation for oversized trucks or passing lanes	Moderate Positive: Would provide more reliable transportation facility through region, would improve transportation movement through the area, would encourage development/new employers to area. Would convert estimated 25 acres of developed land and approximately 37 acres of cropland to road ROW. The remainder of approximately 228 acres is agricultural pasture and/or rangeland.
Title VI/ Environmental Justice	None	None. No protected populations identified that would be adversely affected by relocations.
Cultural Resources	None	None. No effect determination.
Section 4(f) of the Transportation Act	None	None. No 4(f) properties known.
Noise	Low, likely increases in traffic.	Low Negative: Increases in traffic, but no noise impacts predicted.
Utilities	None	Low Negative: Minor utility adjustments required.
Land Resources and Vegetation	None	Low Negative: Estimated 228 acres of native habitat (pasture and/or rangeland) within required ROW, including approximately 85 acres sandhills prairie, approximately 133 acres mixed grass/shortgrass prairie, and approximately 10 acres wetlands.
Streams, Drainage, and Floodplains	None	Low Negative: Approximately 80 feet of impact due to extension of culvert at Low Line Canal. Floodplain permit will be obtained at Snake Creek crossing.
Groundwater and Wellhead Protection Areas	None	None with proposed mitigation to decommission wells within the ROW.
Wetland, Waters of the US, and Waters of the State	None	Moderate Negative: Impacts to approximately 10 acres of wetlands which have been determined to be Waters of the State, but not waters of the US. Wetland impacts will be mitigated.

Environmental Consideration	No-Build Alternative	Preferred Alternative
Platte River Depletions and Borrow	None	None with proposed environmental commitments regarding borrow sites.
Noxious Weeds	None	Low Negative to None with proposed standard specifications for revegetation.
Endangered & Threatened Species, BGEPA, Migratory Bird Treaty Act	None	None for T&E species. Not likely to adversely affect blowout penstemon & swift fox with conservation conditions. Not likely to adversely affect black footed ferret, no conservation conditions necessary. None for eagles and other migratory birds. Not likely to adversely affect eagles or migratory birds with proposed mitigation.
Farmland	None	Low Negative: Impacts to approximately 37 acres of cropland, including approximately 12 acres irrigated and approximately 25 acres dryland.
Hazardous Materials	None	Low Negative based on known sites, and proposed mitigation measures if hazardous materials are encountered.
Material Sources and Waste Materials	None	None, with proposed environmental commitments regarding borrow sites.
Temporary Construction Impacts	None	Low Negative disruption to traveling public during construction with proposed temporary access plan and phasing. Construction noise will be minor and temporary, standard provisions address dust suppression.
Secondary and Cumulative Impacts	Moderate Negative: Decline in population expected to continue; region less desirable for new employers	Moderate Positive: Will provide more reliable transportation facility through region, will improve transportation movement through the area, will encourage development/new employers/tourism to area,.

5. PUBLIC INVOLVEMENT / PROJECT COORDINATION

A. Site Visit & Local Officials Scoping Meeting

NDOR On-Site Meeting: 10 January 2011

An informal overview and discussion of the project was held with area public officials at the Knight Museum and Sandhills Center in Alliance. The 23 attendees included representatives from the City of Alliance, Box Butte Development, Heartland Expressway Board, Twin Cities Development, NDOR, and the project consultant team. The discussion included project history, environmental process, and schedule. The relationship of this design and environmental project to the Corridor Management Plan were distinguished. The local officials provided insight into development that is likely to occur in the near future and expressed their concerns for traffic safety along the corridor, particularly as it relates to large truck movements. Those attending boarded a bus and toured the corridor to identify key features and issues that the project would need to address.

B. Citizen Survey by Alliance Police Department

The Alliance Police Department conducted an informal survey to determine the types and frequency of near-miss incidents along the project length. Twenty persons completed the survey and described their experiences travelling along US 385. The most frequently mentioned concern was the truck traffic from beet or hay haulers and the associated difficult passing maneuvers. **Appendix K** includes the full survey results from this public outreach.

C. Limited English Proficiency

To comply with Executive Order 13166 on improving access to services for persons with limited English proficiency (LEP), an analysis was conducted of language spoken in the project area. **Table 5.1** provides the results.

Table 5.1 – Limited English Proficiency Analysis

Area	% of Population that Speaks ONLY English	Languages Other Than English Spoken by 5% or Greater of the Total Population*
Tract 9511, Box Butte County	97.5%	None
Tract 9513, Box Butte County	88.8%	None
Box Butte County	93.3%	None
Morrill County	89.5%	None

* These figures reflect the population of an area that speaks a language other than English, and also speaks English "Less than Very Well." All data from 2008-2012 American Community Survey Table B16001.

The project area is mostly English-speaking. In the areas surveyed, none of the data indicates the presence of an LEP population that reaches the NDOR LEP outreach triggers of 5 percent or 1,000 persons. No LEP outreach is recommended for this project.

D. Formal Public Outreach

Public Information Meeting: 3 May 2011, 4-6 pm MST

A Public Information Meeting was held on the proposed project at the Knight Museum and Sandhills Center at 908 Yellowstone Avenue in Alliance. The meeting was held in the theatre room of the facility, which is Americans with Disabilities Act (ADA) accessible. Notices were published in English in the *Alliance Times-Herald* on 12 and 16 April 2011 and in the *Bridgeport News-Blade* on 13 and 27 April 2011. Project notification information sheets were mailed to 259 key area stakeholders. A news release announcing the open house was distributed through NDOR's normal media distribution on 19 April 2011. A story was included in the *Scottsbluff Star Herald* on 16 April 2011. Signs were also placed at two locations along the corridor to inform drivers of the public meeting.

Seventy-nine (79) persons attended the meeting, not including NDOR officials and consultants. The meeting was conducted in an open house format with informational displays and stations throughout the room. The project design team was available to answer questions and take comments. Thirteen written comments were received. All handouts were available in both English and Spanish, and a Spanish translator was available.

Most of the comments received were supportive of the project. The local community considers the roadway to be in need of upgrading due to the presence of large trucks, and poor visibility due to the vertical curves. Most attendees were middle-aged to older, and there were no foreign language speakers. Several people mentioned they learned about the meeting from reading the newspaper, direct mailings, and/or highway signs. Documentation of the NDOR Public Information Meeting is provided in **Appendix L**, including information on advertising, venue, support materials, attendance, and public comments. **Table 5.2** provides a summary of the public comments. At that time names of the alternatives were as follows:

- Alternative 1 was the longest sweeping curve
- Alternative 2 was the mid-range curve
- Alternative 3 was the shortest curve
- Alternative 4 was the Angora west alignment
- Alternative 5 was the Angora middle alignment
- Alternative 6 was the Angora west alignment
- Alternative A was the 5-lane flush median centered on the existing alignment
- Alternative B was the 5-lane raised median with east edge of pavement held
- Alternative C was the 5-lane divided median with east edge of pavement held
- Alternative D was the 5-lane raised median offset to the west
- Alternative E was the 4-lane divided median offset to the west

Following the meeting, the names of the alternatives were changed; however, no new alternatives were developed.

Table 5.2– Citizen Comments from the Public Information Meeting

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
1. (Citizen)	5/3/2011	In Person	Why not cross railroad to the east to minimize ROW impacts in Angora	The project stayed west of the railroads to use exiting ROW and roadway. It is also difficult and expense to cross railroad.
2. (US Rep. Assistant)	5/3/2011	In Person	Wanted to know what safety improvements could be added if stayed 2 lanes; project phasing. Noted that the region's cities and academic institutions were especially interested in the project for economic development opportunity. Summer months are challenging between local and tourist traffic.	Thanked them for their comment. The roadway would have wider surfaced shoulders (a Super-two), with flatter backslopes to reduce drifting snow, centerline rumble strip, improve certain vertical curves.
3. (Citizen)	5/3/2011	In Person	Wanted to know utility impacts/gaslines; environmental process. Thought prairie dogs had already been moved.	The project team works with utility companies to determine locations. ROW process does not occur until Environmental is complete. Explained that the prairie dogs would be evaluated during the Environmental process.
4. (Citizen)	5/3/2011	In Person	Asked about overlay in the interim.	Generally, NDOR utilizes existing pavement until such a point it can no longer be maintained and must be replaced.
5. (Citizen)	5/3/2011	In Person	Likes Alt 1 b/c allows for flatter grades. Noted that his loaded hauls are downhill and empty going back up L-62A. Thought the project might "clip" his pivots	Thanked them for their comment. NDOR would determine the grades on the sweeping curve depending on the amount of grading through the hills and valleys. Designers would take the pivot & well location into account and would take steps to study the severity of impacts and studying ways to minimize impacts. The ROW process cannot occur until the environmental is complete. NDOR would contact impacted property owners and work through the Uniform Act regarding acquisition.

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
6. (Citizen)	5/3/2011	In Person	Concerned about amount of traffic. His house is the old kitchen house from the 1st Country Club from the 1920s. Would like to see old highway rehabbed for access to town that's not the main highway.	SHPO review would be completed as part of the project. (Review indicated that the house in question would not be impacted by the project.) The existing highway ROW, including the ROW where the 'old highway' was, is being used to accommodate the widening in this area. As such the existing highway and old highway would be completely removed with this project and replaced by the new highway.
7. (Citizen)	5/3/2011	In Person	Safety is main concern. Near miss accidents when drive the highway. Need to start the project before S.D. finishes their last 24 miles!	Thanked them for their comment.
8. (County Board Rep)	5/3/2011	In Person	Likes Alt 3 or 4. Limit changes to County Road 95 and 118. Give farm equipment wider county roads to access Angora for less time on 385.	Alternative 4 through Angora was selected as part of the Preferred Alternative, having the least impacts. The realignment of County Rd. 118 through Angora provides adequate width for farm equipment and provides a direct crossing of US 385 to avoid having to drive on US 385.
9. (City Council Rep)	5/3/2011	In Person	Don't understand why the process takes so long. Wonders if she'll see it done.	Thanked them for their comment.
10. (Reps for Dinklage Feedlot)	5/3/2011	In Person	Recently spent \$185,000 upgrading lagoon system to meet NDEQ requirements. Site drains to ponds along road and then pump to center pivot land application. If the highway impacted the lagoons, it would require relocating the lagoons and 2 rows of cattle pens (approx. 4000 cattle). They use the Snake Creek crossing to run cattle under the highway and railroad track to access their land on both sides. It is a dry creek.	Designers have made adjustments to the design to avoid impacts to both the lagoons and cattle pens. The cattle crossing at Snake Creek would be perpetuated with the project.

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
11. (Citizen)	5/3/2011	In Person	Safety is main concern. Near miss accidents when drive the highway.	Thanked them for their comment.
13. (Citizen)	5/3/2011	In Person	Big Picture should include oil drilling in Niobrara formation. One oil well would require 1200 truck trips.	Increased traffic capacity on the Heartland Expressway due to economic development is part of the project purpose and need.
14. (Citizen)	5/3/2011	In Person	Lives in Angora. Against Alt.5. Prefer alternate through Angora that does not shift. Concerned about impacts to property including ROW and noise. Reduction in at-grade crossings would help noise. Trains blow horn three times/day in Angora.	Alternative 4 through Angora was selected as part of the Preferred Alternative, having the least impacts. At-grade crossings with railroad tracks cannot be removed without land-locking properties and is not a consideration.
15. (Citizen)	5/3/2011	In Person	Get it done.	Thanked them for their comment.
16. (City of Alliance Rep)	5/3/2011	In Person	Supports project; the City is starting to develop an intermodal plan. Airport runway could support freight. Combine with highway and railroad - economic development opportunity. He noted an increase in BNSF hiring bring more people to the area and adding commuters to the highway. Working with NE Dept of Economic Development.	Thanked them for their comment.
17. (Highway archeologist)	5/3/2011	In Person	Works at Ft. Robinson and travels frequently on 385. Concerns regarding safety and close calls.	Thanked them for their comment.
18. (Citizen)	5/3/2011	In Person	Safety concerns and traffic. Beet harvest season the trucks go 24/7 unless bad weather. Travel 385 frequently. Experience many vehicles in oncoming traffic trying to pass.	The preferred alternative is a 4-lane highway which would eliminate traffic entering on-coming lanes to pass.

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
19. (Land-owner)	5/3/2011	In Person	Three (3) family members in attendance and other relatives live in vicinity of SW corner of 385 and Sarpy Road. Concerns about ROW and their properties. Commented that they may like to be acquired, stating that the "intersection skew angle could be improved" if their property is acquired. Land behind homes is farmed by the attendee's uncle. There is a domestic water well on their property.	The two residences near US 385 and Sarpy Road would be acquired with this project. There are no registered wells on the NDNR database registered to the family's name or associated with the address. Unregistered wells would need to be registered with the NDNR and if potentially impacted by construction would following the well abandonment and relocation (if necessary) procedures outlined by state law (see mitigation measure regarding wells). Negotiations with the well owners would occur during the ROW process. The ROW process cannot occur until the environmental process is complete. NDOR would contact impacted property owners and work through the Uniform Act regarding acquisition. The discussion concerning early acquisition would occur at this time. (The acquisitions would not affect access to the remaining properties in the area. No known protected populations would be affected by the relocations).
20. (Citizen)	5/3/2011	In Person	Wondered if a permanent DOT truck scale would be constructed as part of the project. Likes the alternatives at the US 385 & L62A junction. Curious why the project is stopping at 3rd St and not 10th Street.	The existing Truck Scale location would be relocated just north of Angora. Portable truck scales would continue to be used. The logical termini for the northern end of the project is the junction of W. 3rd Street and US 385 because W. 3rd Street is Nebraska Highway 2 (N-2) and one of two major intersections along this stretch of US 385. The other is L-62A at the southern end of the project. 10th Street is a local roadway and was included within the environmental study area. (Logical termini is discussed in Section B.4 of the Draft EA)

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
21. (Land-owner)	5/3/2011	In Person	Landowner south of CR128 on west side of US 385. Worried about widening impacting his center pivot well. It can't be moved due to trees in the way. Suggested shifting roadway to the east to use old ROW to reduce impacts to the center pivot. Also indicated need for a cattle crossing under 385 in the same area as previous since his operation is on both sides of the highway.	Thanked them for their comment. Designers would take the pivot & well location into account and are taking steps to study the severity of impacts and studying ways to minimize impacts. The ROW process cannot occur until the environmental is complete. NDOR would contact impacted property owners and work through the Uniform Act regarding acquisition. (The driveway access/cattle crossing would be maintained in its existing location and current practices would continue to be allowed unless state law changes (see Section B.5 regarding property rights acquisition).
22. (Land-owner)	5/3/2011	In Person	Landowner on west side of 385 about Station 360. Concerned about median breaks and running his cattle from east to west across highway. Would like median breaks at Station 346 and 360. Likes Alt. 3.	Thanked them for their comment. NDOR and the project designers would take it under consideration. (NDOR provided median breaks at the requested locations through the access control committee. The driveway access/cattle crossing would be maintained in its existing location and current practices would continue to be allowed unless state law changes.)
23. (Citizen)	5/3/2011	In Person	Concerned about access to property east of rail road tracks via Sarpy Road and sight distance when turning onto 385	Thanked them for their comment. The designers would evaluate sight distance at the intersection as part of the project.
24. (Citizen)	5/3/2011	In Person	In support; Pleased to see that none included a frontage road through his property. Concerned about BNSF traffic using Rock Road and if that could be limited.	Thanked them for their comment and stated that because Rock Road is a public road there wasn't anything that could be done about BNSF using the road to access their facilities.
25. (Citizen)	5/3/2011	In Person	Three different residents along 385 between Rock Rd and Kansas Ave. indicated they did not like the 5-lane alternative. They preferred the shifted alignment to the west with a frontage road giving them access.	Thanked them for their comment and stated that it would be taken under consideration.

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
26. (Land-owner)	5/3/2011	In Person	Landowner on northeast corner of 385 & Kansas Ave concerned about sight distance between N-2 and Kansas Ave. His house is close to the intersection and had ROW concerns and driveway access; amount of traffic on Kansas Ave. and frontage road lining up with his driveway and the entrance to the Pepsi distribution center.	Thanked them for their comment and stated that it would be taken under consideration. A plat showing the location of the proposed drive was requested from the city.
27. (Citizen)	5/3/2011	In Person	Discussed number of truck on 385 and concerns regarding two-lane traffic trying to pass. Stated that driving south from Alliance is slow and below posted speed limit due to traffic and limited passing zones.	Thanked them for their comment. The design team would take their comment under consideration.
28. (Citizen)	5/3/2011	In Person	Traffic concerns during harvest. Would the traffic study take harvest into account?	The traffic study is based on the design hour volume and average daily traffic (peak hours of traffic throughout the day).
29. (Citizen)	5/3/2011	In Person	Indicated tremendous traffic on 385. Cite beet trucks, cattle trucks and freight between NE, WY and ND	Thanked them for their comment.
30. (Heartland Expressway Board Member)	5/3/2011	In Person	Disappointed at length of time this project has taken. The Board is looking at the big picture and not just the L62A junction to Alliance. It is "mind boggling" what traffic would come through if the connection was in place linking Canada and Mexico. The current traffic, especially during beat season (Oct-Feb) is dangerous and congested.	Thanked them for their comment.
31. (Citizen)	5/3/2011	In Person	Making left turns off 385 to Sarpy Road is dangerous b/c drivers pass on the shoulder.	Thanked them for their comment. Left-turn movements would be addressed by the improvements.

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
32. (County Commissioner)	5/3/2011	In Person	Supports project; asked about project schedule.	Referred to project handout for timeline.
33. (WEST-CO Rep)	5/3/2011	In Person	Southeast corner of 385 and 3rd Street. Prefers full access including left turns onto 385. Would be willing to accept right turn-in/right-turn out if he can maintain his two drives on 3rd Street	Thanked them for their comment. The design team would take their comment under consideration. (The preferred alternative in Alliance is the 5-lane TWLTL on 385. The two drives on 3rd Street would be maintained).
34. (Citizen)	5/3/2011	In Person	Landowner in southwest corner 385 and Sarpy Road. Stated BNSF drives on and off their property wherever they want to.	Thanked them for their comment.
35. (Citizen)	5/3/2011	In Person	Supports project; likes left-turn lane as a feature	Thanked them for their comment.
36. (Land-owner)	5/3/2011	In Person	Lives in Angora. Against bypass alternative. Prefers existing alignment. Concerns about wide farm machinery getting from point west of Angora to BNSF tracks. Did not agree with District's placement of delineators along highway in Angora to prevent the illegal use of the public's ROW.	Thanked them for their comment.
37. (Citizen)	5/3/2011	In Person	Supports project	Thanked them for their comment
38. (Citizen)	5/3/2011	In Person	Lives northeast of 385 and Rock Road. Supports project; does not like Rock Road ending at railroad	Thanked them for their comment.
39. (Citizen)	5/3/2011	In Person	Supports project; Likes Alt 1.	Thanked them for their comment.
40. (Land-owner)	5/3/2011	In Person	Supports project; Owns land along 385 north of Alliance. Curious about plans for highway north of Alliance. Prefers Alt. 1 at L62 junction.	The long term plan for the Heartland Expressway was for the four lane to end at Alliance and they the highway near his property would remain a two lane with truck passing lanes.

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
41. (Citizen)	5/3/2011	In Person	Landowner near Angora. Concerned bypass alternative would move the highway to his property line. Prefers the alternative to stay on alignment and go through Angora.	Thanked them for their comment. The design team would take their comment under consideration. (Alternative 4 through Angora was selected as part of the Preferred Alternative, having the least impacts).
42. (City of Hemingford Rep)	5/3/2011	In Person	Supports project; Formerly on the Heartland Expressway committee; wants to see it built before lose funding. In favor of building alternates that are cheaper if meant building the four-lane option.	Thanked them for their comment.
Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
Written comments received at or after the Public Information Meeting				
43. (Citizen)	5/3/2011	written	This project needs to be a top priority for economic growth & survival in the Panhandle. Delaying the project would delay the growth of the Panhandle.	Comment was noted.
44. (Citizen)	5/3/2011	written	Why do we not get on board...it only benefits the communities in Western Nebraska. Prefers Alt 1 at Angora	Comment was noted.
45. (Citizen)	5/3/2011	written	S.D. only 28 miles left; get it done!	Comment was noted.
46. (Citizen)	5/3/2011	written	strong support; don't worry about prairie dogs; We need 4-lane to S.D. and Sidney, truckers go at 450/load	Comment was noted.
47. (Citizen)	5/3/2011	written	support; continue to S.D. border!	Comment was noted.
48. (Citizen)	5/6/2011	mailed	Very impressed w/ mtg; south-bound traffic a concern; wants it done. PS-- project promotes economic development to region.	Comment was noted.

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
49. (Citizen)	5/6/2011	mailed (With Alt A map from hand-out attached & his property marked)	Prefers Alt A; Currently uses old highway as frontage road and for mail. Concerned about snow removal on east side of 385 and the frontage road. Says the city/county doesn't remove snow.	Comment was noted and addressed in the EA during the alternatives analysis. (Alternative 10, 11, and 13 were eliminated in preliminary screening partly due to increased maintenance and snow removal for frontage roads.)
50. (WETCO Rep)	5/12/2011	mailed	Prefers Alt A, 5-lane flush median centered for ease of access to WESTCO's business "Terry's Corner"	Comment taken under consideration. (The preferred alternative in Alliance is the 5-lane TWLTL on 385. The two drives on 3rd Street would be maintained).
51. (Citizen)	5/17/2011	email	property owner; experiences frequent near misses; against Alt A, B & C; likes D & E except for access to properties; suggests limiting access to Kansas St. & north of Rock Rd.	Comment taken under consideration.
52. (Citizen)	5/17/2011	mailed	Prefer Alt 1, 5, & B; For the safety improvements and positive economic impact; resilient prairie dogs would repopulate; looks forward to project	Comment taken under consideration.
53. (Citizen)	5/3/2011	in person	Support project; Driving during harvest season for wheat (July), potato (Sept) and beans is not safe. Avoids the highway during beet season.	Comment taken under consideration.
54. (Citizen)	5/19/2011	phone	Asked if it was too late to comment. Doesn't believe project would bring the economic impact many locally believe it would because front range to Rapid City S.D. uses WY due to increased speed limits and cheaper gas.	Thanked them for their comment.
55. (Citizen)	5/18/2011	mailed	Likes Alt 1 best but believes Alt 3 is less expensive; Alt 4 best option for less near accidents; Likes Alt A by Alliance -- There is a need for four-lanes. Experienced near miss accident with tractor trailer.	Comment taken under consideration.

Citizen Comments & Project Sponsor's Response				
Comment No.	Date	Type	Comment Summary	Response Summary
56. (Citizen)	5/18/2011	mailed	like to see Alt 1,4, A	Comment taken under consideration.
57. (Citizen)	5/19/2011	email	If (Angora) roadside park (former rest area) closed would like the land returned to their section but prefers to see if left open for people to use. Prefers Alt 3 overall. Likes Alt 4 best over Alt 5 but would like to know more about Alt 5 access; advantage to 4-lane would be ability to pass	Comment taken under consideration. (The south drive to the former rest area is remaining in place to allow field access. The rest of the pavement within the former rest area would be removed.)

See **Appendix L** for description of Alternatives and additional detail.

E. Agency Coordination

A scoping meeting was conducted on 16 September 2010 with FHWA, NDOR, and the project consultants. The purpose of the meeting was to develop the scope of analysis and determine major issues that would need to be analyzed in the EA.

Following NDOR protocol, coordination with the SHPO and THPOs, including letters to 21 tribes (**Appendix C**), was handled by FHWA (**Appendix G**).

Informally FHWA and NDOR have met with USFWS and NGPC throughout the development of the EA. The initial meeting to discuss the project occurred on 29 November 2011. The primary concerns of USFWS and NGPC were the prairie dog colony near the sweeping curve and the habitat connectivity of the swift fox. Requested information on the prairie dog colony and its relationship to the sweeping curve alignments (Phase III) was provided to USFWS and NGPC in memos dated 3 June 2011 and 4 November 2011. A Biological Assessment (BA) was prepared and approved by NDOR in compliance with the *Nebraska Programmatic Agreement for the Federal Aid Transportation Program* (January 2012).. FHWA signed the BA on 29 April 2012 and submitted the BA to USFWS and NGPC requesting their concurrence that the project “**may affect, not likely to adversely affect**” the Black-footed Ferret, Blowout Penstemon, and Swift Fox. USFWS concurred on 1 May 2014 and NGPC concurred 16 May 2014. (See **Appendix G** for agency coordination letters.)

Coordination with the US Army Corps of Engineers (**Appendix E**) was handled by the consultant for the purpose of obtaining a Jurisdictional Determination which was issued on 5 December 2012.

Required mitigation, addressing requirements of all regulatory and reviewing agencies, has been included in **Chapter 6**.

F. Public Hearing

NDOR would hold a Public Hearing for the project on 1 October 2014, 5:00-7:00 pm MST, at Newberry's, 110 W 4th Street, Alliance, Nebraska 69301. The format of the public hearing would consist of an Open House from 5:00-6:30, and a Public Forum from 6:30-7:00 pm. Public notices, letters, and news releases would be developed to inform members of the public and interested agencies of the upcoming meeting details. The first legal notice of the hearing would be provided approximately 31 days before the hearing, and again 14 and 7 days before the hearing.

NDOR would provide an accessible meeting facility for all persons. Reasonable accommodation would be made for people who are hearing and visually challenged or who have limited English proficiency (LEP). If requested, materials would be provided languages other than English. NDOR would specifically invite all those that would be directly affected by the proposed project.

Design information would be displayed and personnel from NDOR would be present to answer questions and receive comments about the project. This hearing would be held for coordination and fact-gathering on the NEPA document, as well as to provide and receive information regarding environmental impacts. The project study team would be present to receive design input regarding the project. Design plans and the Draft EA would be developed further after the public hearing.

The Draft EA would be available for public review at the hearing. Copies of the Draft EA would be available at the following locations:

City of Alliance – City Clerk	324 Laramie Avenue	Alliance, Nebraska
US Post Office	South 1 st Street	Angora, Nebraska
City of Bridgeport – City Clerk	809 Main Street	Bridgeport, Nebraska
Alliance Public Library	1750 Sweetwater Avenue	Alliance, Nebraska
NDOR District 5 Office	140375 Rundell Road	Gering, Nebraska
NDOR Headquarters	1500 Highway 2	Lincoln, Nebraska
FHWA Nebraska Division	100 Centennial Mall North	Lincoln, Nebraska

Before the public hearing, the Draft EA would also be available on the NDOR website at www.transportation.Nebraska.gov/projects/ and clicking on the “L62A/US 385” link.

There would be a 30-day comment period for the Draft EA, after which the Final EA would be prepared.

6. MITIGATION MEASURES

A. Summary

To comply with all applicable Federal, State and local legislation, as well as any general or special conditions required by pending permits, the following mitigation measures/environmental commitments have been incorporated into the Preferred Alternative. These commitments would be implemented during the appropriate project phase. The mitigation measures are presented in association with the resource for which they most directly act to avoid or minimize impacts. Although some of the listed measures apply to multiple resources, they are listed only once, under the resource which they most directly benefit.

In addition to the mitigation measures, NDOR Standard Specifications and Special Provisions would be applied to the Preferred Alternative to provide specific methodology.

B. Land Ownership, Jurisdiction, and Land Use

Access to individual businesses, residences, and other facilities in the area will be maintained during construction (NDOR ROW Division, Contractor).

Property rights acquisition will be conducted by payment of fair market value for the property rights and damages that may occur as a result of the taking. Property rights acquisition will be completed in conformance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (Uniform Act), as amended, (42 USC 4601 et seq.), and the Nebraska Relocation Assistance Act (Neb. Rev. Stat. Section 76-1214 et seq.).

C. Socioeconomic Considerations

Maintain or replace existing livestock crossings. Contractor would coordinate with landowners during construction to ensure timing of restrictions would not interfere with their operations (NDOR Environmental, District Construction, Contractor).

Per Standard Practice, NDOR shall notify the public at the start of construction by placing notices in the newspaper before construction, and electronic message boards may be used before the beginning of construction activities. NDOR shall also notify emergency services such as police and fire departments before construction activities begin, as well as maintain continued coordination throughout construction. Emergency services providers would be invited to the pre-construction meeting for this project (NDOR Communication, NDOR District 5).

Per standard specifications, the Contractor shall at all times, to the extent practicable, provide private dwellings, commercial properties, businesses, and public facilities access to and from the nearest intersecting public road or street (NDOR, 2007). Accommodations shall be made to ensure local traffic passing within the limits of the project has access to all private dwellings, commercial properties, businesses, agricultural properties, and public facilities. During those periods when a road is closed, even for a short duration, limited access must be maintained for authorized local traffic. If access is to be closed longer than one day, the Contractor would coordinate with the affected property owners (Contractor, NDOR District 5).

D. Cultural and Paleontological Resources

For cultural resources, no pre-construction mitigation is required because no resources were identified.

For paleontological resources, additional field surveys and test excavations should be conducted prior to construction. The Highway Paleontology Program should be informed throughout the planning process with regard to alignment choice, grading details, and borrow pit locations. On-site monitoring and the fossil mitigation plan mentioned above would be implemented throughout all phases of construction.

In the event of a discovery of archaeological or paleontological materials during construction, NDOR Standard Specifications for Highway Construction 107.10 (pg. 60, 2007) states, "The Engineer will be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation" (NDOR District Construction, Contractor).

E. Utilities

The Contractor shall follow the guidelines of NDOR's Policy for Accommodating Utilities on State Highway ROW (NDOR, 2001). It is NDOR's responsibility to notify utility companies of the need for relocation during the design stage of the project. The NDOR Utility Section will coordinate utility agreements with the utility companies prior to construction. It is the Contractor's responsibility to notify utility companies of relocation needs during the construction phase of the project for utilities that were not relocated before construction (NDOR Communications, NDOR District 5, Utility Provider(s)).

F. Land Resources and Vegetation

Upland vegetation disturbed by road construction will be seeded with appropriate seed mixtures. Sandy soils will be protected from erosion by BMPs. NDOR Standard Specifications will be followed (NDOR Roadside Stabilization Unit, District Construction).

Those areas disturbed during construction will require revegetation to prevent future erosion, sedimentation, or blowout conditions. To reduce impacts on vegetation within the limits of construction and permanent ROW and to ensure successful revegetation, some or all of the following measures should be implemented:

- Develop seed mixtures, rates and seeding dates for project areas.
- Use manure as a topdressing to help establish vegetation in nutrient-poor sandy soils.
- Apply mulch on all slopes and ensure that mulch is adequately anchored to prevent wind and water erosion.
- Implement specific procedures to prevent introducing or spreading noxious weeds.
- Conduct follow-up inspections of all disturbed areas during the project establishment phase to determine vegetation success.
- Remediate seeded areas as necessary until revegetation is successful.

- The top 4 to 6 inches of soil should be saved and stockpiled during construction for re-spreading on disturbed areas.
- Standard Specification Division 800 – Roadside Development and Erosion Control
- Standard Specification Section 805 - Certified noxious weed free mulch.

G. Streams, Drainage, and Floodplain Considerations

A floodplain development permit will be obtained for the Snake Creek crossing (Project Sponsor).

H. Groundwater and Wellhead Protection Areas

NDOR ROW will coordinate with the owners of wells that will be directly impacted by the proposed project. If the well is actively used, NDOR ROW will get estimates to have the property owner hire their own contractor to replace the well. NDOR ROW will then have an independent contractor decommission the well after ROW negotiations and acquisitions are complete. If the well is not in use, the Contractor will decommission the well after negotiations with the owner (Contractor, NDOR ROW).

A licensed water well contractor will decommission any wells in accordance with the Nebraska Department of Health and Human Services regulations under Nebraska Administrative Code Title 178, Water Well Standards, Chapter 12, Water Well Construction, Pump Installation, and Water Well Decommissioning Standards (12 February 2005) (Contractor, NDOR ROW).

I. Wetlands, Waters of the US, and Waters of the State

Before any construction work, NDOR will obtain a Section 404 permit from the USACE if impacts on Waters of the US are anticipated, as well as a Letter of Opinion of Non-Degradation from NDEQ for Impacts to Waters of the State (NDOR Environmental).

As the Corps of Engineers has determined that all the wetlands that occur on the project site are Waters of the State, permanently impacted wetlands will require mitigation as determined in coordination with NDEQ. The typical wetland creation ratio for replacement of impacted wetlands ratios is 1.5:1, thus requiring approximately 15 acres of mitigation wetlands to offset approximately 10 acres of wetland impacts. However, at the discretion of NDEQ, impacted wetlands occurring within roadside ditches may be mitigated on-site at a 1:1 ratio, if the project design allows for the creation of new ditch wetlands adjacent to the impacted areas. Appropriate mitigation sites will require adequate hydrology, and will be seeded with a mix of hydrophytic grasses and sedges appropriate for the region to create in-kind replacement. Monitoring the progress of vegetation establishment and evaluating hydrology will be required to ensure the success of the mitigation wetland areas (NDOR Environmental).

NDOR will obtain a Construction Storm Water (CSW) Permit from NDEQ under the NPDES and will produce an associated SWPPP before submitting the Notice of Intent (NOI). Additionally, NDOR is required as part of their MS4 permit to report annually to NDEQ on the status of post-construction activities. NPDES requirements include the evaluation of impaired and unique waters as part of the CSW NOI, SWPPP preparation, and MS4 permit (NDOR Roadside Stabilization Unit).

J. Platte River Depletions

The Contractor will be required to provide the needed borrow material and will identify a source of material that does not include dredging Platte River sediment. The Contractor shall try to obtain borrow material from an upland site to prevent depletion issues and will be required to submit a Materials Source Site Identification and Evaluation form to NDOR and USACE. After receiving the form, NDOR will forward the Material Source Form to the USFWS, NGPC, DNR, and HAP-NSHS (NDOR Environmental, District Construction, Contractor).

If the borrow site is located within a depletion area of concern and it is identified that it will pond water after excavation, NDOR will determine project-related impacts by calculating the evaporated loss of water at the borrow site, by using the Natural Resource Conservation Service (NRCS) – US Department of Agriculture (USDA) Consumptive Use Calculator. For borrow sites/detention basins that will result in the exposure of groundwater in the North Platte River Basin, NDOR will submit the borrow site request information to the NGPC and USFWS. This will be done to determine ways to avoid depletions or provide offsets if depletions are to occur. Requests for borrow sites that occur outside the Platte River watershed will be submitted to the DNR for tracking surface water depletions (NDOR Environmental, District Construction, Contractor).

Borrow sites that expose groundwater and are obtained outside the PRRIP areas will be offset according to the Biological Opinion prepared by NGPC in accordance with the Nebraska Nongame and Endangered Species Conservation Act. Borrow sites that pond water and occur outside the PRRIP area and the Platte River watershed will be calculated using the NRCS Consumptive Use Calculator and submitted to the DNR to be included in the report to the Governance Committee (NDOR Environmental, District Construction, Contractor).

K. Endangered Species Act, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and Fish and Wildlife Coordination Act

The concurrence package for the project includes the following conservation conditions and survey protocol that will be required for the project based on the Programmatic Agreement for Endangered and Threatened Species (and covering Bald and Golden Eagle Protection Act [BGEPA], and MBTA). The Responsible Party for the measure is found in parentheses.

K.1 General Conservation Conditions

- **Changes in Project Scope.** If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from the Federal Highway Administration. (*District Construction, Contractor*)
- **Conservation Conditions.** Conservation conditions are to be fully implemented within the project boundaries as shown on the plans. (*District Construction, Contractor*)
- **Early Construction Starts.** Request for early construction starts must be coordinated by the Project Construction Engineer with NDOR Environmental for approval of early start to ensure avoidance of listed species sensitive lifecycle

- timeframes. Work in these timeframes will require approval from the Federal Highway Administration and could require consultation with the USFWS and NGPC. (*District Construction, Contractor*)
- **E&T Species.** If federal or state listed species are observed during construction, contact NDOR Environmental. Contact NDOR Environmental for a reference of federal and state listed species. (*NDOR Environmental, District Construction, Contractor*)
 - **Refueling.** Refueling will be conducted outside of those sensitive areas identified on the plans, in the contract, and/or marked in the field. (*Contractor*)
 - **Restricted Activities.** The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (*stationing, reference posts, mile markers, and/or section-township-range references*) of the project, within the right-of-way designated on the project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites. Any project related activities that occur outside of these areas must be environmentally cleared/permitted with NGPC, as well as any other appropriate agencies by the Contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The Contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of 4 different ground photos showing the existing conditions at the proposed activity site, depth to ground water and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager will notify NDOR Environmental which will coordinate with FHWA for acceptance if needed. The Contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. (*NDOR Environmental, District Construction, Contractor*)
 - **Waste/Debris.** Construction waste/debris will be disposed of in areas or a manner which will not adversely affect state and/or federally listed species and/or designated critical habitat. (*Contractor*)
 - **Fencing.** When project-related fence construction/relocation work is required to be done prior to the start of construction and if the fence work occurs outside urban or cropland areas not within swift fox or mountain plover range, then fencing can be installed/relocated at any time using the following criteria:
 - a. the fencing is temporary in nature and/or consists of only hand-driven posts
 - b. the work does not compact the soils (ex. through the use of heavy equipment) or cause soil disturbance beyond the driving of posts
 - c. within the **whooping crane** migration corridor, work occurring within a half of a mile of wetlands or perennial waters will occur between the hours of 10:00

am to 4:00pm when the work is between March 10th to May 10th or
September 16th to November 16th

If the fencing work cannot meet these criteria, then NDOR Right-of-Way Division shall coordinate with NDOR environmental prior to the completion of Right-of-way negotiations.

- **Platte River Depletions.** All efforts will be made to design the project and select borrow sites to prevent depletions to the Platte River. If there is any potential to create a depletion, NDOR (during design) and the contractor (for borrow sites) shall follow the current Platte River depletion protocols for coordination, minimization, and mitigation. In general the following are considered de minimis depletions, but may still require agency coordination; a project which: a) creates an annual depletion less than 0.1 acre feet, b) creates a detention basin that detains water for less than 72 hours, c) any diverted water will be returned to its natural basin within 30 days, or d) creates a one-time depletion of less than 10 acre feet. (NDOR Environmental, District Construction)
- **Revegetation.** All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the Plan for the Roadside Environment. However, within the first 16 feet of the road shoulder, and within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state or federally listed threatened or endangered plants were identified in the project area during surveys. If listed **plants** were identified during survey, any seed mix requirements identified during resource agency consultations shall be used for the project. (NDOR Environmental)
- **Sensitive Areas.** Environmentally Sensitive Areas will be marked on the plans, in the field, or in the contract by NDOR Environmental for avoidance. (NDOR Environmental, District Construction)
- **Species Surveys.** If species surveys are required for this project, results will be sent by NDOR to the USFWS, NGPC, and if applicable COE. FHWA will be copied on submittals. (NDOR Environmental, District Construction)

K.2 Blowout Penstemon

- A qualified biologist will survey according to protocol during the growing season (June - July) prior to the completion of the Process. If the Natural Heritage Database identifies a known occurrence within 1.0 mile of the project, since the year 1975, there will be another survey according to protocol during the growing season immediately prior to construction. If species are not found during the survey, then the May Affect, Not Likely to Adversely Affect stands. If positive finding, then consultation is required.

The site was surveyed on June 13-15, 2011. No blowout penstemon were documented at the time of the survey. No Natural Heritage Database records exist within 1 mile of the project area. No further surveys are required.

K.3 Swift Fox

NOTE: The matrix identified both SF-1 and SF-2 conservation conditions; however, based on past conversations with NGPC and to reduce confusion, only SF-1, which is the more restrictive conservation condition, will be implemented.

- Up to a year prior to construction, NDOR or a qualified contractor may survey for potential swift fox den sites within the projects' environmental study area. Any potential den sites that are not in use by any species may be covered with 2" by 4" weld-wire fencing and adequately secured to the ground. Two weeks prior to the start of construction, a qualified biologist shall survey the environmental study area according to protocol to determine if active swift fox den sites are present. If an active den with young is located and it is outside the project limits, then a buffer zone shall be established around the den and all construction activities shall avoid the buffer until the den is abandoned. If an occupied den with or without young is identified within the project limits or staging areas, NDOR shall immediately coordinate with the NGPC and notify FHWA (if applicable) to determine how to proceed. A buffer zone shall be established around the den and all construction activities shall avoid the buffer until NDOR gives approval to enter the buffer area. Between April 1 and August 31 the buffer zone shall be 250 yards around the active den site; other times of the year, the buffer shall be 100 yards around the active den site. (NDOR Environmental)
- Within swift fox habitat (within the second and third construction projects, but not the first project in Alliance), NDOR will install fencing within the NDOR ROW using a 4-strand barbed wire, wildlife permeable, fencing (see example drawing in **Appendix G**). No woven or welded wire will be allowed. During final design coordination with USFWS and NGPC will occur to obtain concurrence on the fence locations. (NDOR Design, Construction, Contracting).
- Artificial escape dens will be installed along the project corridor in areas of suitable habitat as determined by NDOR or a qualified biologist. Escape den specifications and habitat suitability maps for the Junction L62A/US 385 to Alliance project can be found in the attached Swift Fox Escape Den Protocol (see **Appendix G**). (NDOR).
- If the speed limit is changed in the future, NDOR will coordinate with NGPC. (NDOR).

K.4 Bald and Golden Eagle Protection Act

Suitable **Golden Eagle** nesting habitat exists within 0.5 miles of the Environmental Study Area. If construction will begin between February 1 and April 15, a nest survey must be completed at least 1 but not more than 14 days prior to construction. If construction will begin between April 15 and October 1, a nest survey completed in March is sufficient, as nests will likely already be constructed if nesting will occur that year. However, a nest survey may be completed anytime during this timeframe, as long as it is completed prior to construction. If golden eagles are nesting in the area, consultation with NGPC and USFWS will be required. (NDOR Environmental, District Construction, Contractor)

K.5 Migratory Bird Treaty Act

If the proposed construction project is planned to occur during the primary nesting season or at any other time that may result in the take of nesting migratory birds, the USFWS recommends that the project proponent (or construction contractor) arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. Surveys must be conducted during the nesting season. USFWS further recommends that field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by the project proponent (and/or construction contractor) until such time as construction on the proposed project has been completed. (NDOR Environmental)

K.6 Fish and Wildlife Coordination Act

Any impacts to vegetated areas will be revegetated per BMPs included in the erosion control plan. A Temporary Erosion Control Plan shall be developed before beginning construction to avoid impacts to fish and other aquatic organisms. This plan will show the BMPs necessary at the beginning of the projects and will be updated as BMPs are added or modified throughout the construction process. When land disturbances are greater than or equal to one acre, the Temporary Erosion Control Plan would be a component of the NDOR's SWPPP. (NDOR Roadside Stabilization Unit)

Comprehensive and effective erosion and sediment control measures shall be implemented throughout the construction process to minimize the likelihood of sediment discharges. NDOR promotes the use of sediment and erosion control techniques in combination with each other, rather than as stand-alone BMPs to improve the effectiveness of these BMPs. Please refer to NDOR's "Construction Stormwater Best Management Practices" Pocket Field Guide for additional information concerning NDOR's recognized BMPs. (NDOR Roadside Stabilization Unit)

L. Hazardous Materials

Performance of the utility work set forth in the project plans and specifications will be conducted in accordance with any easement agreement among the utility companies, Box Butte and Morrill Counties, and/or private landowners, and whether or not federal funds will be used to reimburse for utility relocations. If federal funding is used, transformers will be reviewed for PCB content (the equipment can be identified by blue stickers that say either "PCB-free" or "No PCBs"). If PCB-containing transformers or other equipment are suspected to be present, NDOR requires that they be managed and disposed of according to the TSCA regulations in coordination with USEPA. Releases of PCBs to the environment at levels requiring action under TSCA are to be managed or remediated according to TSCA regulations and in coordination with USEPA. If present, the utility owner is responsible for transformer equipment, including those that are PCB-containing and will be responsible for maintaining and/or replacing equipment with PCB-free equipment. Any electrical equipment with no label or unknown concentration is assumed to be "PCB contaminated equipment" per EPA regulation and should be managed by the utility company accordingly. NDOR or their representative will contact the utilities to schedule

performance of the work and will coordinate the work with the project construction activities per NDOR's *Standard Specifications for Highway Construction*, Subsections 105.06 and 107.16 (NDOR, 2007). (Project Sponsor, Contractor)

Prior to the demolition/modification activities, structures must be thoroughly inspected for the presence of asbestos-containing material (ACM). All suspect ACM must be sampled and laboratory analyzed or is assumed to contain asbestos and must be handled as such. Suspect ACM associated with bridge structures may include, but are not limited to: utilities attached to the structure, joint compounds or sealers, and deck overlays. The inspector must be certified in accordance with the Nebraska Department of Health and Human Services (DHHS) Nebraska Asbestos Control Program Regulations, Title 178. A list of Licensed Asbestos Inspectors can be found at: <http://dhhs.ne.gov/publichealth/Documents/asbestosinspectors.pdf>. Documentation of inspection shall be provided to the NDOR project manager by the Contractor and shall be recorded in the ECOD system. If the bridge structure is compromised of only steel, concrete, brick or wood, an inspection by a certified inspection is not necessary. (Contractor)

If ACM is found to be present, removal and disposal of the ACM shall be in accordance with DHHS Nebraska Asbestos Control Program Regulations, Title 178 and will occur prior to any bridge demolition or renovation activities. The Contractor shall develop a removal and disposal plan in coordination with a licensed Asbestos Removal Contractor and NDOR. A list of Licensed Asbestos Inspectors can be found at: <http://dhhs.ne.gov/publichealth/Documents/asbestosinspectors.pdf>. (Contractor)

Demolition of structures will require the Contractor to submit a written NESHAP (National Emission Standards for Hazardous Air Pollutants) notification. If no asbestos is present, the notification is sent only to the Nebraska Department of Environmental Quality (NDEQ). If asbestos is present, in addition to the notification to NDEQ, the DHHS is also notified, using DHHS Form 5. The Contractor shall submit the NESHAP Notification of Demolitions and Renovation to NDEQ and DHHS (when required) at least 10 working days prior to commencement of any demolition activities or disturbance of any ACM. The ten day clock starts with the day the Notification is postmarked, hand delivered (includes submittals by email notification) or picked up by a commercial delivery service, such as UPS, FedEx, etc. Faxing documents is prohibited. The NDOR project manager shall be provided copies of said notifications and their submittal date, which shall be recorded in the ECOD system. (Contractor)

Currently, the Terry's Corner (WESTCO) service station at the intersection of US 385 and N-2 does not occur within the proposed construction areas. If project plans should change, a Soil Vapor Extraction (SVE) remediation system and several groundwater monitoring wells are located on the Terry's Corner (WESTCO) Leaking Underground Storage Tank (LUST) site. Although the SVE system is currently inactive and in the NDEQ site closure process, modifications to this system and any groundwater monitoring wells will require coordination with NDEQ and the owner of the system. The NDEQ contact is Quinn Krikac at (402) 472-0299. **Appendix J** includes the location of the SVE system and the monitoring wells. If the project plans should change, the location of the SVE system and associated wells should be included in all project specifications and plan drawings (NDOR Environmental, Designer, Contractor).

If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material will stop until NDOR/FHWA is notified and a plan to dispose of the hazardous materials has been developed. Then NDEQ will be consulted and a remediation plan will be developed for this project. The potential exists to have contaminants present resulting in minor spillage during fueling and service associated with construction equipment. Should contamination be found on the project during construction, the NDEQ will be contacted for consultation and appropriate actions be taken. The Contractor is required by NDOR's Standard Specification Section 107 (legal relations and responsibilities to the public) to handle and dispose of contaminated material in accordance with applicable laws. (Contractor)

If hazardous materials are encountered during construction, applicable requirements for actions to be taken are located in Section 107.01 of the Standard Specifications for Highway Construction (NDOR 2007). Prior to construction activities, a Preconstruction Meeting will be held as required by Section 103.01 of the 2002 NDOR Construction Manual. The purpose of the meeting is to discuss pertinent information to the project before construction begins, including hazardous materials reviews and health and safety issues. (District Construction, Contractor)

M. Material Sources and Waste Materials

The following project activities will, to the extent possible, be restricted to the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the ROW designated on the project plans: borrow, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage areas. Any project-related activities that occur outside these areas must be environmentally cleared/ permitted with the USFWS and NGPC, as well as any other appropriate agencies by the Contractor and those clearances/permits shall be submitted to the District Construction Project Manager before the start of the above listed Project activities. The Contractor will submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of four ground photos showing the existing conditions of the proposed activity site, depth to groundwater and depth of the planned pit, and the "Platte River depletion status" of the site. The District Construction Project Manager will notify NDOR Environmental, which will coordinate with FHWA for acceptance, if needed. The Contractor must receive notice of acceptance from NDOR, before starting the above listed project activities. (NDOR Environmental, District Construction, Contractor).

N. Temporary Construction Impacts

Access to residences, farms, and businesses located on county roads within this project would be maintained at all times via temporary roads, lane closings, phased construction, adjacent county roads, or other methods. Providing access at all times includes indirect access as well as direct access. Examples of indirect access include closing one county road intersection but leaving the adjacent ones open to maintain access. When the county road is done, it is opened and the next county road to be worked on is then closed. The goal is to maintain access from

some public road to the property owners. Public and emergency services would be notified of short-term road closures prior to them occurring. Message boards may be used to alert the public of road closures and detours. (District Construction, Contractor)

For each impacted county road, access would be constructed in phases to maintain access at all times. Methods to keep access open include: shoe-flies, constructing intersections half at a time, traffic management, and temporary access. A note would be included on the construction plans indicating that access is to be maintained. Furthermore, per NDOR's Standard Specifications, the Contractor shall at all times, to the extent practicable, provide private dwelling, commercial properties, businesses, and public facilities access to and from the nearest intersecting public road or street (NDOR, 2007). Accommodations shall be made to ensure local traffic passing within the limits of the project has access to all private dwellings, commercial properties, businesses, and public facilities. If a road is closed, limited access must be maintained for authorized local traffic. If access is closed longer than one day, the Contractor would meet with the property owners to address temporary access issues. Access details shall be coordinated among NDOR's Project Manager, the Contractor, and property owners. (District Construction, Contractor)

If a temporary access road or detour is determined necessary for portions of the phased construction outside of the study area, the impacts would be re-evaluated during final design. (NDOR Environmental)

The Contractor is required by NDOR's Standard Specification sections 309 and 312 for dust control during construction. (Contractor)

O. Public Involvement/Project Coordination

The south drive to the former rest area will remain in place to allow field access to the property owner. The remainder of the pavement within the former rest area will be removed. Future communication with the landowner in regarding ROW and access should occur during the ROW process (Project Sponsor).

Property rights acquisition will be completed in conformance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (Uniform Act), as amended, (42 USC 4601 et seq.), and the Nebraska Relocation Assistance Act (Neb. Rev. Stat. Section 76-1214 et seq.). (Project Sponsor)

7. CONCLUSION

This Draft EA has been prepared in accordance with the regulations of CEQ (40 CFR 1500-1508), as well as FHWA's implementing regulations (23 CFR 771.119 and 23 CFR 771.135). The proposed alternative is to construct a 4-lane divided highway offset to the west of the existing alignment, including context sensitive designs at spot locations. Based on this assessment, the proposed alternative would satisfy the purpose and need of the project by:

- Providing an ***improved north-south highway on a NHS High Priority Corridor that increases the efficiency and safety of commerce and travel*** as included in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).
- ***Fulfilling the legislative intent*** of the ISTEA; the Transportation Equity Act for the 21st Century (TEA-21); the ***Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)***, which have provided federally "earmarked" funds for the development of the Heartland Expressway; and the Moving Ahead for Progress in the 21st Century Act (MAP-21), which continued authorization of funding as deemed necessary in SAFETEA-LU.
- ***Fulfilling legislative intent of the Build Nebraska Act***; the State has identified this project as one of the high priority projects to receive funding under this act.
- To ***address roadway and operational deficiencies*** along this segment of the Heartland Expressway corridor.

In addition to the above purposes a goal for the project is:

- ***Improving the highway infrastructure in order to facilitate economic development*** by enhancing the efficiency and mobility of Nebraska Panhandle regional commerce for residents, businesses, visitors, and interstate travel.

The project is considered the next logical segment of the Heartland Expressway because (1) it has the highest traffic volumes, including high truck traffic; and (2) it traverses numerous short dunes requiring frequent climbs and turns resulting in areas that do not meet AASHTO standards for speed limit and NDOR standards for grade. The combination of traffic volumes and frequent climbs and turns results in decreased operational efficiency of this facility.

While the proposed improvements have benefits as a stand-alone project, the approximately 26-mile long route will have greater benefits once the entire Heartland Expressway is completed. According to local officials and business leaders, this connection is a vital link for all sectors of the economy of the Panhandle. A new economic study conducted as part of the Heartland Expressway Corridor study shows that benefits of improvements to US 385 in Nebraska would result in a benefit/cost ratio of 1.7—indicating a positive impact on the regional economy.

After reviewing and studying the Draft EA, FHWA has determined that the document adequately discusses the environmental issues and impacts of the project. A public hearing for the project will be scheduled.

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