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.

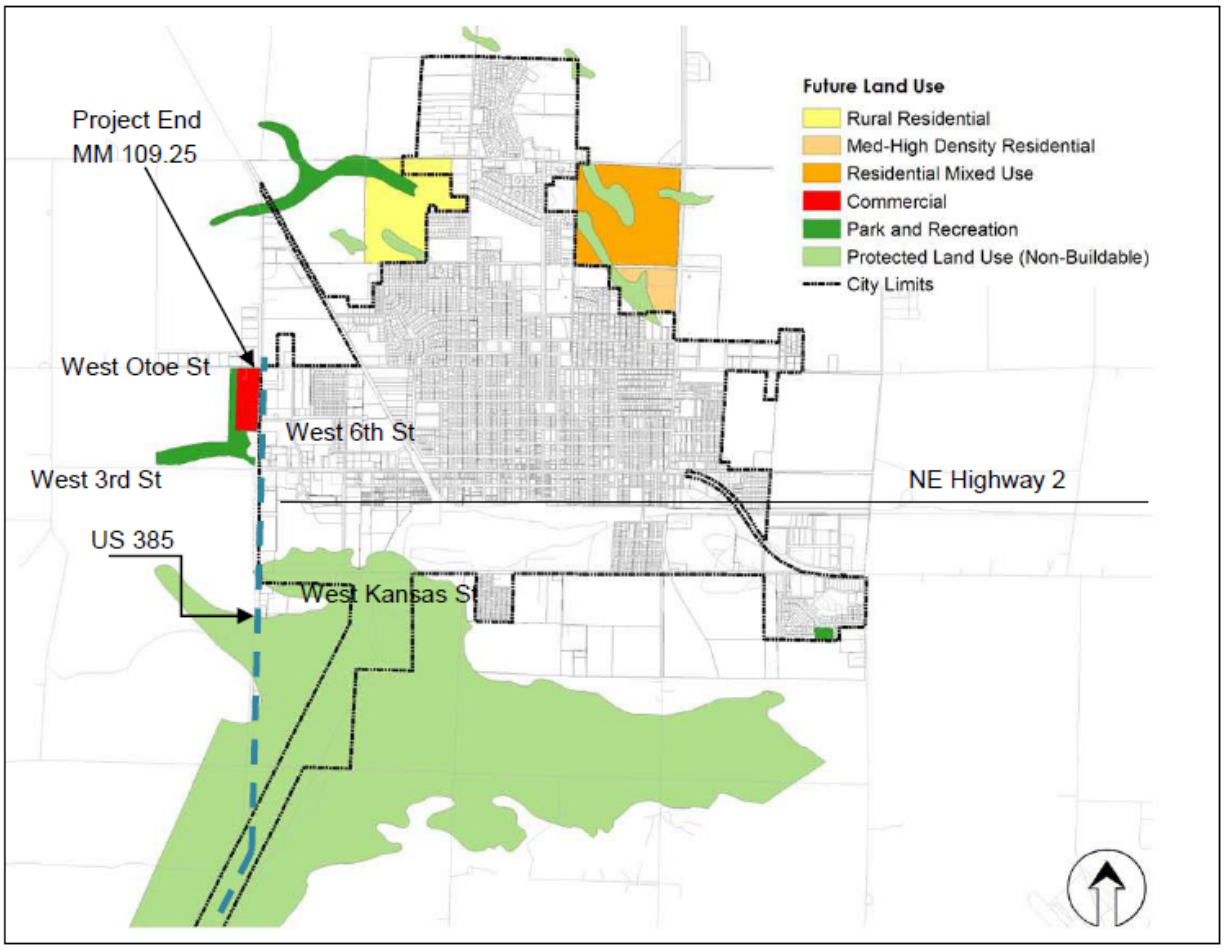
Future Land Uses

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.

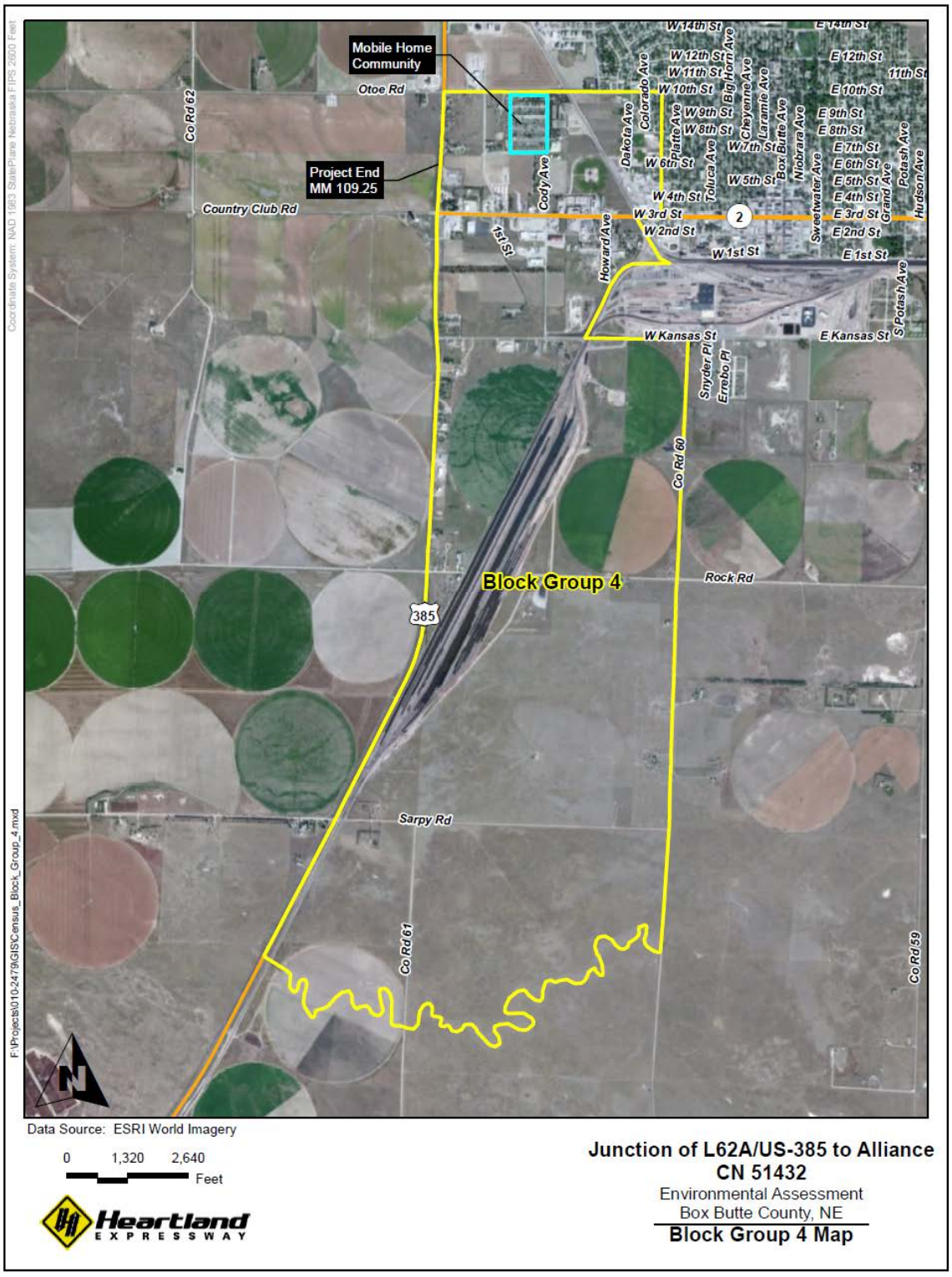
Within Census Block Group 4, ROW requirements have been minimized still further by eliminating a median and having a two-way left turn lane, thus narrowing the overall roadway. Small amounts of ROW would be needed from residences in Census Block Group 4 that front on or have driveway access to US 385,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

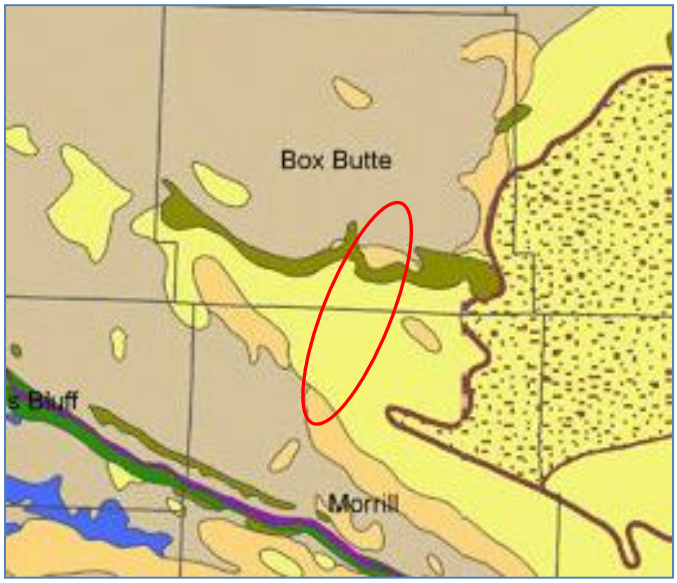
The Contractor shall follow the guidelines of NDOR's Policy for Accommodating Utilities on State Highway ROW (NDOR, 2001). It is NDOR's responsibility to notify utility companies of the need for relocation during the design stage of the project. The NDOR Utility Section would coordinate utility agreements 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 Nuttail'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)

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

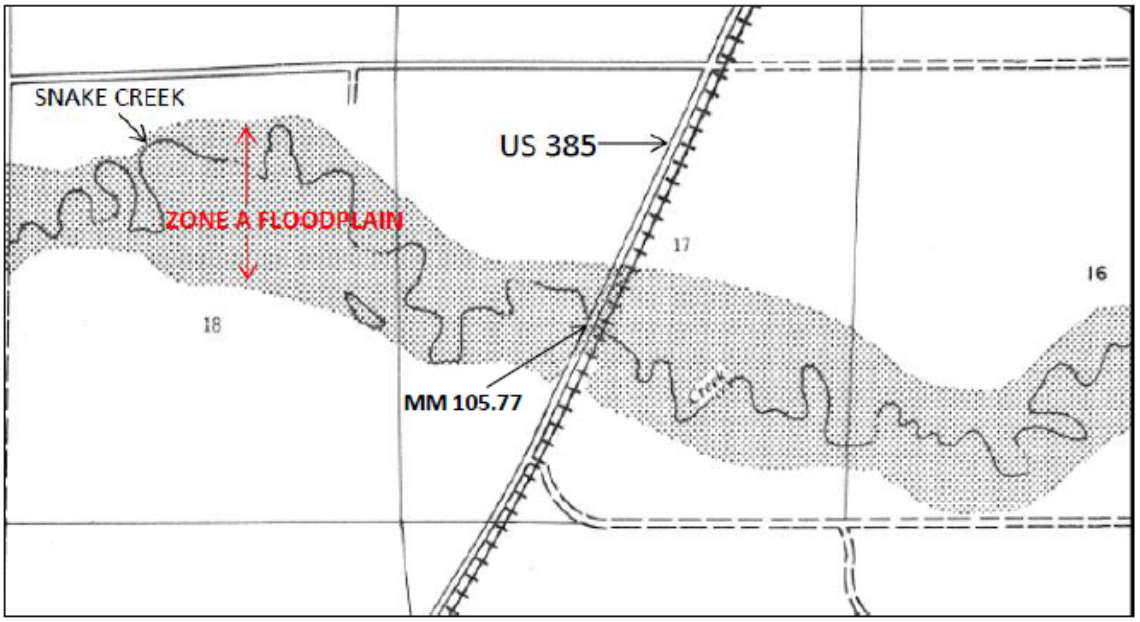
The only feature with a defined bed and bank within the project study area is the Lowline Canal, a man-made canal that supplies irrigation water to agricultural areas in the southern part of the project study area. The Lowline Canal is fed by Lake Minatare near Scottsbluff, Nebraska, and discharges into 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).

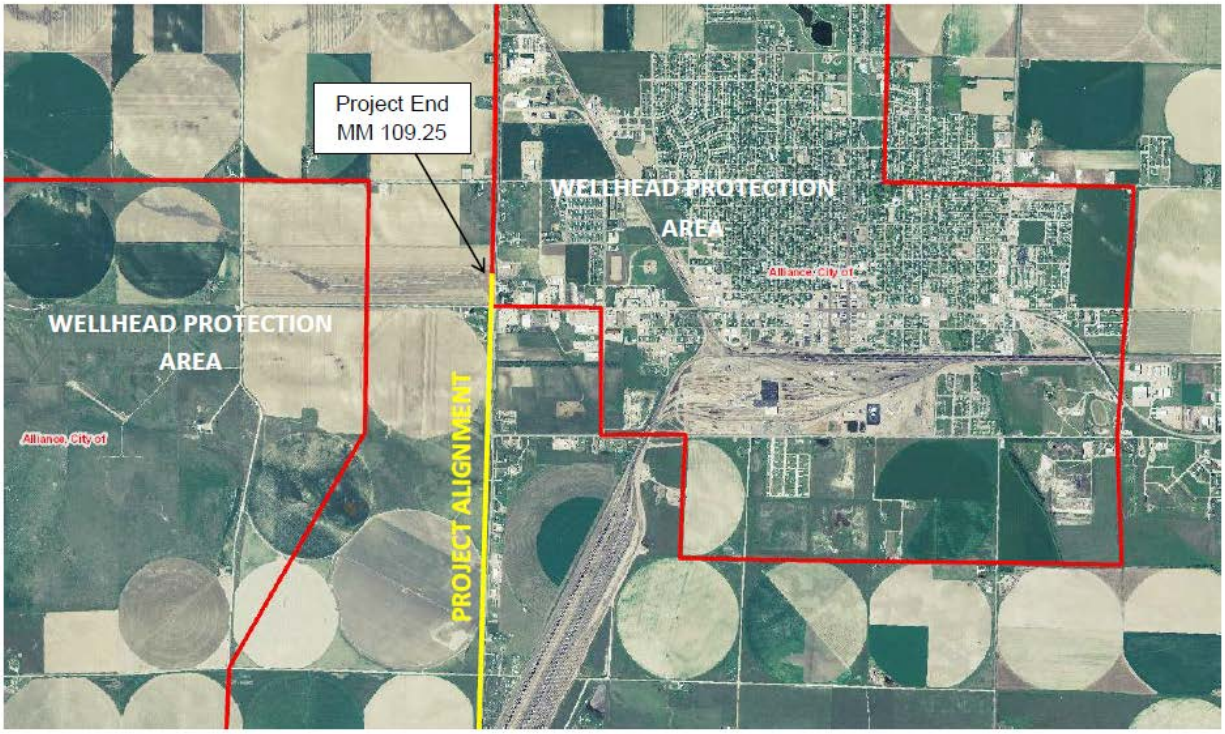
Groundwater flow may be independently influenced by water table elevations (topography) and may flow from areas with high water table elevations to areas with lower water table elevations, which may not be consistent with the direction of flow for surface water. Sites west of the project area are assumed 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.neweed.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	*Mustela nigripes*	Federal and State Endangered
Swift fox	*Vulpes velox*	State Endangered
Blowout penstemon	*Penstemon haydenii*	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	*Corvus brachyrhynchos*	Mourning dove	*Zenaida macroura*
Burrowing owl	*Athene cunicularia*	Common nighthawk	*Chordeiles minor*
Cliff swallow	*Petrochelidon pyrrhonota*	Red-tailed hawk	*Buteo jamaicensis*
Horned lark	*Eremophila alpestris*	Red-winged blackbird	*Agelaius phoeniceus*

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

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 *de Minimis* 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 *de Minimis* 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 *de Minimis* 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

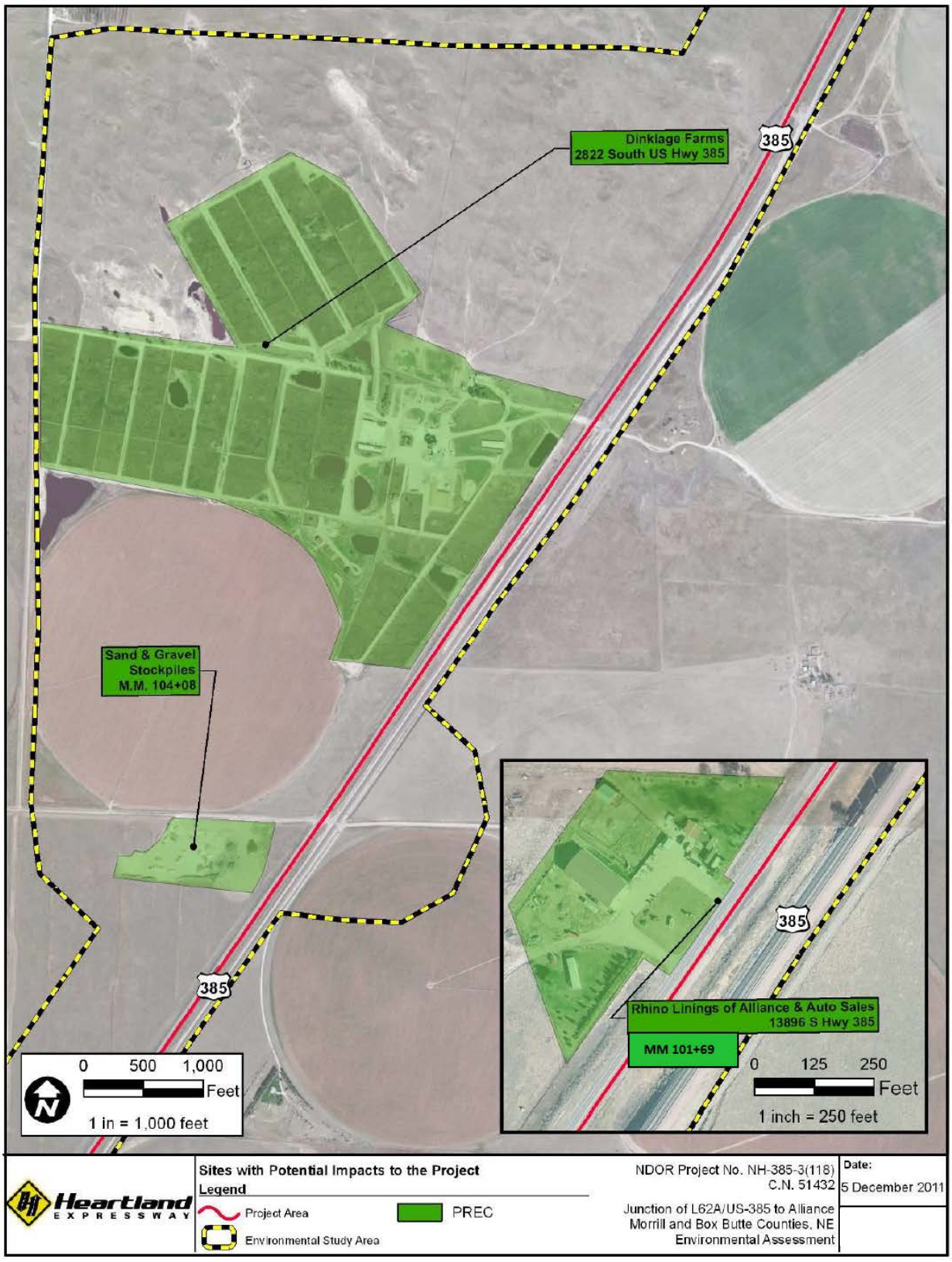
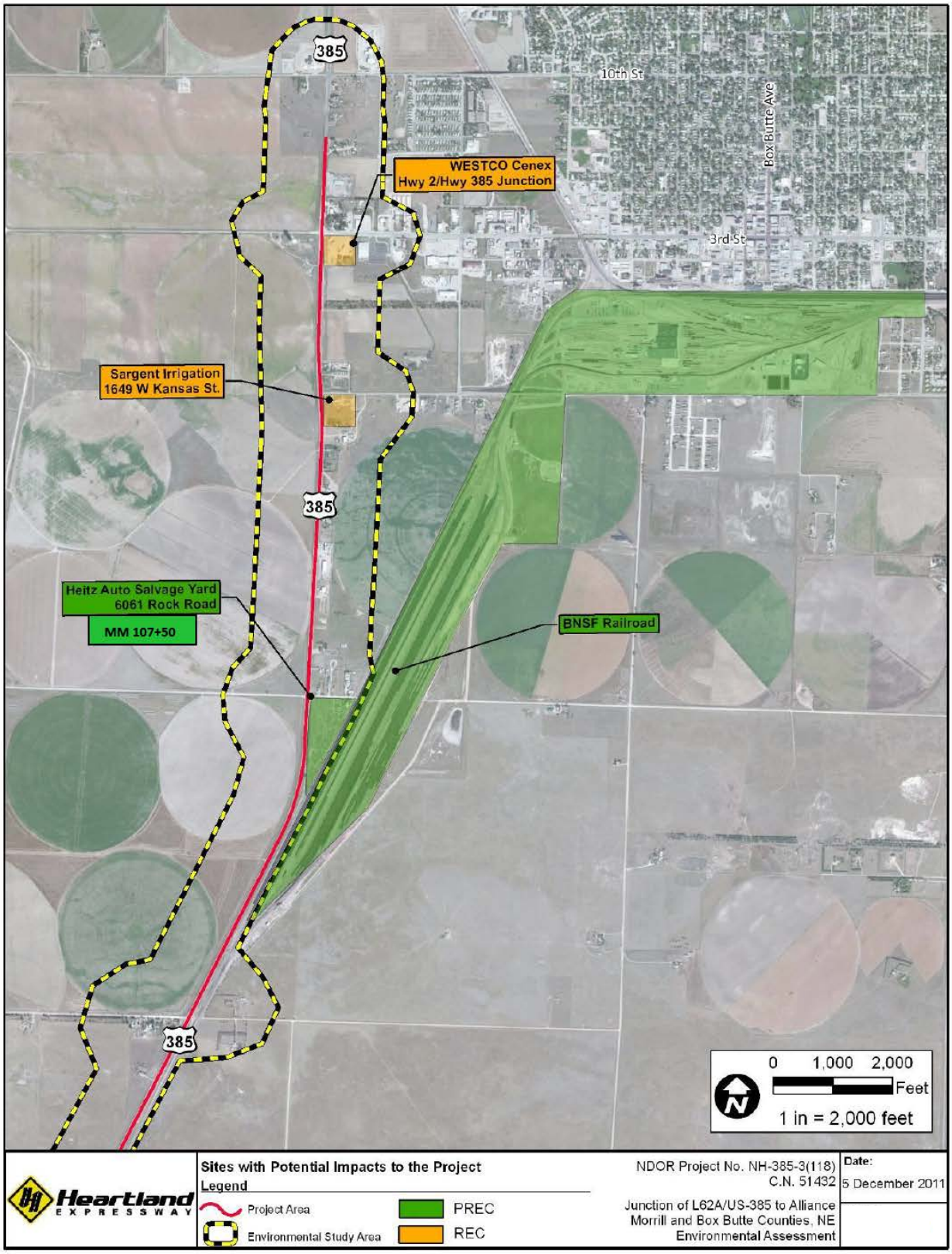


Figure 4.8 – Sites with Potential Impacts on the Project: Alliance



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 reconstructed 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, approximately133 acres mixed grass/shortgrass prairie, and approximately10 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 approximately12 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,.