

3.0 ENVIRONMENTAL REVIEW

3.1 INTRODUCTION

The following discussions clarify the Study Area boundaries, the scope of the project, the scope of this environmental review and summarizes how the National Environmental Policy Act of 1969 (NEPA) relates to the Corridor Development and Management Plan (CDMP) in terms of future NEPA documentation and process requirements. Section 3.2 presents key environmental resources that may be encountered along the Heartland Expressway Corridor, documents agency coordination, and identifies potential mitigation measures. Figures are provided that illustrate major environmental elements, resources, or complexes where helpful. Section 3.3 describes potential sub-corridors that could be considered to have independent utility, connect logical termini, and not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

3.1.1 STUDY AREA AND SCOPE

The Heartland Expressway Corridor extends from northwest Colorado to southern South Dakota and eastern Wyoming, through the western panhandle of Nebraska, passing through the cities of Kimball, Scottsbluff, Gering, Mitchell, Morrill, Alliance, and Chadron. Counties affected by the Heartland Expressway Corridor include Kimball, Banner, Scotts Bluff, Morrill, Box Butte, and Dawes. A broad range of environmental issues, both natural and socio-economic, are present along the Heartland Expressway Corridor. This environmental review included an evaluation of several previously completed reports and studies, existing resources, maps, data, and a limited 'windshield' review of the resources adjacent to the existing roadway, to identify potential impact issues, and guide Nebraska Department of Roads (NDOR) to the proper agencies and entities for coordination to minimize, avoid or mitigate, these potential impacts. The Study Area for this Environmental Review encompasses a corridor several miles wide along the existing roadway. This Study Area therefore, does not preclude the future evaluation of possible roadway re-alignments, by-passes, geometric upgrades, enhancements, or other improvements outside the existing roadway.

The Environmental Review identifies environmental resources within the Heartland Expressway Corridor. While specific environmental impacts from individual projects are unknown at this stage of planning, potential impacts have been identified where possible and are discussed in the following sections of this chapter. In general, any construction activity could have impacts to various environmental resources identified in this document; therefore, specific types of construction activities (i.e. grading, widening, bridge repair) were not discussed in relation to potential impacts. As more project-specific details arise during the Preliminary Engineering and NEPA phase, a more in-depth analysis of potential impacts to environmental resources will occur. This will include developing project specific purpose and need statements and alternatives analyses, as required by NEPA. The intent of the environmental review in this CDMP is not to fully address NEPA requirements, but rather to provide a resource for future NEPA compliance and documentation.

3.1.2 DETERMINING NEPA CLASS OF ACTION

The National Environmental Policy Act of 1969 (NEPA) established a national policy for protecting, restoring, and enhancing the human environment. Federal agency undertakings such as funding or permitting of projects must show compliance with NEPA. For transportation projects, NEPA requires FHWA and other federal agencies to consider potential impacts to the social and natural environment. In addition to evaluating the potential environmental effects, FHWA must take into account the transportation needs of the public in reaching a decision that is in the best overall public interest (23 USC 109(h)).

For projects with known potential for significant environmental impacts, agencies must prepare an Environmental Impact Statement (EIS). For projects that do not individually or cumulatively have a significant impact on the environment, agencies are categorically excluded (CE) from preparing an EIS. For all other projects, agencies must prepare an Environmental Assessment (EA) to determine if there will be significant impacts. If there are no significant impacts, or if the impacts can be mitigated such that they are no longer significant, the agency may issue a Finding of No Significant Impact (FONSI). However, if the EA determines that there are unavoidable significant impacts, the agency must prepare an EIS.

The purpose of this environmental review is **NOT** to serve as the NEPA documentation for future improvements to the entire Heartland Expressway Corridor. The purpose is to assist FHWA, NDOR, and local transportation agencies in identifying potential natural and socio-economic issues along rational sub-corridors, and provide information that can be incorporated into future NEPA documents.

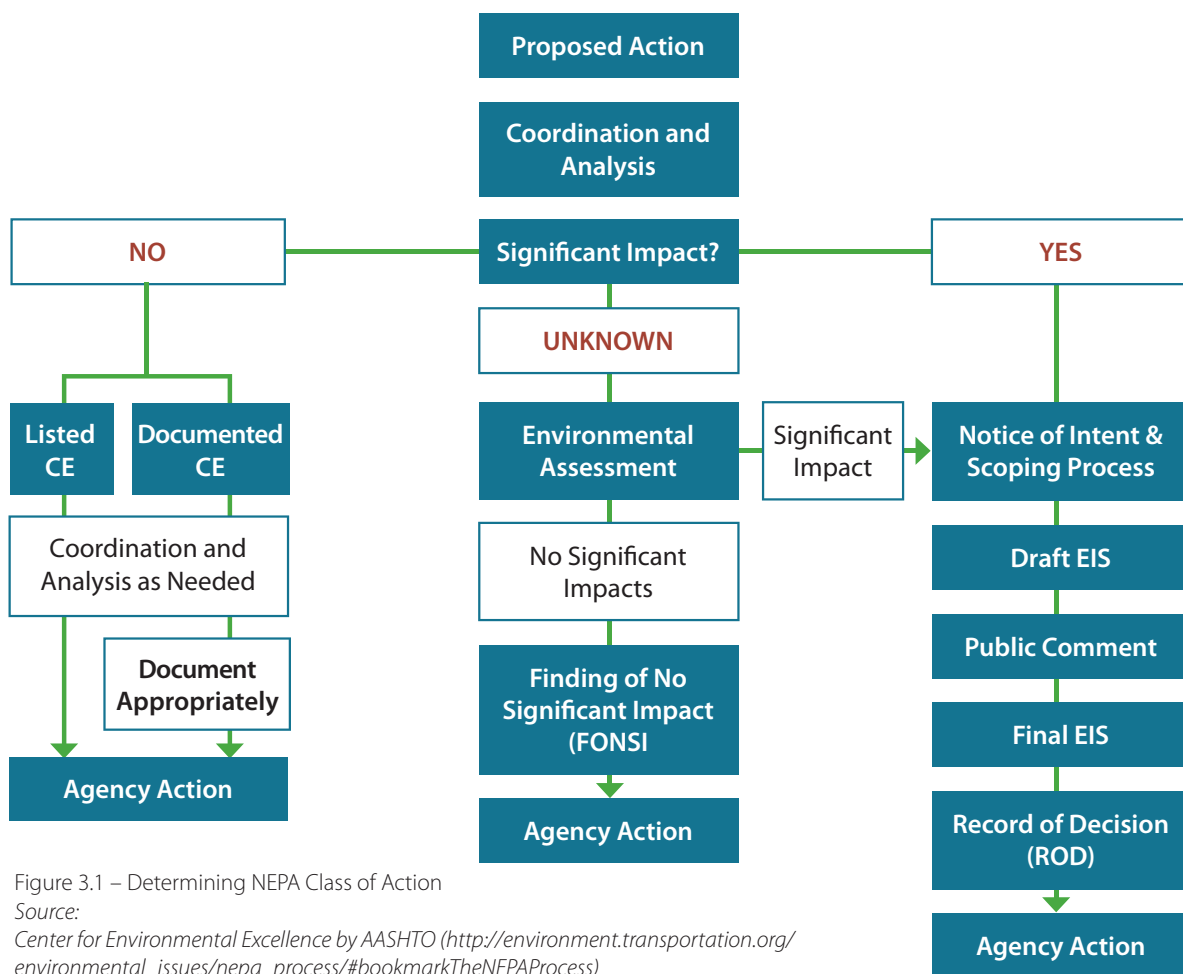


Figure 3.1 – Determining NEPA Class of Action

Source:

Center for Environmental Excellence by AASHTO (http://environment.transportation.org/environmental_issues/nepa_process/#bookmarkTheNEPAProcess)

3.1.3 NEPA PROCESS AND FUNDING OPTIONS

Many funding options exist for completion of the Heartland Expressway Corridor, including federal, state, local, and private funds. Use of federal funds, or improvements to federal facilities, will require compliance with NEPA as previously described. While NEPA is an umbrella that covers a multitude of environmental regulations, specific environmental compliance and permitting requirements (e.g. Section 404 of the Clean Water Act, Endangered Species Act) would apply whether or not compliance with NEPA is required.

The source of federal funds usually determines the Lead Agency for NEPA administration. For example, if federal highway trust funds are used, the FHWA will be the Lead Agency. Other federal agencies may become Cooperating Agencies depending on the nature of their involvement in the decision making process and the type and intensity of impacts to resources under their regulation. For instance, an improvement project involving a bridge over a major river may involve the U.S. Army Corps of Engineers (USACE) as a Cooperating Agency, while an improvement project within a National Forest or a National Park may involve the United States Forest Service (USFS) or the National Park Service (NPS). Depending on funding types of or limits of the project, these or other agencies may actually become the Lead Agency instead of FHWA.

The level of NEPA documentation is determined by the Lead Agency, and varies depending on the potential for significant impacts. The various levels of documentation are explained in greater detail below.

Environmental Impact Statement (EIS)

An EIS is required when an action is likely to have significant impacts on the environment. Such actions could include a new controlled access freeway, a roadway on a new alignment, a new interchange, by-passes, or similar actions. A Draft EIS is prepared, public comments are received, and then incorporated into the Final EIS. A Record of Decision (ROD) is then prepared for signature by the lead agency and sponsors. The ROD presents the basis for the decision to approve the project, summarizes any mitigation measures, and documents compliance with the myriad of laws under the NEPA umbrella.

Environmental Assessment (EA)

An EA is prepared when the significance of impacts are unknown. Examples of project requiring the preparation of an EA may include widening a two-lane highway to four lanes on the existing alignment, a new bridge over an existing railroad line, a grade separation project, or modifications to a major intersection or interchange. The EA determines if the project will have significant impacts, at which time the project is required to prepare an EIS; or if there are none, a Finding of No Significant Impact (FONSI) is prepared.

Categorical Exclusion (CE)

A CE is completed for projects that are not anticipated to have significant impacts, either individually or cumulatively. Projects that might be approved by a CE include landscaping, enhancements, trails, minor intersection modifications, pedestrian structures, maintenance, or traffic signal improvements. Some projects are so minor that they can be approved using a Programmatic CE (PCE), which groups entire categories of routine projects having no significant impacts. PCE's can be approved by NDOR, while CE's require NDOR and FHWA approval.

3.1.4 LOGICAL TERMINI

Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts, even though the environmental impact review frequently covers a broader geographic area than the strict limits of the transportation improvements. In the past, the most common termini have been major intersecting roadways or major traffic generators. However, there are also cases where the project improvement is not primarily related to traffic generation or roadway locations, and the choice of termini based on these factors may not be appropriate.

According to FHWA’s guidance paper, *The Development of Logical Project Termini*¹ (November 5, 1993) “choosing a corridor of sufficient length to look at all impacts need not preclude staged construction. Therefore, related improvements within a transportation facility should be evaluated as one project, rather than selecting termini based on what is available for short range improvements. Construction may still be ‘staged’ or programmed for shorter sections or discrete construction elements as funding permits.”

In developing a project concept which can be advanced through the stages of planning, environmental review, design, and construction, the project sponsor needs to consider a “whole” or integrated project. Projects should satisfy an identified need, such as safety, rehabilitation, economic development, or capacity improvements, and should be considered in the context of the local area, socioeconomics, topography, the future travel demand, and other infrastructure improvements in the area. Without framing a project in this way, proposed improvements may miss the mark by only peripherally satisfying the need or by causing unexpected side effects which require additional corrective action. The problem of “segmentation” also often occurs when a transportation need extends throughout an entire corridor, but environmental issues are inappropriately discussed for only a segment of the corridor.

FHWA regulations outline three general principles at 23 CFR 771.111(f) that are to be used to define the logical termini for a highway project:

“In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated in each environmental impact statement (EIS) or finding of no significant impact (FONSI) shall:

1. Connect logical termini, and be of sufficient length to address environmental matters on a broad scope;
2. Have independent utility or independent significance (i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made); and
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.”

These concepts of connecting logical points, sufficient length, independent utility, reasonable expenditure, and not precluding alternatives for future improvements are all imperative to identifying the eventual sub-corridors that may be considered under NEPA.

The logical termini for the Heartland Expressway Corridor were generally identified by highway junctions and population areas. See Section 3.3 Rational Sub-Corridors for the potential sub-corridors that could be considered to connect logical termini.

¹ <http://environment.fhwa.dot.gov/projdev/tdmtermini.asp>



3.2 ENVIRONMENTAL RESOURCES

The following section presents key environmental resources that may be encountered along the Heartland Expressway Corridor, documents agency coordination, and identifies potential mitigation measures. Figures are provided that illustrate major environmental elements, resources, or complexes where helpful.

3.2.1 SURFACE WATER AND GROUNDWATER RESOURCES

Surface water resources can include rivers, streams, wetlands, seeps, ponds, lakes, and other open water areas. Groundwater resources can include aquifers, recharge areas, wellhead protection areas, artesian wells, and municipal, residential and commercial/industrial wells. Surface water and groundwater resources in the Study Area are listed below.

Major Rivers and Streams

There are several major river crossings along the Heartland Expressway Corridor; the North Platte River near Scottsbluff, Lodgepole Creek near Kimball, the Niobrara River south of Chadron, and the White River north of Chadron. There are also numerous minor streams, creeks and watercourses that are crossed by the Heartland Expressway Corridor. Specific streams along various portions of the Heartland Expressway Corridor are described in greater detail in Section 3.3 “Rational Sub-Corridors.”

State Resource Waters

Within Nebraska, State Resource Waters are divided into Class A and Class B. Class A State Resource Waters are surface waters, whether or not they are designated in Nebraska’s Surface Water Quality Standards (Title 117), which constitute an outstanding State or National resource, such as waters within national or state parks, national forests or wildlife refuges, and waters of exceptional recreational or ecological significance. Waters which provide a unique habitat for federally designated endangered or threatened species and rivers designated under the Wild and Scenic Rivers Act are also included. Class B State Resource Waters include surface waters, whether or not they are designated in Title 117, which possess an existing quality which exceeds levels necessary to maintain recreational and/or aquatic life uses. There are currently no Class A or B State Resource Waters in the Study Area.

Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968 defines certain rivers that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, and provides for their preservation. The Niobrara River is designated as a National Scenic River; however the designation begins 130 miles east of the Study Area, near Valentine at US Highway 83, and extends approximately 100 miles further east, to Nebraska Highway 137 (NPS *Niobrara National Scenic River*). There are no Wild and Scenic Rivers in the Study Area.

Groundwater Management Areas

The “Nebraska Ground Water Management and Protection Act” provides a framework for establishment of Ground Water Management Plans by the state’s 23 Natural Resource Districts (NRD). These plans are aimed at the management of groundwater quality and quantity. Each NRD can set their own standards for managing these resources.

The Groundwater Management Area (GWMA) program focuses on assessing areas where groundwater problems from nonpoint source contaminants (such as agricultural chemicals) exist or are likely to exist. The Nebraska Department of Environmental Quality (NDEQ) and local NRDs carry out detailed field studies to collect groundwater data, assess the data, and determine whether a correlation exists between land use practices and any nonpoint contamination trends. The Department’s conclusions and recommendations are presented at public hearings during which public comments are also obtained. The Director makes a determination on whether or not to designate an area as a Groundwater Management Area. The staff works closely with the NRDs within whose boundary the area is located throughout the investigation, designation and implementation stages (NDEQ 2012a).

Within the Study Area, there are three GWMA’s, each corresponding to a separate NRD; the Upper Niobrara White, North Platte, and South Platte. Generally, the Upper Niobrara White GWMA covers Dawes and Box Butte Counties; the North Platte GWMA covers Morrill, Scotts Bluff, and Banner Counties; while the South Platte GWMA covers Kimball County.

Potential impacts to individual GWMA’s will vary depending on the location of a future project. For example, a project occurring exclusively in one GWMA would probably be unlikely to impact resources of another GWMA; whereas a project occurring in multiple GWMA’s would be have a higher potential to impact multiple GWMA’s. Therefore, coordination should occur between the NDOR and the appropriate NRD(s) to understand GWMA rules and regulations and to assess potential impacts.

Wellhead Protection Areas (WHPA)

Nebraska’s Wellhead Protection (WHP) Program is a voluntary program which assists communities and other public water suppliers in preventing contamination of their water supplies. The Nebraska Legislature passed LB 1161 in 1998 (Neb. Rev. Stat. §46-1501 – 46-1509), authorizing the Wellhead Protection Area Act. This Act sets up a process for public water supply systems to use if they choose to implement a local Wellhead Protection plan. NDEQ is the lead agency for WHP Plan approval.

The goal of Nebraska’s WHP Program is to protect the land and groundwater surrounding public drinking water supply wells from contamination. Since approximately 85% of Nebraskans receive their drinking water from groundwater, preventing groundwater contamination is vital (NDEQ 2012b). Within the Study Area, there are several WHPAs, including those for the Cities of Chadron, Alliance, Minatare, Scottsbluff and Kimball, and several private water supplies. Specific WHPAs along various portions of the Heartland Expressway Corridor are described in greater detail in Section 3.3 “Rational Sub-Corridors.”

Irrigation Wells and Canals

The Canal Act of 1890 authorized federally constructed irrigation facilities on private surfaces. Many of these water conveyance facilities (canals, ditches, and drains) are located on private lands where the Bureau of Reclamation (BOR) is not the underlying landowner. However, the BOR maintains the 1890 Canal Act right-of-way for these irrigation facilities. The operation and maintenance of water conveyance facilities within the study area has been transferred from the BOR to irrigation districts for use in delivery and distribution of water to irrigable lands of the North Platte Project. BOR water conveyance facilities in or near the Study Area are operated and maintained by the Gering Ft. Laramie, Northport, and Pathfinder Irrigation Districts (personal communication, Lyle Myler BOR, 13 March 2012).

BOR controls and manages a series of dams and reservoirs along the Platte river, starting with the Seminoe Reservoir in southeastern Wyoming, which conveys water to the Tri-State Canal along the Platte River in Nebraska, irrigating thousands of acres of cropland between Morrill and Bridgeport (University of Nebraska-Lincoln 2011). Potential impacts from roadway construction may include direct impacts, such as crossings, or indirect impacts, such as diverting irrigation water or modifying irrigation patterns.

NDOR will work with the BOR, underlying land owners, cities, and the aforementioned irrigation districts prior to future roadway projects in order to avoid or minimize impacts to the water conveyance facilities. Coordination will also occur to ensure that permits, permissions, and/or letters of consent are obtained prior to future projects.

Water Wells

Western Nebraska is covered with numerous water wells. These water wells can be used for multiple purposes including domestic, livestock, and irrigation. According to Nebraska Department of Natural Resources (NDNR) and Section 46-601.01, the well is the hole in the ground, not the equipment placed in the hole. Therefore, the person owning the land that contains a well is the owner of that well. Any person who constructs a water well is required by state law to register it and provide certain information collected during the excavation of the well. Additionally, law requires that only licensed water well contractors and landowners may dig a well, so it is their responsibility to register the water well. The registry of these wells is maintained by the NDNR and the database can be found online on the NDNR website (NDNR 2007).

NDOR will work with the NDNR to identify water wells that may be potentially impacted by future projects. As these wells are identified, NDOR will coordinate with water well landowners to avoid and minimize damages to water wells.

Impaired Waters - Clean Water Act Section 303(d)

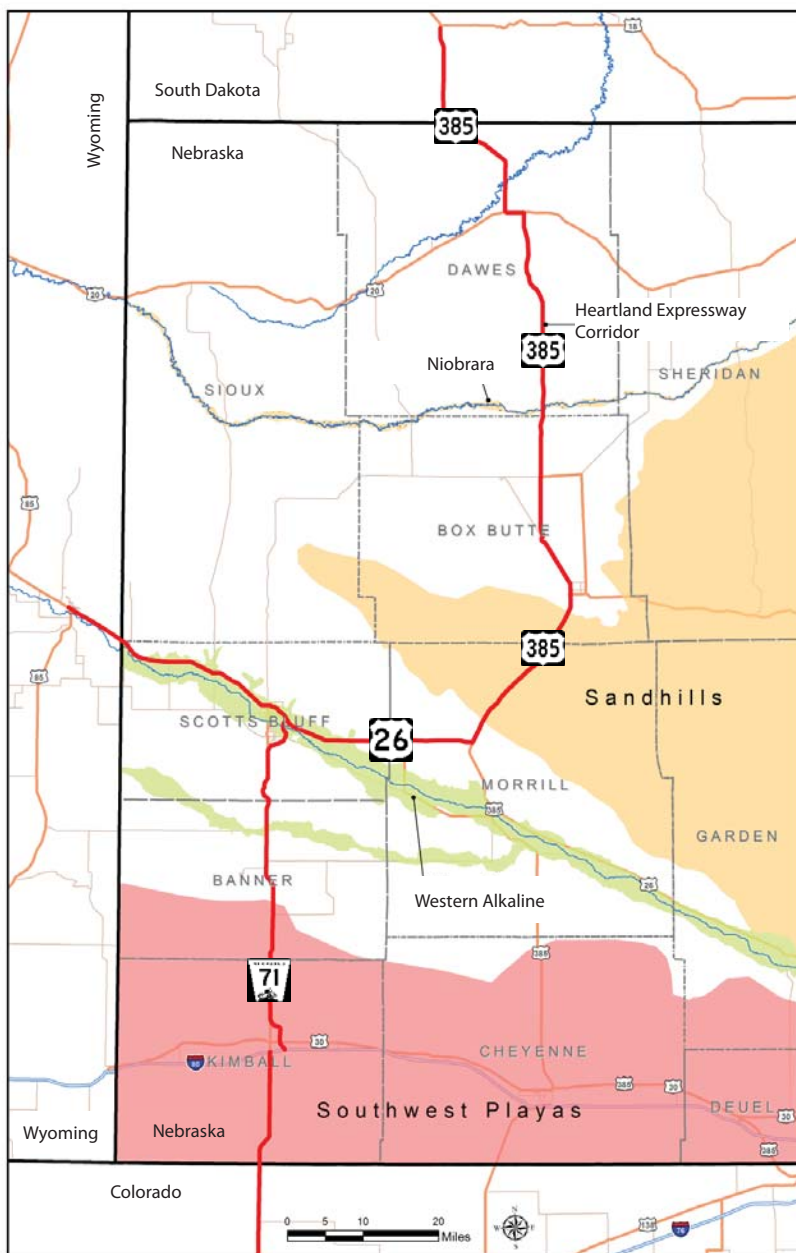
The Clean Water Act requires states to prepare a list of impaired surface waters every even numbered year. These waters do not support their assigned beneficial uses as listed in Title 117 – Nebraska Surface Water Quality Standards. From this list, referred to as the 303(d) List of Impaired Waters, states prepare Total Maximum Daily Loads (TMDLs) that include the pollution control goals and strategies necessary to improve the quality of these waters and remove the identified impairments. NDEQ is also required to provide a surface water quality report every two years, known as the Section 305(b) Water Quality Report, which describes the status and trends of existing water quality for all waters of the state and provides information as to the extent to which designated uses are supported (NDEQ 2012c).

Nebraska's 2012 Water Quality Integrated Report and 303(d) list, prepared by NDEQ, were approved by the U.S. Environmental Protection Agency (EPA) on April 16, 2012. The 2012 Integrated Report identifies five categories of waters, with Category 5 being the most impaired. There are several 2012 Category 5 waterways in the Study Area, including Chadron Creek, the Niobrara River, the North Platte River, Ninemile Creek, Winters Creek, Gering Drain and Tub Springs Drain.

As the 303(d) list is updated on a two-year cycle, these waters may not be listed as Category 5 waters in future reports, while other waters may be added. Therefore, it is recommended that during future NEPA reviews, the State of Nebraska's latest Water Quality Integrated Report and 303(d) list should be reviewed, and precautions taken to ensure compliance with any TMDLs for impaired waters.

3.2.2 WETLANDS

Wetlands, as defined by the Clean Water Act of 1979 (CWA) are “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” Wetlands are some of the most productive and dynamic habitats in the world, and provide many functions and values, including groundwater recharge, nutrient cycling, particulate matter removal, surface water discharge, maintenance of plant and animal communities, aesthetics, water filtration and purification, carbon sequestration, fish and wildlife habitat, and flood reduction, among many others. Care should be taken to avoid bisecting isolated wetlands if possible in order to avoid or minimize disturbance to reptiles, amphibians, and other wildlife that live in or utilize isolated wetlands.



Regional Wetland Complexes

Nebraska has many diverse and unique wetland complexes, including marshes, lakes, river, oxbows, wet meadows, forest swamps, and seeps. Several distinct complexes occur in the Study Area, including the Southwest Playas, Western Alkaline, and Sandhills wetlands.

Figure 3.2 - Heartland Expressway Wetland Complexes

Southwest Playas

These wetlands occupy small clay-lined depressions on nearly flat tablelands of loess soil. These freshwater wetlands receive water mostly from runoff and are small (mostly less than five acres), temporarily and seasonally flooded wetlands. Most have no natural outlet for water. In most years, these wetlands dry early enough in the growing season to be farmed (LaGrange 2005). In the Study Area, the Southwest Playas complex occurs in Kimball and southern Banner counties.

Sedimentation is a concern in the watersheds of the Southwest Playas, as eroded soil can quickly fill in a wetland. Careful consideration of water balance and erosion control is needed around these wetlands.

Western Alkaline

These wetlands occur on the floodplain of the North Platte River upstream of Lewellen, and along the upper reaches of Pumpkin Creek. They receive their water from a combination of overland runoff, flood overflows, and springs. The hydrology of these wetlands is complex and influenced by local irrigation runoff as well. The water sources are alkaline (i.e. salty), primarily from concentration by evaporation (LaGrange 2005). In the Study Area, the Western Alkaline complex occurs along Pumpkin Creek in northern Banner County, and along the North Platte River in Scotts Bluff County.

These wetlands have not been lost as much as other complexes due to lower development pressure. However, crop production has resulted in some losses. Irrigation and water diversions are also threats to their existence.

Sandhills

These wetlands are formed in depressions in sandhill areas where groundwater intercepts the surface of the land. Sandhills wetlands are mostly freshwater and include saturated wet meadows, shallow marshes, and open water lakes. This complex also includes fens, a very unique wetland type to Nebraska. These wetlands are characterized by slightly acidic water and peat soils, and harbor a number of rare plants including cotton-grass, buckbean, and marsh marigold. These wetlands are particularly attractive to shorebirds (LaGrange 2005). In the Study Area, the Sandhills complex occurs in northern Morrill and southern Box Butte counties.

Wetlands depicted on the United States Fish and Wildlife Service (USFWS) National Wetland Inventory Maps (NWI) were also reviewed.

Wetland impacts will be considered during the planning of future projects. During future NEPA reviews, individual projects in these areas should conduct a wetland delineation using USACE approved methodology, and obtain a Jurisdictional Determination from the USACE. If any individual project will impact wetlands, it will have to comply with all regulatory requirements, including obtaining a Section 404 Permit and Section 401 Water Quality Certification for impacts to Waters of the U.S. During future projects USACE will be invited as a cooperating agency through the NEPA/Section 404 merge process to facilitate reviews. In addition, Executive Order 11990 - *Protection of Wetlands* refers to all wetlands including Waters of the State, so if there are impacts to Waters of the State, coordination will be required with NDEQ to determine compliance with Title 117.

3.2.3 FLOODPLAINS

Executive Order 11988 requires federal agencies to, among other directives, reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands, and facilities; (2) providing Federally undertaken, financed or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related resources planning, regulating, and licensing activities.

The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP), and publishes and updates Flood Insurance Rate Maps (FIRMs) to illustrate those areas susceptible to flooding, and therefore requiring federal flood insurance. Current FIRM maps (where available) were reviewed to determine the location of regulated floodplains; Kimball, Banner, and Morrill County either do not participate in the NFIP or do not have any FIRM maps available in any format, Scotts Bluff and Box Butte County only have paper FIRM maps available. Dawes County has digital FIRM maps available. If individual projects result in floodplain impacts, local floodplain administrators will need to be consulted for permit approval.

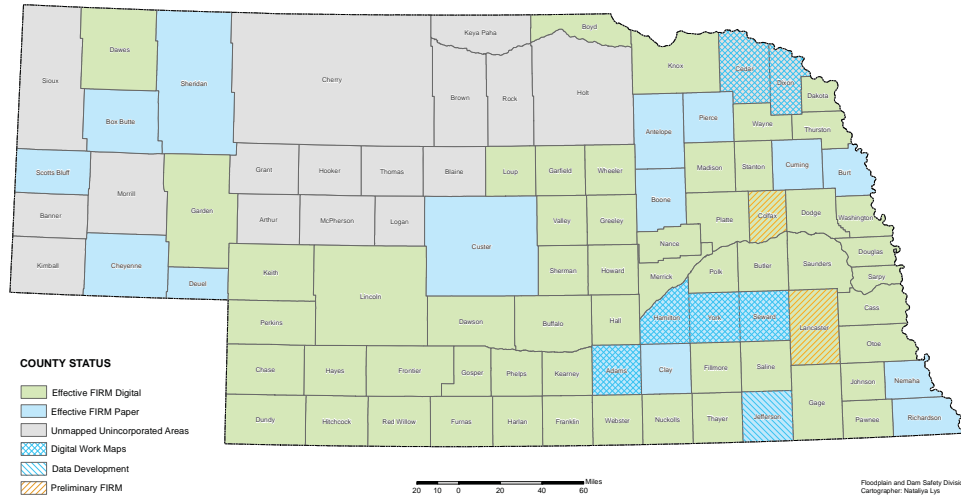


Figure 3.3 - Floodplain Mapping Status in Nebraska as of September 2012

3.2.4 WILDLIFE

Nebraska is host to a diverse array of wildlife. Wildlife refers to the numerous species of plants and animals that exist throughout nature. These plants and animals are an intrinsic part of nature, and also provide economic and cultural benefits. For example, insects act as pollinators for a countless number of plants, many of which are a food source for humans. Also, animals can provide for recreational activities such as hunting, fishing, or wildlife viewing (e.g. bird watching). Wildlife can also be used as a gauge by which the overall health of an ecosystem or environment is measured. Through the conservation and enhancement of wildlife, ecosystems and the natural environment are improved.

Threatened and Endangered Species

The Endangered Species Act (ESA), the Nebraska Nongame and Endangered Species Conservation Act, and other related laws were enacted to protect sensitive species from actions that could imperil their very existence. NEPA requires that FHWA coordinate with the USFWS and state agencies that protect threatened and endangered species.

Numerous federal and state protected species occur within the Study Area, including swift fox (*Vulpes velox*), river otter (*Lutra canadensis*), mountain plover (*Charadrius montanus*), blacknose shiner (*Notropisheterolepis*), northern redbelly dace (*Phoxinus eos*), finescale dace (*Phoxinus neogaeus*), blowout penstemon (*Penstemon haydenii*), Colorado butterfly plant (*Gauraneomexicana ssp. coloradensis*), black-footed ferret (*Mustela nigripes*) and grey wolf (*Canis lupis*)¹. (NGPC 2013a and USFWS 2013).

Brief descriptions of species, their habitat, potential impacts, and management practices are described within. Information on individual species was gathered from the USFWS and Nebraska Game and Parks Commission

¹The USFWS has proposed to remove the grey wolf from the list of threatened and endangered Species under the ESA. For more information see <http://www.fws.gov/home/wolfrecovery/> and <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=AOOD#status>

(NGPC), including the NGPCs Nebraska Natural Legacy Project (NNLP) and 2011 State Wildlife Action Plan (SWAP) (Schneider et al.), as well as the non-profit conservation organization, NatureServe, whose website (www.natureserve.org/explorer) is referenced by USFWS and NGPC. Specific occurrences, known habitats, or potential habitats for individual species are described in greater detail in Section 3.3 “Rational Sub-Corridors.”



Swift Fox (State: Endangered, Federal: Not listed): Habitat for the swift fox includes open prairie and arid plains, including agricultural areas. Their home range size ranges from a thousand to several thousand acres, and individuals may range over several hundred acres during a single night. They may also shift the location of their home range from one year to the next. Swift fox den in burrows, sometimes using those dug by other mammals (e.g. prairie dogs, badgers), usually in sandy soil on high ground in open prairies, or along fence rows in agricultural areas. Individuals may use several dens throughout the year. Swift fox are also known to live next to or in existing roadways near suitable habitat. Within the Study Area, the swift fox is listed as endangered by the NGPC in Kimball, Banner, Scotts Bluff, Morrill, Box Butte and Dawes Counties. The swift fox’s range is depicted on

the NGPC Threatened and Endangered Species Range Map (NGPC 2013b) below. According to the Nebraska Natural Heritage Database, there are records of swift fox within five miles of U.S. Highway 26 (US 26) in Scotts Bluff County, Nebraska Highway 71 (NE 71) in Kimball County, and the northern portion of U.S. Highway 385 (US 385) in Dawes County (personal communication, Melissa Marinovich, NDOR, 13 March 2012). Additionally a swift fox survey along L62A and US 385 from L62A to NE 2 in Alliance (conducted in 2013 by NDOR) reported no signs of swift fox or active dens; however suitable habitat was observed.

Potential impacts may include habitat degradation, home range separation, vehicle collisions, and others. Care should be taken to survey project areas and identify dens prior to construction, relocate dens (if necessary), minimize vehicle collisions by providing crossing opportunities or escape dens (i.e. artificial dens), and preserve known habitat if possible.

USFWS is currently conducting a research study entitled “Swift Fox Survey along the Heartland Expressway Corridor.” This study is being performed as a result of comments made at the resource agency meeting in 2012 (see Appendix E for more information), and is being funded with Federal Research Funds administered by NDOR (80% Federal, 20% State). After the study concludes, a strategy would be developed to address swift fox habitat connectivity. This strategy would then be carried forward into future projects created as a part of the Heartland Expressway Corridor.



River Otter (State: Threatened, Federal: Not Listed): Habitat for river otter includes streams, lakes, ponds, swamps, marshes, canals and other watercourses. Specific locations include hollow logs, root voids, dense overhanging vegetation, abandoned beaver lodges, thickets, or burrows of other animals. River otters feed on aquatic animals, fishes, frogs, crayfish, turtles, insects, and sometimes small birds and mammals. They are active during the winter, even in deep snow, and are generally active during the day. Their home range may be 20-30 miles long for a pair, and may hunt over 20 thousand acres during the year.

Within the Study Area, the river otter is listed as threatened by the NGPC in Scotts Bluff and Morrill Counties. The river otter’s range is depicted on the NGPC Threatened and Endangered Species Range Map below. Additionally, according to the Nebraska Natural Heritage Database, there are records of river otter within five miles of US 26 in Scotts Bluff County (personal communication, M. Marinovich, NDOR, 13 March 2012).

Potential impacts may include habitat degradation, home range separation and others. Care should be taken for projects involving watercourse impacts to identify burrows, allow for aquatic movement, and preserve known habitat if possible.



Mountain Plover (State: Threatened, Federal: De-listed May 2011):

Habitat for the mountain plover includes short- and mixed-grass prairie, prairie dog colonies, agricultural lands, and semi-desert habitats. Mountain plover have a geographically widespread breeding and wintering distribution. They breed in the western Great Plains and Rocky Mountain states from the Canadian border to northern Mexico. Most wintering occurs in California, southern Arizona, Texas, and Mexico. Mountain plover are adaptable to human activities and utilize a variety of habitat types (USFWS 2011a).

Within the Study Area, the mountain plover is listed as threatened by the NGPC in Kimball and Banner Counties. The mountain plover's range is depicted on the NGPC Threatened and Endangered Species

Range Map below. Additionally, according to the Nebraska Natural Heritage Database, there are records of mountain plover within five miles of NE 71 in Kimball County (personal communication, M. Marinovich, NDOR, 13 March 2012).

Potential for impacts are limited because of their ability to utilize a variety of habitats.



Blacknose Shiner (State: Endangered, Federal: Not listed):

Habitat for the blacknose shiner includes lakes and slow streams with weedy vegetation, primarily in cold, freshwater areas, mainly over sand. They eat mainly invertebrates, some plant material, as well as the bottom of aquatic beds. Within the Study Area, the blacknose shiner is listed as endangered by the NGPC in Box Butte and Dawes Counties. The blacknose shiner's range is depicted on the NGPC Threatened and Endangered Species Range Map that follows. Additionally, according to the Nebraska Natural Heritage Database, there are records of blacknose

shiner within five miles of the southern portion of US 385 in Dawes County (personal communication, M. Marinovich, NDOR, 13 March 2012).

Potential impacts include sedimentation, which causes turbidity, siltation of stream beds, and loss of aquatic vegetation, as well as habitat fragmentation due to dams, improperly placed culverts and similar impacts. Care should be taken to minimize land disturbance and establish vegetative cover quickly on construction projects in this species' range.



Northern Redbelly Dace (State: Threatened, Federal: Not listed):

Habitat for the northern redbelly dace includes boggy lakes, beaver ponds, pools of headwaters and creeks, often in tea colored water over fine detritus or silt. Northern redbelly dace are usually found near vegetation. Spawning occurs among mats of filamentous algae or aquatic plants. Redbelly dace eat mainly diatoms and filamentous algae, also zooplankton and aquatic insects. Within the Study Area, the northern redbelly dace is listed as threatened by the NGPC in Box Butte and Dawes Counties. The northern redbelly

dace's range is depicted on the NGPC Threatened and Endangered Species Range Map that follows.

Potential impacts include habitat degradation and fragmentation due to dams, improperly placed culverts and similar impacts.



Finscale Dace (State: Threatened, Federal: Not listed): Habitat for the finscale dace includes pools of boggy headwaters, creeks, small rivers, lakes and ponds, often common in beaver ponds, usually over silt and near vegetation. Spawning occurs under logs and debris. Finscale dace eat mainly insects and mollusks. Within the Study Area, the finscale dace is listed as threatened by the NGPC in Box Butte and Dawes Counties. The finscale dace's range is depicted on the NGPC Threatened and Endangered Species Range Map that follows.

Potential impacts include habitat degradation and fragmentation due to dams, improperly placed culverts and similar impacts.



Blowout Penstemon (State: Endangered, Federal: Endangered): Habitat for blowout penstemon is uniquely limited to the Nebraska Sandhills Prairie, in features called blowouts which are becoming rare due to stabilization efforts, fire control and settlement. Even though populations can be geographically isolated, wind driven seed dispersal results in genetic variation. Penstemon reproduces vegetatively, but pollination is a concern due to the distance between available habitat areas. Within the Study Area, the blowout penstemon is listed as endangered by the USFWS and NGPC in Morrill and Box Butte Counties. The blowout penstemon's range is depicted on the following NGPC Threatened and Endangered Species Range Map.

Potential impacts include direct impacts from construction, reduction of available habitat, and reduction of available pollinators. Care should be taken to identify potential habitat, and preserve it if possible.



Colorado Butterfly Plant (State: Endangered, Federal: Threatened): Habitat for Colorado butterfly plant is limited to southwestern Wyoming, northeastern Colorado, and the southwest portion of the Nebraska panhandle. Specifically, within Nebraska, the Colorado Butterfly Plant is a regional endemic historically found in western Kimball County. Individual colonies may be locally abundant or sparse, often depending on habitat conditions, and climate. They prefer periodically disturbed, sub-irrigated stream channels and shortgrass prairie. Haying, mowing and grazing are the main threats to this species (USFWS 2010a).

Within the Study Area, the Colorado butterfly plant is listed as threatened by the USFWS and endangered by the NGPC in Kimball County. The Colorado butterfly plant's range is depicted on the NGPC Threatened and Endangered Species Range Map below. Additionally, according to USFWS, the Colorado Butterfly Plant occurs along Lodgepole Creek (personal communication, John Cochnar 20 March 2012). Lodgepole Creek runs from Wyoming into Nebraska through Kimball, Cheyenne, and Deuel County until it eventually empties into the South Platte River just south of the Colorado/Nebraska border. Lodgepole Creek runs through the Study Area near Kimball, NE, and the NGPC Threatened and Endangered Species Range Map shows the range of the plant to be on Lodgepole Creek west of the City of Kimball. The USFWS lists portions of Lodgepole Creek in Wyoming as critical habitat for the plant; however the critical habitat designation did not include any portions of Nebraska (USFWS 2010a). According to the USFWS Species Profile, "the Colorado butterfly plant is likely extirpated in Nebraska; no plants have been found during surveys of historic known population in the last few years" (USFWS 2014a).

Due to the varied ranges listed by these references, it is difficult to discern whether the Colorado butterfly plant would be impacted by any future projects. Exact locations of the occurrence of the Colorado butterfly plant have not been given, so the occurrence of the plant in the Study Area is unknown. NDOR should coordinate with NGPC and USFWS to monitor for and identify locations of Colorado butterfly plant colonies within proposed project areas. Care should be taken in order to avoid and minimize potential impacts and disturbance to plant colonies, specifically for projects in Kimball County.



Black-Footed Ferret (State: Endangered, Federal: Endangered):

The historic range of the black-footed ferret included much of North America’s intermountain and prairie grasslands extending from Canada to Mexico; however the species has been extirpated virtually everywhere, with the exception of at reintroduction sites (USFWS 2010b) . Black-footed ferret reintroduction sites are located in Wyoming, South Dakota, Montana, Arizona, Utah, Colorado, Kansas, New Mexico, Canada and Mexico. There are currently no reintroduction sites in Nebraska. Black-footed ferrets live mainly in vacant prairie dog burrows, and over 90 percent of the black-footed ferret’s diet consists of prairie dogs (Black-footed Ferret Recovery Program 2011).

Within the Study Area, the black-footed ferret is listed as endangered by the USFWS in Kimball, Banner, Scotts Bluff, Morrill, Box Butte, and Dawes Counties. The NGPC Threatened and Endangered Species Range Map does not depict any estimated range for the black-footed ferret in Nebraska.

Potential for impacts are very limited as there are no known colonies or reintroduction sites in Nebraska. However, due to the black-footed ferret’s dependence on prairie dogs and their closely coinciding ranges, prairie dog colonies along the corridor should be identified and assessed for suitable black-footed ferret habitat, and for the potential presence of black-footed ferrets.

Grey Wolf (State: Not Listed, Federal: Threatened): The grey wolf has a wide range of habitats due to their adaptability. Habitats include temperate forests, mountains, tundra, tiaga, and grasslands. The territory size of a wolf pack can range from 25 to 1,500 square miles (USFWS 2014b).

Within the Study Area, the grey wolf is listed as threatened by the USFWS in Kimball, Banner, Scotts Bluff Morrill, Box Butte, and Dawes Counties. The NGPC Threatened and Endangered Species Range Map does not depict any estimated range for the grey wolf in Nebraska. The USFWS has proposed to remove the grey wolf from the list of threatened and endangered species under the ESA due to successful recovery efforts.

The listing status of the grey wolf should be identified prior to future project. Due to the large potential range of the grey wolf and the unknown occurrence of grey wolf in the Study Area, it is difficult to discern whether it would be impacted by future projects. NDOR should coordinate with NGPC and USFWS prior to future projects to identify any known occurrences of this species within the proposed project areas. Care should be taken to avoid and minimize potential impacts to the grey wolf.

Candidate Species: The USFWS has proposed two species, the Northern long-eared bat and rufa red knot (a shorebird that migrates through the state), for listing as threatened or endangered in Nebraska (USFWS 2013). Proposed species are those candidate species that were found to warrant listing as either threatened or endangered and were officially proposed as such in a Federal Register notice after the completion of a status review and consideration of other protective conservation measures (NOAA 2014). Within the Study Area, the Northern long-eared bat is listed as Proposed-Endangered by the USFWS in Box Butte and Dawes Counties, and rufa red knot is listed as Proposed-Threatened in Kimball, Scotts Bluff, Morrill, Box Butte, and Dawes Counties.

The listing status of these two species should be identified prior to future projects. NDOR should coordinate with NGPC and USFWS prior to future projects to identify any known occurrences of these species within the proposed project areas. Care should be taken to avoid and minimize potential impacts to these species.

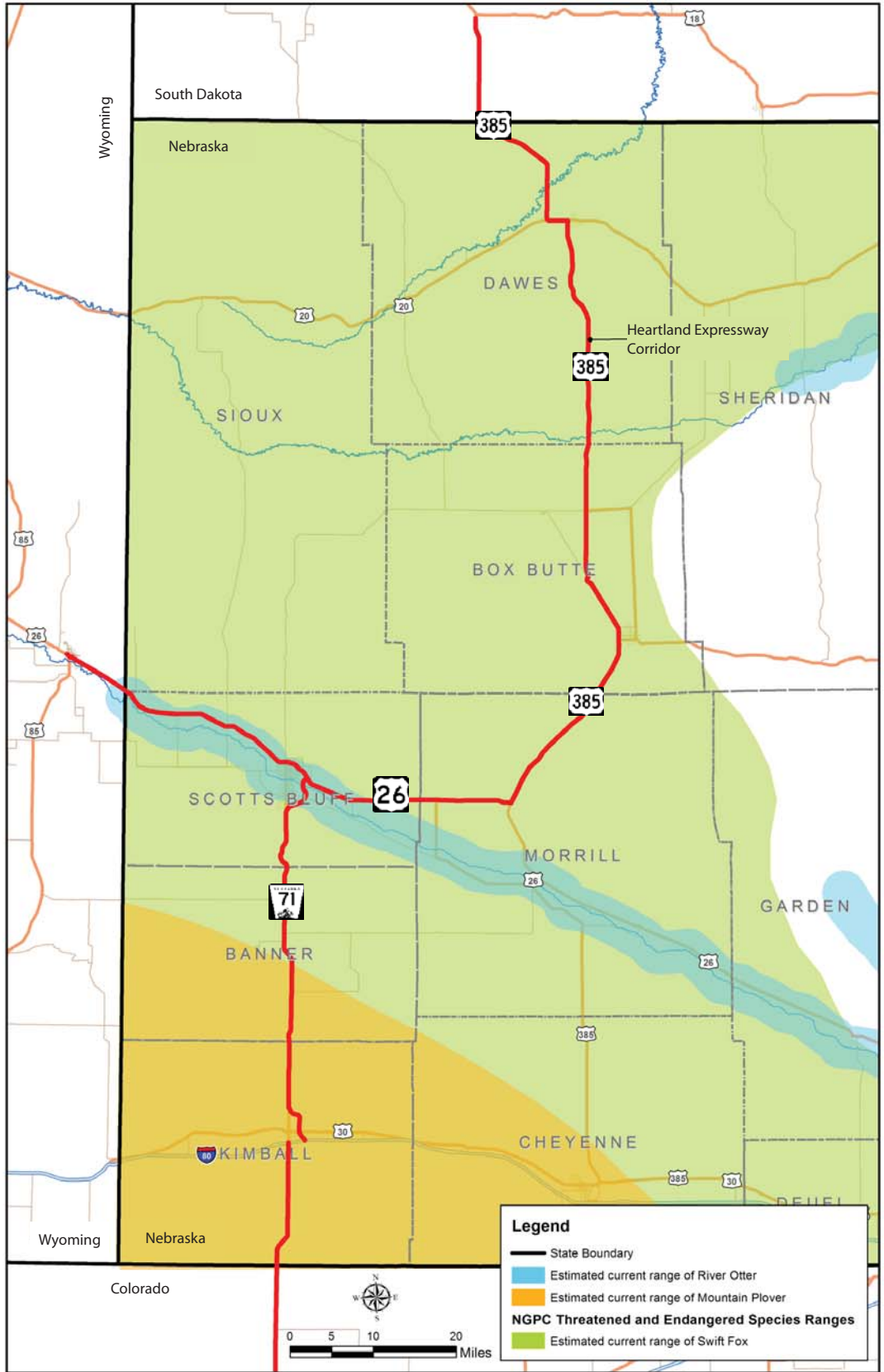


Figure 3.4 - Heartland Expressway Species Range Map 1

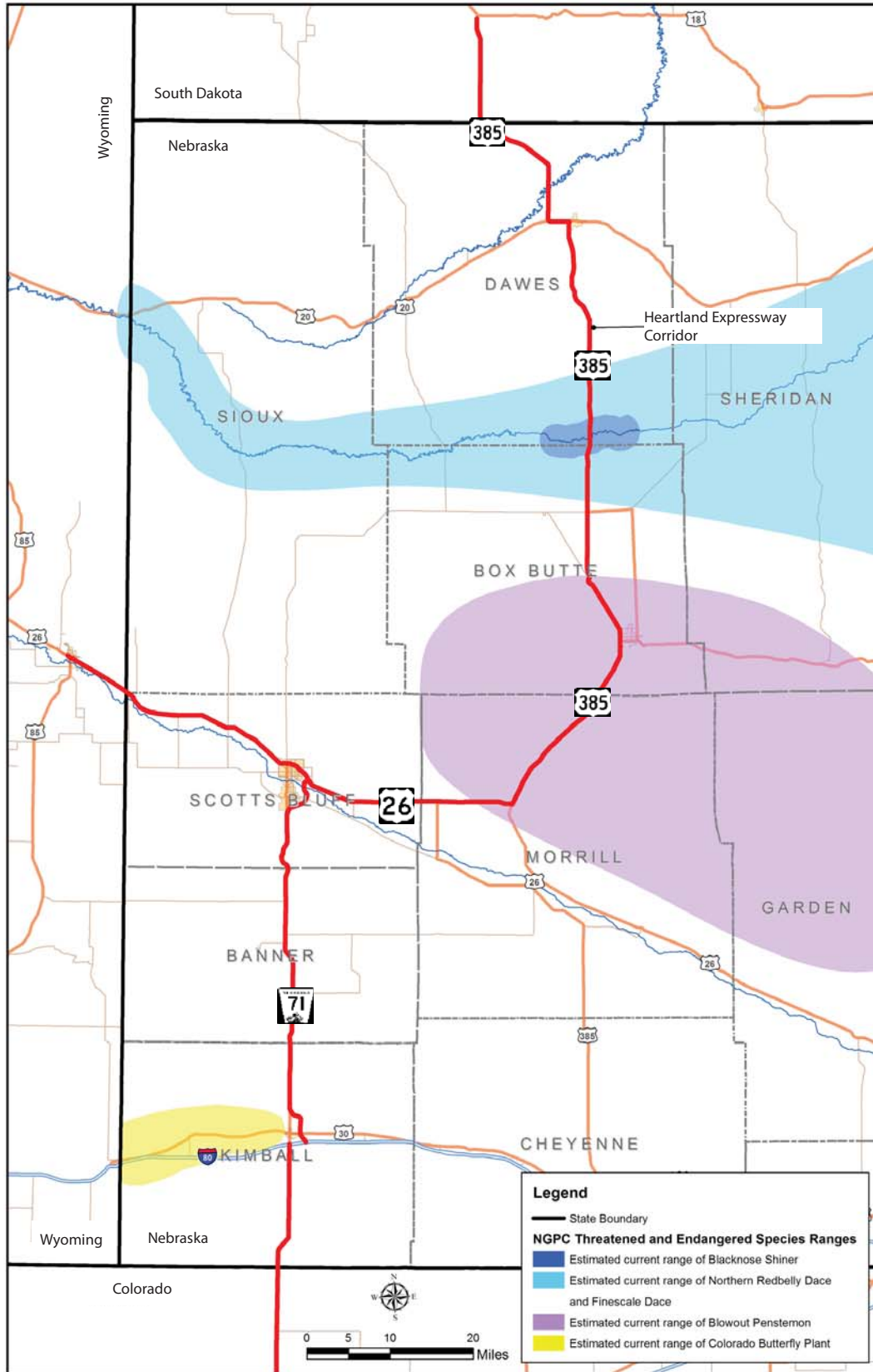


Figure 3.5 - Heartland Expressway Species Range Map 2

Other Sensitive Species

Nebraska is also home to many species of plants and animals that are not listed as threatened or endangered, but they are nonetheless important and require protection. The NNLP and the 2011 SWAP provides additional information on these resources and their “at-risk” status. For example, Bighorn sheep (*Ovis canadensis*) are listed as a Tier I At-Risk Species.



Bighorn Sheep

According to NGPC, bighorn sheep were extirpated from Nebraska in the early 1900s due to unregulated hunting, loss of habitat, and disease. In 1981, NGPC began reintroducing sheep at Fort Robinson State Park. In 2001, 2005, and 2007, three more reintroductions occurred, resulting in four herds of sheep in western Nebraska; two in the Pine Ridge area, and two in the Wildcat Hills area. Recently, in February 2012, NGPC reintroduced more sheep on a ranch west of Fort Robinson.

The recent reintroductions of bighorn sheep have resulted in young rams crossing US 385, but lambing activities east of US 385 are uncertain. Future bighorn sheep migration east of US 385 could be expected. The USFS Bighorn Sheep Land and Resources Management Plan (LRMP) set aside an approximately 2,400 acre bighorn sheep management area, which is located in the Nebraska National Forest approximately three miles south U.S. Highway 20 (US 20) and just east of US 385. NDOR will work with NGPC to identify current and planned reintroduction sites and avoid or minimize impacts from roadway projects on these properties.



Rainbow Trout

According to the USFWS, the rainbow trout is placed among the top five sport fishes in North America as a result of its popularity among anglers. Reduction of trout habitat due to impacts including streambank and upland soil erosion, loss of riparian vegetation, water diversion, logging and mining activities, and point and non-point source pollution have reduced the distribution and abundance of rainbow trout. In addition, construction of dams, road crossings, and other structures impede the ability of rainbow trout to migrate upstream and downstream, which is critical to successful completion of their life cycles (NRCS 2000).

Most of the cold-water trout streams in Nebraska are found in the western and northern parts of state. This includes Ninemile Creek, which is a perennial favorite among trout anglers (NGPC 2012a). Additionally, brown trout and rainbow trout are listed by the NDEQ as key species in Ninemile Creek. Recently, trout have been found reproducing in Ninemile Creek (personal communication, John Moeschel, USACE, 20 March 2012).

Ninemile Creek is located in Scotts Bluff County where it originates north of the Study Area and flows through it in a southerly direction at US 26. Public access to Ninemile Creek at Ninemile Wildlife Management Area (WMA) is approximately five miles north of the existing roadway, therefore the public access area will likely be unaffected by future roadway projects

NDOR will work with NGPC to avoid or minimize impacts to public access to Ninemile Creek. If necessary, detours should be considered in order to accommodate public access. Future projects should take appropriate measures avoid or minimize disturbance on trout habitat in Ninemile Creek. Also, because Ninemile Creek is being utilized by trout for reproduction, coordination should occur with USFWS, NGPC, and USACE to survey which sections of the creek trout are utilizing for reproduction. Consideration should be taken to avoid construction near the creek during trout spawning season.

3.2.5 HABITAT

A habitat is the natural environment of an organism. Habitats can be terrestrial or aquatic, or share features of both. According to the USFWS, habitat is a combination of environmental factors that provides food, water, cover and space that a living thing needs to survive and reproduce (USFWS 2011b). Habitat types found in Nebraska include rivers and streams, lakes and ponds, wetlands, riparian areas, grasslands/prairie, forests, and urban.

Riparian Habitat

As described previously, there are several river and stream crossings within the Study Area. Some of these watercourses have significant riparian corridors associated with them. These riparian corridors can be wooded or grassed, but they serve similar purposes: to provide a buffer along the watercourse, increase habitat biodiversity, provide shade, improve water quality and more (BOR and USFWS 2006). Specific riparian zones identified within the Study Area are described in greater detail in Section 3.3 “Rational Sub-Corridors”.

Biologically Unique Landscapes

Biologically Unique Landscapes (BULs) are those which have been declared priority landscapes for conservation by the NNLP. These landscapes consist of resources including natural aquatic and terrestrial communities and the species, specifically at-risk species that utilize these communities and landscapes. These BULs provide the greatest potential for the conservation of at-risk species and natural communities. Descriptions of BULs and Tier I species were gathered from the Nebraska Natural Legacy Project: State Wildlife Action Plan 2nd ed. (Schneider et al. 2011). The NNLP developed the SWAP to identify priorities for the conservation of Nebraska’s rarest species, natural habitats, and biological diversity. According to the SWAP, to identify locations of key habitats, information on known locations of natural communities and at-risk species was used to identify a series of BULs. BULs were identified as areas of the state/landscapes with the greatest potential for at-risk species and natural community conservation. If these landscapes are managed properly they would conserve the majority of Nebraska’s biological diversity. The highest at-risk species in the NNLP are the Tier I species, which are those that are globally or nationally at-risk. In addition to at-risk species, BULs also support a variety of common species. The BULs identified by the NNLP that lie within the Study Area include (listed from south to north) the Kimball Grasslands, South and North Wildcat Hills, North Platte River, Panhandle Prairies, Upper Niobrara River, Pine Ridge, and the Oglala Grasslands. The location of these BULs are depicted on Figure 3.6 on the following page.

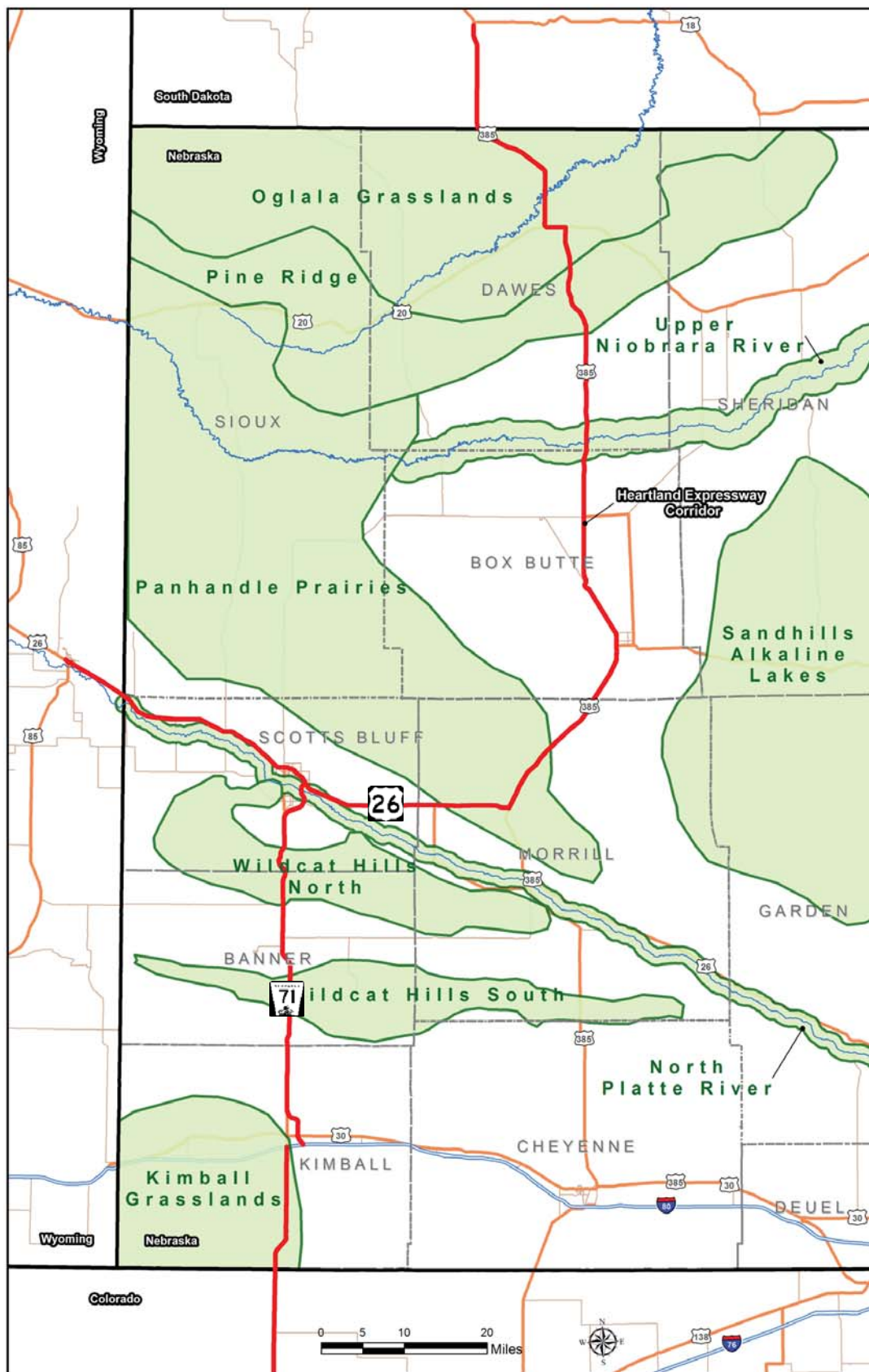


Figure 3.6 – Map of Nebraska’s Biologically Unique Landscapes (Schneider et al. 2011)

Kimball Grasslands

According to the NNLP, the Kimball Grasslands is a BUL consisting of level to rolling hills and breaks in southwest Kimball County. The uniqueness of the Kimball Grasslands comes from its ability to support Nebraska's only population of the federally and state listed Colorado butterfly plant, within the Lodgepole Creek Valley. In this BUL the mountain plover nests in heavily grazed native grasslands. The level plains of the northern portion of the BUL support Playa wetlands. Tier I at-risk species occurring in this BUL are the Colorado butterfly plant, matted prickly-phlox, Short's Milkvetch, swift fox, burrowing owl, ferruginous hawk, loggerhead shrike, chestnut-collared longspur, Mccown's longspur, mountain plover, plains topminnow, Cheyenne northern pocket gopher, regal fritillary, and Colorado Rita dotted-blue. Multiple natural aquatic and terrestrial communities are also present in this BUL.

Wildcat Hills

The Wildcat Hills BUL occurs on the south side of the North Platte River in Scotts Bluff, Banner, and Morrill counties. The Wildcat Hills is a rocky escarpment that rises several hundred feet. The north bluff of the escarpment is steep and deep canyons cut into the bluff. The canyons support stands of mountain-mahogany, eastern redcedar and Rocky Mountain juniper. The north-facing slopes of the escarpment support Ponderosa pine woodlands while the remainder of the Wildcat hills consists of mixed-grass prairie, rock outcrops, and scattered patches of sandsage prairie. The Wildcat Hills are home to one of three Rocky Mountain bighorn sheep populations in Nebraska. Several protected lands occur in the Wildcat Hills, including Scotts Bluff National Monument; Platte River Basin Environment's Bead Mountain, Carter Canyon, and Montz ranches; The Nature Conservancy's Murphy Ranch; and the NGPC's Cedar Canyon and Buffalo Creek Wildlife Management Areas and Wildcat Hills State Recreation Area. Tier I at-risk species occurring in this BUL are the dog-parsley, matted prickly-phlox, fringe-tailed myotis, Rocky Mountain bighorn sheep, swift fox, Bell's vireo, Brewer's sparrow, burrowing owl, long-billed curlew, pinyon jay, short-eared owl, regal fritillary, plains topminnow, and sagebrush lizard. Multiple natural aquatic and terrestrial communities are also present in this BUL.

North Platte River

According to the NNLP, the North Platte River BUL includes the river channel and associated wetlands and riparian woodlands within the valley from the upper end of Lake McConaughy to the Wyoming/Nebraska border. The headwater reach of Pumpkin Creek is also included in this BUL. The North Platte River valley has a braided channel which is lined with trees. Although much of the river floodplain is farmed, both alkaline and freshwater wetlands remain. These wetlands are important stop over points for migratory birds. Tier I at-risk species occurring in this BUL are the large-spike prairie-clover, Platte River dodder, northern river otter, Bell's vireo, burrowing owl, trumpeter swan, regal fritillary and plains topminnow. Multiple natural aquatic and terrestrial communities are also present in this BUL.

Panhandle Prairies

The Panhandle Prairie BUL occurs in the northern Panhandle from the Pine Ridge south to the North Platte River Valley. This BUL consists of plains and rolling hills which include the rough breaks and rocky outcrops associated with the Niobrara River in Central Sioux County and the North Platte River in Scotts Bluff and Morrill Counties. Isolated sand dunes also occur within the plains in west-central Sioux County. The Panhandle Prairies support extensive, intact prairie inhabited by swift fox, prairie dogs and grassland birds. The only protected lands in this BUL include (3 of the 4) the North Platte National Wildlife Refuge and a couple of small WMAs. Tier I at-risk species occurring in this BUL are the blowout penstemon, Gordon's wild buckwheat, large-spike prairie-clover, swift fox, Brewer's

sparrow, burrowing owl, ferruginous hawk, loggerhead shrike, long-billed curlew, chestnut-collared longspur, McCown's longspur, nine-spotted ladybird beetle, regal fritillary, finescale dace, northern redbelly dace, plains topminnow and sagebrush lizard. Multiple natural aquatic and terrestrial communities are also present in this BUL.

Upper Niobrara River

According to the NNLP, the Upper Niobrara BUL occupies the Niobrara River channel and a two-mile wide buffer on each side of the river, from eastern Cherry County westward to the Nebraska/Wyoming border. In the far west the Niobrara River is a narrow, cold-water stream with a gently sloping valley with few trees. As it progresses eastward, the river gains flows and the valley becomes entrenched with depths eventually reaching several hundred feet. Rocky outcrops are common along the valley bluffs with mixed-grass prairie occurring on most of the bluffs and ponderosa pine woodlands occupying portions of the bluffs. The Upper Niobrara River supports cold-water fish including the pearl dace, blacknose shiner and finescale dace. Nebraska's only known population of Ute ladies'-tresses orchid is supported in the wet meadows of the Niobrara River valley in western Sioux County. Several protected areas occur on the Upper Niobrara River, including the Agate Fossil Beds National Monument, The Nature Conservancy's Cherry Ranch, and Prairie Plains Resource Institute's Guadalcanal Memorial Prairie. Tier I at-risk species occurring in this BUL are the blowout penstemon, Gordon's wild buckwheat, large-spike prairie-clover, meadow lousewort, Ute ladies'-tresses, northern river otter, swift fox, Bell's vireo, Brewer's sparrow, burrowing owl, ferruginous hawk, long-billed curlew, trumpeter swan, regal fritillary, blacknose shiner, finescale dace, northern redbelly dace, and plains topminnow. Multiple natural aquatic and terrestrial communities are also present in this BUL.

Pine Ridge

The Pine Ridge BUL occurs in Sioux, Dawes, and Sheridan counties in northwest Nebraska. Pine Ridge is a rocky, pine-dominated escarpment that rises several hundred feet from the surrounding plains. Ponderosa pine woodlands and forests, pine woodlands, and mixed-grass prairie occupy the majority of the slopes and bottoms of Pine Ridge. Several streams also originate in the Pine Ridge including the White River, Hat Creek, and Soldier Creek. The floodplains of these stream valleys support deciduous woodlands and meadows. Pine Ridge also supports two of the state's three populations of Rocky Mountain Bighorn Sheep. This BUL contains several protected areas including the Nebraska National Forest (Pine Ridge District), Fort Robinson State Park and several WMAs. Tier I at-risk species occurring in this BUL are the dog-parsley, Rocky Mountain bighorn sheep, swift fox, fringe-tailed myotis, Pierre northernpocket Gopher, Bell's vireo, Brewer's sparrow, ferruginous Hawk, pinyon jay, mottled duskywing, regal fritillary, and tawny crescent. Multiple natural aquatic and terrestrial communities are also present in this BUL.

Oglala Grasslands

The Oglala Grasslands BUL occurs in the northwestern Panhandle north of the Pine Ridge. This BUL consists of plains and rolling hills, most of which are covered by mixed-grass prairie. Dispersed among the prairie are rock outcrops, badlands and small stream valleys. The Oglala Grasslands is one of the larger, intact grasslands remaining in Nebraska and contains extensive badlands. This BUL boasts several plant communities which occur nowhere else in the state. Tier I at-risk species occurring in this BUL are Barr's milkvetch, dog-parsley, Gordon's wild buckwheat, Rocky Mountain bulrush, Pierre northern pocket gopher, swift fox, Baird's sparrow, Bell's vireo, Brewer's sparrow, burrowing owl, chestnut-collared longspur, McCown's longspur, ferruginous hawk, loggerhead shrike, long-billed curlew and regal fritillary. Multiple natural aquatic and terrestrial communities are also present in this BUL.

Wildlife Corridors

Human activities have the potential to impact habitat. There are various human activities that can impact habitat, for example, damming rivers, logging, mining, clearing/grubbing, and various construction projects. Impacts to habitat can include destruction, degradation, and fragmentation. These types of impacts to habitat can be detrimental to wildlife and biodiversity. Fragmentation is a primary concern during roadway projects as they can divide wildlife habitats. Impacts to habitat can be reversed, avoided or minimized by conservation, habitat management and enhancement, and proper planning. By taking these steps, impacts to habitat and the wildlife that it harbors can be mitigated. One successful method for minimizing the impacts of habitat fragmentation has been the use of wildlife corridors. Wildlife corridors are areas or features which allow for the safe, efficient movement of wildlife from one area or habitat to another.

NDOR will coordinate with NGPC, Nebraska Land Trust (NLT), USFS, USFWS, and NPS to avoid or minimize impacts on wildlife and wildlife habitat from roadway projects. During the planning of future roadway projects it may be beneficial to consider and evaluate the development of wildlife corridors, crossways, or underpasses in areas of concentrated animal crossing to encourage safe crossing, help minimize roadway impacts to animals, and minimize the impacts of habitat fragmentation. These areas of concentrated animal crossing are currently unknown.

Habitat and wildlife studies/inventories could help to identify resources and assess the area for future roadway projects in order to determine, avoid, and/or minimize impacts to wildlife and wildlife habitat. As previously mentioned, the USFWS, in cooperation with NDOR, is currently performing a swift fox survey along the corridor. After the study concludes, a strategy would be developed to address swift fox habitat connectivity. This strategy would then be carried forward and applied to future projects created as a part of the Heartland Expressway Corridor. Additional wildlife and habitat connectivity studies could also be beneficial in locating concentrated wildlife crossings for other species and could be used in minimizing impacts of habitat fragmentation.

3.2.6 SECTION 106 AND TRIBAL CONSULTATION

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The revised regulations, *Protection of Historic Properties* (36 CFR Part 800), which became effective on January 11, 2001 outline the guidelines for federal agencies to comply with Section 106 of NHPA. The Archeological and Historic Preservation Act of 1960 (16 USC 469-470), and Executive Order 11593 - Protection and Enhancement of the Cultural Environment, issued in 1971, provide additional directives to Federal agencies on historic preservation.

Executive Order 13175 - *Consultation and Coordination with Indian Tribal Governments* was given in order to establish regular and meaningful consultation and collaboration between tribal officials and federal agencies in the development of policies that have tribal implications. FHWA complies with Executive Order 13175 by participating in tribal consultation regarding policy and regulatory matters. Additionally, Section 106 of the NHPA requires that all federal agencies, including the FHWA, perform tribal consultation during undertakings that may affect tribal land, or properties that are religiously or culturally significant to a tribe whether on or off tribal land (USGSA 2012, FHWA *Tribal Issues*).

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) provides for the protection of Native American graves, and for other purposes. NAGPRA protects the ownership or control of Native American cultural items which are excavated or discovered on Federal or tribal lands. NAGPRA requires

that any person inadvertently discovering Native American cultural items on Federal land notifies the proper agency and the appropriate Native American Tribe. This act also provides that the intentional excavation and removal of Native American Human remains shall not occur unless a Section 4 permit under the Archaeological Resources Protection Act (ARPA) is issued or consent of the appropriate Indian tribe or Native Hawaiian organization is given.

Potential cultural resources within the Study Area include Native American artifacts (e.g. Cheyenne, Lakota Sioux, Arapaho), early European settlements and military installations, emigration trails (e.g. Oregon, Mormon, California, Pony Express, the Rebecca Winters gravesite), and even 20th century features (e.g. historic buildings, bridges, or sites).

Historical Properties and Archeological Sites

The Nebraska State Historical Society (NSHS) provided preliminary lists of known cultural resources in the Study Area, including historic properties and archeological resources. Segments where construction has already occurred (e.g. Kimball Bypass, existing four-lane roadway) or an environmental review is pending (Junction L62A to Alliance) were not considered for these lists.

A draft list of historic properties in the Study Area was provided in March, 2012 which identified two sites listed on the National Register of Historic Places (NRHP) and nine sites that are eligible for listing on the NRHP. This list is incomplete and subject to change in the future as new structures are identified or other structures deemed not eligible. When a future project is submitted a full review of properties will need to take place to identify historic properties that may be eligible for listing on the NRHP.

A preliminary list of known archeological sites and possible trail crossings within the Study Area was also provided. NSHS has performed archeological resource surveys on 27 of the 105 miles of existing two-lane roadway in the Study Area. Twelve known archeological sites were identified, three of which have been determined not eligible for the NRHP and the remainder are unevaluated. The list also identified nine possible trail crossings in the Study Area. Exact locations of historic sites, archeological sites, and possible trail crossings are not shown on maps for the purpose of privacy and because of the unknown location of the road at this time.

In addition, historical markers, such as the Chadron Creek Trading Post marker and the Fort Pierre-Fort Laramie Trail marker, are located along the Heartland Expressway Corridor. Historical markers themselves are not necessarily historic, but rather commemorate significant events, people, places, sites, movements, and traditions in Nebraska history (NSHS 2011). Also, according to the NSHS, the preferred location for historical markers is on public property or on property owned by non-profit organizations operating for public purposes; therefore, historical markers are not always located at an actual historic site, but are often located along roads and at other easily accessible public areas. The NSHS is responsible for coordinating the erection of historical markers in Nebraska. A list of historical markers by county, along with their location, can be found at the following NSHS website: <http://www.nebraskahistory.org/publish/markers/texts/index.shtml>.

Traditional Cultural Properties and Native American Resources

According to the NPS, traditional cultural properties (TCPs) are those that are associated with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community. Examples of TCPs can range from neighborhoods or communities with significant cultural history to Native American ceremony or hunting grounds (Parker 1998). According to the NSHS, the Arapaho, Cheyenne, and Sioux (specifically the Oglala Lakota Sioux) tribes have documented history, oral traditions, and archeological sites throughout western Nebraska. Other tribes such as Apache, Arikara, Pawnee,

Kiowa, Wichita, Crow, Omaha, and Ponca may also have ancestral ties to the Study Area through the Central Plains and Dismal River Traditions. As Part of the study FHWA requested preliminary tribal consultation to identify potential sites in the Study Area. Section 3.5 “Agency Coordination” contains a detailed description of the results of the tribal coordination effort. Preliminary results yielded information from the Tribal Historical Preservation Officer (THPO) for the Pawnee Nation concerning five sites west of Chadron. These and other sites will be identified and considered prior to future projects through coordination with the tribes.

The scope of future projects will determine the scope of potential for archeological surveys and recovery efforts, as well as the potential for impacts to historical properties and TCPs. Therefore, NDOR will work with the NSHS to identify potential historical, archeological and traditional cultural resources that may be encountered on future projects along the Heartland Expressway Corridor in order to comply with Section 106. Based on Executive Order 13175 and Section 106, tribal coordination must occur for federally funded/government projects in order to consult those specific tribes who may have interests in project areas. During future projects consideration should be given to proper coordination with Tribal Governments.

3.2.7 PALEONTOLOGICAL RESOURCES

This section provides an overview of the paleontological resources in the Study Area, and background on laws and regulations affecting their discovery and treatment. Paleontology is the study of plant and animal life of past geologic time, including their evolutionary history, and their paleo-ecological interrelationships. This area of study does not include prehistoric human remains and their associated cultural artifacts (e.g. stone tools, pottery), which are the domain of archaeology. For the purposes of this document, the term “paleontological resources” includes not only fossils but associated physical items and data that contribute to the understanding of the fossils, such as associated datable rocks or organic matter and the physical characteristics of the fossils’ associated sedimentary matrix.

Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906, which requires protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federally-administered lands, including paleontological resources. Other federal requirements and guidelines for the protection of significant paleontological resources include NEPA, the Federal Land Policy and Management Act of 1976 (FLPMA), the National Preservation Act of 1966, and Title 43 CFR.

The FHWA considers protection of fossils on FHWA-funded projects a NEPA issue, but the extent of work required to protect the resource is based on the degree of protection afforded by each state’s laws, and whether or not a project is located on federal land. For instance, fossil collection on USFS administered lands is regulated under 36 CFR 261.9(i), which prohibits “[e]xcavating, damaging, or removing any vertebrate fossil or removing any paleontological resource for commercial purposes without a special use authorization.”

NDOR also has a fairly extensive and collaborative Salvage Program in place with the University of Nebraska Lincoln (UNL) and NSHS. This program seeks to protect and preserve when possible, and catalog and archive when appropriate, paleontological and historic remains if such remains would be disturbed by construction (NDOR n.d.). NDOR works with these agencies to research, investigate, and conduct field-reconnaissance to locate these sites several years prior to construction. Specifically, within the Study Area, NDOR has tested the Fort Mitchell site in Scotts Bluff County, and unearthed the fossils of at least 65 different animals along NE 71 through the Wildcat Hills area south of Gering.

The University of Nebraska State Museum has noted that a moderate to high paleontological potential exists in road cuts adjacent to the known paleontological sites throughout the Study Area. It is suggested that pedestrian surveys and minor excavations be conducted in areas adjacent to known sites prior to future construction. Known paleontological sites identified by the State Museum include eight sites within the right-of-way of existing two-lane highway between Colorado and South Dakota. Fifty-two (52) sites were observed when area was increased to five miles on each side of the right-of-way. One non-fossil related site also brought to attention by the State Museum is the type section³ of the Kimball Formation located approximately one-half mile south of Exit 20 on Interstate 80 (I-80).

As previously noted, the potential exists for additional paleontological resources to be identified and encountered on future projects along the Heartland Expressway Corridor. It is advised that FHWA, NDOR, Cooperating Agencies, UNL and SHPO evaluate these projects for paleontological resources, and continue to implement the Salvage Program to ensure that these resources are protected. To identify and evaluate these areas of paleontological potential it is recommended that surveys and minor excavations are conducted prior to construction of future projects.

3.2.8 AIR QUALITY

Motor vehicle emissions are one of the major sources of air pollution. Such emissions vary with traffic volumes, distances traveled, travel speeds, and vehicle types. This study focuses on the current air quality of the Study Area to determine the potential for air quality degradation with an increase in vehicles, due both to background socioeconomic growth and improvements that increase a facility's attractiveness to drivers.

The Federal Clean Air Act passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. Basic elements of the act include National Ambient Air Quality Standards (NAAQS) for major air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions. Under the federal Clean Air Act, the EPA regulates air quality.

Areas of the country where air pollution levels persistently exceed that NAAQS may be designated as "non-attainment" areas. All portions of the Study Area are currently in attainment, or unclassifiable with respect to all pollutants for which a NAAQS exists.

In 2004, NDOR, FHWA, and NDEQ signed an Air Quality Memorandum of Understanding (MOU) identifying the minimum threshold requirements for detailed air quality analysis on federal-aid roadway projects in the State of Nebraska. According to the MOU, a detailed analysis only needs to be conducted on federal-aid projects when the 20-year projected ADT exceeds 100,000 vehicles per day. While there will be emission from increased traffic, the impact is expected to be negligible. No mitigation is likely to be required, but NDOR and NDEQ will continue to monitor this resource.

Mobile Source Air Toxics

Mobile source air toxics (MSATs) are hazardous air pollutants emitted by motor vehicles and other moving sources (e.g. airplanes, boats, and trains) which are known or suspected to cause cancer or other serious health and environmental effects. In 2001, the EPA issued its first MSAT Rule, which identified 21 MSAT compounds as being hazardous air pollutants that required regulation. The EPA issued a second MSAT Rule in February 2007, which generally supported the first rule and provided additional recommendations of compounds having the greatest impact on health, and also identified several engine emission certification standards that must be implemented (FHWA 2014a). According to the EPA, the final MSAT standards will significantly

³According to the McGraw-Hill Dictionary of Scientific and Technical Terms, a type section is that sequence of strata identified as the original sequence for a location or area; the standard against which other stratigraphy of parts of the area are compared.

lower emissions of benzene and the other air toxics by lowering benzene content in gasoline, reducing exhaust emissions from passenger vehicles operated at cold temperatures (under 75 degrees), and reducing emissions that evaporate from and permeate through portable fuel containers. Nationally, a substantial overall reduction in emissions is projected due to stricter engine and fuel emissions regulations issued by the EPA (EPA 2007).

FHWA released their *Interim Guidance on Mobile Source Air Toxic Analysis in NEPA*⁴ in September 2009, and updated this guidance in December 2012. This guidance uses a tiered approach with three categories for analyzing MSATs in NEPA documents, depending on specific circumstances and the potential for MSAT effects:

1. No analysis for projects with no potential for meaningful MSAT effects;
2. Qualitative analysis for projects with low potential MSAT effects; or
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

MSAT effects have not historically been a major issue in the State of Nebraska. The potential for meaningful MSAT increases or meaningful MSAT effects as a result of future projects along the Heartland Expressway Corridor are unknown at this time, and should be examined in more detail for individual projects. If an MSAT analysis indicates meaningful differences in levels of MSAT emissions, mitigation options should be identified and considered. FHWA's *Interim Guidance on Mobile Source Air Toxic Analysis in NEPA* includes information for prototype language and examples for the different categories of MSAT analysis, as well as MSAT mitigation strategies. This resource (or any updated guidance) should be consulted to assist in determining the level of MSAT analysis required for future projects along the Heartland Expressway Corridor.

3.2.9 NOISE

Noise is essentially “unwanted sound,” and, by this definition, the perception of noise is subjective. Several factors affect the actual level and quality of sound as perceived by the human ear, but the focus of this inventory is to recognize that traffic noise has an effect on the quality of life near transportation facilities. This topic is covered because increased traffic using the Heartland Expressway Corridor could cause a corresponding increase in noise, and because federal law governs abatement of highway traffic noise under the Federal-Aid Highway Act of 1972, which requires FHWA to develop standards for mitigating highway traffic noise.

The FHWA regulations for mitigation of such noise in the planning and design of federally aided highways are contained in Title 23 CFR Part 772. The regulations require the following during the planning and design of a highway project: 1) identification of traffic noise impacts and examination of potential mitigation measures; 2) incorporation of reasonable and feasible noise mitigation measures into the highway project; and 3) coordination with local officials to provide helpful information on compatible land use planning and control. The regulations contain noise abatement criteria which represent the upper limit of acceptable highway traffic noise for different types of land uses and human activities. The regulations do not require that the abatement criteria be met in every instance. Rather, they require that every reasonable and feasible effort be made to provide noise mitigation when the thresholds are approached or exceeded.

NDOR is responsible for providing regulatory guidance and implementation of traffic noise analysis and abatement (e.g., noise barriers and other measures) in accordance with federal regulations. The State's “Noise Analysis and Abatement Policy” (effective date 13 July 2011), describes the requirements for conducting a noise analysis.

⁴http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm

In the Study Area, noise levels related to the FHWA Noise Abatement Criteria will need to be identified, and measures may need to be considered to reduce potential noise impacts. The traffic noise assessment findings will need to be included in the individual environmental documentation processes for future projects along the Heartland Expressway Corridor.

3.2.10 LOW-INCOME AND MINORITY POPULATIONS (ENVIRONMENTAL JUSTICE)

Executive Order 12898 (signed in 1994) directed Federal agencies to make Environmental Justice a part of its mission by identifying and addressing their programs, policies, and actions' effect on "minority populations and low-income populations." The Department of Transportation (DOT) has developed Environmental Justice initiatives to accomplish this goal by involving potentially affected populations in the decision-making process, and by developing projects that fit within communities, without sacrificing safety or mobility.

There are three main principles in Environmental Justice; (1) to avoid, minimize or mitigate disproportionately high adverse human health and environmental effects, including social and economic effects, on minority and low-income populations; (2) to ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and (3) to prevent the denial or reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Minority and low-income populations are defined by Title VI of the Civil Rights Act, which prohibits discrimination on the basis of race, color, or national origin. The FHWA issued Order 6640.23A in 2012, which established policies and procedures for the FHWA to use in complying with Executive Order 12898. Executive Order 12898 therefore compels the DOT and FHWA to address Environmental Justice issues affecting communities comprised of persons of the following groups:

- **Black:** any person with origins in any black racial groups of Africa
- **Hispanic or Latino:** any person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- **Asian American:** any person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian Subcontinent.
- **American Indian or Alaskan Native:** any 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.
- **Native Hawaiian or Other Pacific Islander:** any persons having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
- **Low-Income:** any persons whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines (FHWA 2012b).

Exact locations of minority and low-income populations that could be impacted will need to be determined at the project level with screening studies to determine the location of potentially affected populations, followed by a determination of whether the possibility of disproportionate impacts exists. If any disproportionate impacts are found, it will be necessary to determine the type of mitigation that is necessary and reasonable for each section.

Poverty (ACS 2012, Table DP03) and racial data (Census 2010, Table P5) are provided in Table 3.1.

Table 3.1 – Poverty and Racial Data from the 2010 Census

Area	Income or Poverty Level					Race							
	Median household income	Median family income	Per capita income	Families below poverty level	Individuals below poverty level	White	Black or African American	American Indian or Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Other Race	Two or more races	Hispanic or Latino (of any race)
U.S.	\$53,046	\$64,585	\$28,051	10.9%	14.9%	72.4%	12.6%	0.9%	4.8%	0.2%	6.2%	2.9%	16.3%
State of Nebraska	\$51,381	\$64,820	\$26,523	8.4%	12.4%	86.1%	4.5%	1.0%	1.8%	0.1%	4.3%	2.2%	9.2%
Banner County	\$32,292	\$50,208	\$19,877	12.8%	18.0%	95.7%	0.0%	0.4%	0.0%	0.0%	3.2%	0.7%	3.8%
Box Butte County	\$44,025	\$53,786	\$24,389	16.3%	19.9%	89.8%	0.5%	3.6%	0.3%	0.0%	3.4%	2.5%	10.2%
Dawes County	\$36,974	\$57,728	\$20,345	14.5%	24.0%	89.4%	1.5%	3.9%	1.0%	0.5%	1.1%	2.5%	3.3%
Kimball County	\$43,542	\$54,566	\$25,304	9.1%	10.8%	94.2%	0.2%	1.3%	0.7%	0.1%	1.8%	1.8%	6.4%
Morrill County	\$42,025	\$49,500	\$21,881	11.2%	14.7%	91.2%	0.2%	1.1%	0.4%	0.0%	5.6%	1.5%	13.6%
Scotts Bluff County	\$43,113	\$53,264	\$22,345	11.1%	15.1%	87.4%	0.6%	2.1%	0.6%	0.1%	7.4%	2.0%	21.1%
City of Alliance	\$43,118	\$52,742	\$22,711	19.1%	23.4%	87.5%	0.5%	4.6%	0.3%	0.0%	4.2%	2.9%	12.3%
City of Chadron	\$30,573	\$50,608	\$18,293	19.1%	30.7%	87.8%	1.6%	5.1%	0.8%	0.6%	1.1%	2.9%	3.6%
City of Gering	\$50,850	\$57,571	\$25,093	6.7%	6.8%	89.6%	0.6%	1.5%	0.4%	0.1%	5.5%	2.4%	17.2%
City of Kimball	\$41,745	\$52,774	\$23,547	9.4%	10.7%	93.8%	0.2%	1.5%	0.4%	0.1%	1.6%	2.5%	7.1%
City of Scottsbluff	\$35,116	\$42,250	\$19,886	15.4%	21.7%	83.0%	0.8%	3.4%	0.8%	0.0%	9.8%	2.2%	29.1%

If any disproportionate impacts are found, it will be necessary to determine the type of impact, consider how the magnitude and severity of the impact can be prevented or reduced, and the type of mitigation that is necessary and reasonable for each section. For each alternative that will result in environmental justice concerns, mitigation measures should be carefully examined with the affected population. Mitigation measures should focus on true mitigation of the impact, rather than merely shifting the impact from one population to another. The approach is first to avoid impacts, if possible, then to minimize impacts, and finally to mitigate unavoidable impacts. Enhancements may also be considered for mitigation. Examples of enhancements include the addition of pedestrian and bicycle facilities; safety and education activities; beautification projects such as lighting, landscaping, and public art; historic preservation; improved access to neighborhood parks and recreation facilities; and conversion projects such as rails to trails.

NDOR will evaluate minority and low-income populations for individual projects and address potential impacts and mitigation during project-level NEPA reviews. Public outreach efforts pertaining to environmental justice issues should occur on a project-level basis and be tailored to the circumstances of each project.

3.2.11 POTENTIAL DISPLACEMENTS AND RELOCATIONS

Residential displacement results from the removal of occupied housing, and through the loss of available replacement housing. Displacement can occur by demolition of housing units, conversion of housing units from ownership to rental (or vice versa). Displacement can also occur by the process of neighborhood gentrification, in which a neighborhood or housing area changes in such a way that influences home prices so greatly that individuals are forced to move. Generally, when a large number of residences are lost, and the existing housing availability is low, there will be displacements.

Adverse human health effects resulting from displacements may include loss of family unity, overcrowding, homelessness, acceptance of inadequate or substandard housing, physiological and psychological stress, erosion of social cohesion, segregation, increased demand for social services, increased demand on transportation systems, and many more.

Acquisitions and relocations must be conducted in accordance 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.).

The Uniform Act provides protections and benefits for people affected by federal and federally assisted projects. Its purpose is to provide for uniform and equitable treatment of all persons relocated from their homes, businesses, and farms, without discrimination on any basis. The Uniform Act ensures fair compensation of property owners for their residential structures. It requires that the sponsor of a project provide financial and technical relocation assistance for relocated residents. The Uniform Act also contains allowances for renters. A one-time rental assistance payment is available for the tenant to find a decent, sanitary, safe dwelling for a period of 42 months.

While there are several populated places along the Heartland Expressway Corridor, the projects envisioned at this time would not result in the taking of large numbers of residences. However, NDOR will evaluate the potential for displacements and relocations during project-level NEPA reviews. Additionally, any property acquisition along the Heartland Expressway Corridor will occur in accordance with the Uniform Act.

3.2.12 PUBLIC LANDS AND COMMUNITY FACILITIES INCLUDING POTENTIAL SECTION 4(F)/6(F) PROPERTIES

There are several public lands and community facilities along the Heartland Expressway Corridor, including the Pine Ridge unit of the Nebraska National Forest, Chadron State Park, Chadron Creek Ranch Wildlife Management Area, North Platte National Wildlife Refuge, Wildcat Hills State Recreation Area, Scotts Bluff National Monument, numerous golf courses, local parks, and public and private campgrounds, as well as potential historic sites.

Nebraska National Forest

The Nebraska National Forest Pine Ridge District is located in Dawes County south of Chadron, NE on US 385. The Nebraska National Forest provides for camping and recreation in a natural setting. The 6,600-acre Pine Ridge National Recreation Area located in the Nebraska National Forest provides primitive and semi-primitive recreation in a natural environment. The Pine Ridge trail system provides approximately 80 miles of marked trails that accommodate hikers, horseback riders, and mountain bikers. The Red Cloud Campground site is generally located along the west side of US 385 and features 13 camping sites with picnic tables and fire grates, and a vault toilet. Nebraska National Forest also allows for back country or primitive camping anywhere on the National Forest (USFS *Nebraska National Forest and Grasslands*). NDOR will work with the USFS during future projects to avoid or minimize impacts to Nebraska National Forest's features, facilities, and operations.

Chadron State Park

Situated in the heart of the Nebraska National Forest Pine Ridge District, Chadron State Park is located in Dawes County nine miles south of Chadron on US 385. The park consists of more than 1,000 acres in the Pine Ridge and is dominated by ponderosa pines. Altitudes in some places of the park approach 5,000 feet. Chadron State Park hosts 22 cabins, a group camp/conference facility, and 70 modern campground pads. The park also offers other amenities such as a swimming pool, tennis and sand volleyball courts, a lagoon, concessions, shelters, showers, and modern restrooms. Chadron State Park provides for many outdoor recreational activities including fishing, nature viewing, hiking, and others (NGPC 2014). Hiking and bike trails are located throughout the park and adjoining Forest Service lands. The main entrance for Chadron State Park is accessed directly from US 385. Chadron State Park personnel have indicated heavy usage of this entrance during peak times and the potential for backed-up traffic to reach US 385. The park offers many visual resources and aesthetics, which are discussed further in Section 3.2.15 “Visual Resources and Aesthetics.”

NDOR will work with NGPC to avoid or minimize impacts to State Park features, facilities, and operations during future projects.

Chadron Creek Ranch Wildlife Management Area

Chadron Creek Ranch Wildlife Management Area (WMA) is located in Dawes County, roughly ten miles south of Chadron and two miles south of Chadron State Park on US 385. This WMA consists of 2,449 acres and is primarily managed for wildlife and public use. Recreational activities available at Chadron Creek Ranch WMA include hunting, hiking, horseback riding, mountain biking, bird watching and photography. Adjacent to this WMA is National Forest property which allows for a larger tract of land available for public recreation. Chadron Creek Ranch WMA was purchased in 2003 with the assistance of Platte River Basin Environments, NGPC, and the Nebraska Environmental Trust. This WMA is now under the management and control of the NGPC (Platte River Basin Environments 2012). NDOR will work with the NGPC during future projects to avoid or minimize impacts to Chadron Creek Ranch WMA features and operations.

North Platte National Wildlife Refuge

Stateline Island is one of four units that make up the North Platte National Wildlife Refuge (NWR) and is the only unit that occurs within the Study Area. Stateline Island sits approximately one-half mile south of Henry, NE directly east of the Nebraska/Wyoming border and is in close proximity to US 26. Stateline Island is a 136-acre diversion project on the North Platte River and is one of four Refuge units that make up the North Platte NWR. The North Platte NWR is managed by the USFWS (USFWS n.d.). NDOR will work with the USFWS during future projects to avoid or minimize impacts to Stateline Island and its features and operations.

Wildcat Hills State Recreation Area, Nature Center and Big Game Reserve

The Wildcat Hills State Recreation Area (SRA), Nature Center and big game reserve is located in Scotts Bluff County ten miles south of Gering, NE. The area consists of 761 acres of rugged rock buttes and pine-covered canyons. In some areas of the Wildcat Hills elevations approach 5,000 feet. Facilities in the recreation area include a Nature Center, picnic tables, shelters, water, vault toilets, hiking trails and 30 non-pad campsites. Many of the buildings are built of native stone which was quarried nearby. Wood that was used to build roofs, bridges, and benches came from logs cut in the area. The Nature Center is an education facility, museum and interpretive center, and is located just off NE 71 (approximately 600 feet east of the highway). The big game reserve consists of 310 acres which holds a small herd of buffalo, elk, and sometimes longhorn cattle. Visitors are not allowed within the fenced reserve; however, these species can be viewed from the boundary fence. Other wildlife is also present on the reserve including turkey,

deer, bobcat, and coyote. The Wildcat Hills SRA, Nature Center, and big game reserve are managed by NGPC (NGPC 2012). NDOR will work with the NGPC during future projects to avoid or minimize impacts to Wildcat Hills SRA and its features and operations.

Scotts Bluff National Monument

Scotts Bluff National Monument is located in Scotts Bluff County roughly two miles south of US 26 and roughly two miles west of NE 71 near the cities of Scottsbluff and Gering. Scotts Bluff National Monument consists of 3,000 acres of which includes Scotts Bluff and the adjacent prairie lands. Scotts Bluff rises 800 feet above the North Platte River and served as a prominent landmark for Native Americans and the emigrants on the Oregon, California, and Mormon Trails. A three-mile scenic trail leads to the summit of Scotts Bluff Monument. Scotts Bluff National Monument also preserves the numerous wildlife species that reside in its boundaries. The movements of animal populations are somewhat restricted in and out of the Monument due to the surrounding private land, approximately half of which is agricultural (NPS *Scotts Bluff National Monument*).

Potential for impacts to Scotts Bluff National Monument appear to be unlikely due to its far distance from the current roadway. The potential for animal movement across NE 71 from the Monument is not a concern as their direction of movement is primarily north and south (personal communication, Ken Mabery, NPS, 15 March 2012). Also, as previously mentioned, the private land surrounding the Monument restricts the movement of animal populations outside of the boundaries of the Monument. In addition, the distance of the Monument from existing roadways minimizes the potential of wildlife crossings along future proposed roadways.

In addition to publicly accessible lands there are several other lands that either serve a public use or are owned by governmental agencies.

Nebraska Land Trust

The Nebraska Land Trust (NLT) was founded in 2001 as a 501(c)(3) non-profit organization, to provide conservation options for landowners who want to protect their land. Land trusts play a role in protecting natural and historical resources on private land primarily through conservation easements (NLT *n.d.*). Although the NLT holds conservation easements on private lands, the intent of these easements is for a public purpose as their role is to protect natural and historic resources. The NLT currently has 1,667 acres under easement on two private properties in Dawes and Sioux Counties, all west of the Heartland Expressway Corridor. A third easement is being worked on in Dawes County (also west of the Heartland Expressway Corridor) that would bring another 592 acres under protection, pending funding. The NLT is also obtaining conservation easements in the Pine Ridge area to help maintain scenic views and habitat for wildlife, especially bighorn sheep and other at-risk-species (personal communication, Dave Sands, 20 March 2012).

NDOR will communicate with NLT to avoid and minimize impacts to current and future NLT conservation easements.

Minuteman III Missile Silos

Francis E. Warren Air Force Base (Warren AFB), home to the 90th Missile Wing, is located in Cheyenne, Wyoming, approximately 60 miles west of Kimball, Nebraska, and NE 71. Warren AFB and the 90th Missile Wing host 150 Minuteman III Intercontinental Ballistic Missiles in an area extending from Cheyenne to east of Sidney, Nebraska, and from Sterling, Colorado to Scottsbluff, Nebraska (i.e. the Wing area) as shown in Figure 3.8. Individual missile installations are widely dispersed in underground, hardened Launch Facility (LF) silos within the Wing area. For every grouping, or “flight” of ten LFs in the field, there is one manned Launch Control Center (LCC) providing command and control interface with the LFs. Each polygon on the figure represents an approximate area containing a single “flight” of

approximately ten missile LFs, and one LCC. Additional missile maintenance and training facilities are also located at Warren AFB.

While the exact location of individual missile silos is not publicly available information, NDOR has a long history of coordinating with Warren AFB and the 90th Missile Wing regarding projects in this area of the state, and will continue to coordinate with them on future projects.

Additionally, any historic sites identified along the Heartland Expressway Corridor may have the potential to be a Section 4(f) property. NDOR will work with the NSHS to identify historic sites along the corridor that may warrant Section 4(f) consideration.

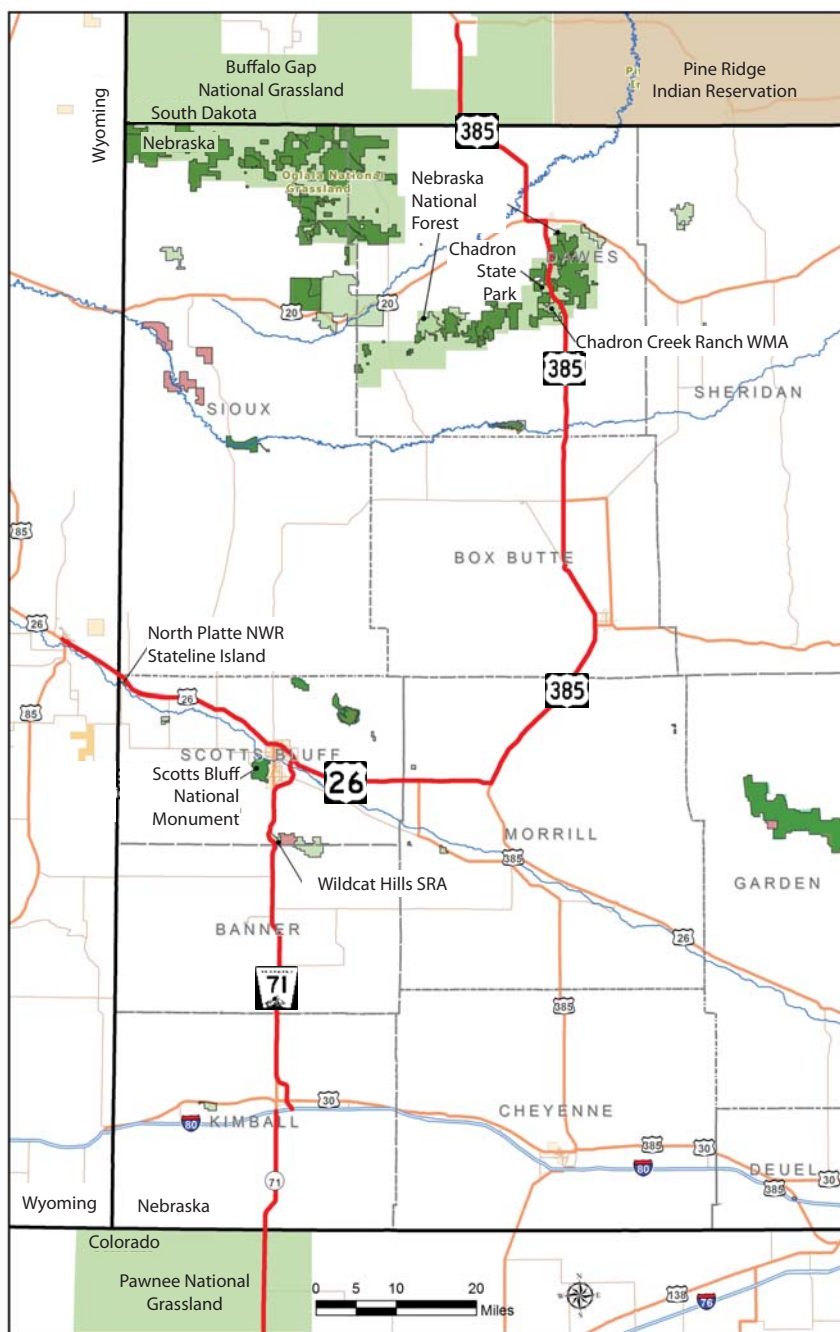


Figure 3.7 – Heartland Expressway Section 4f

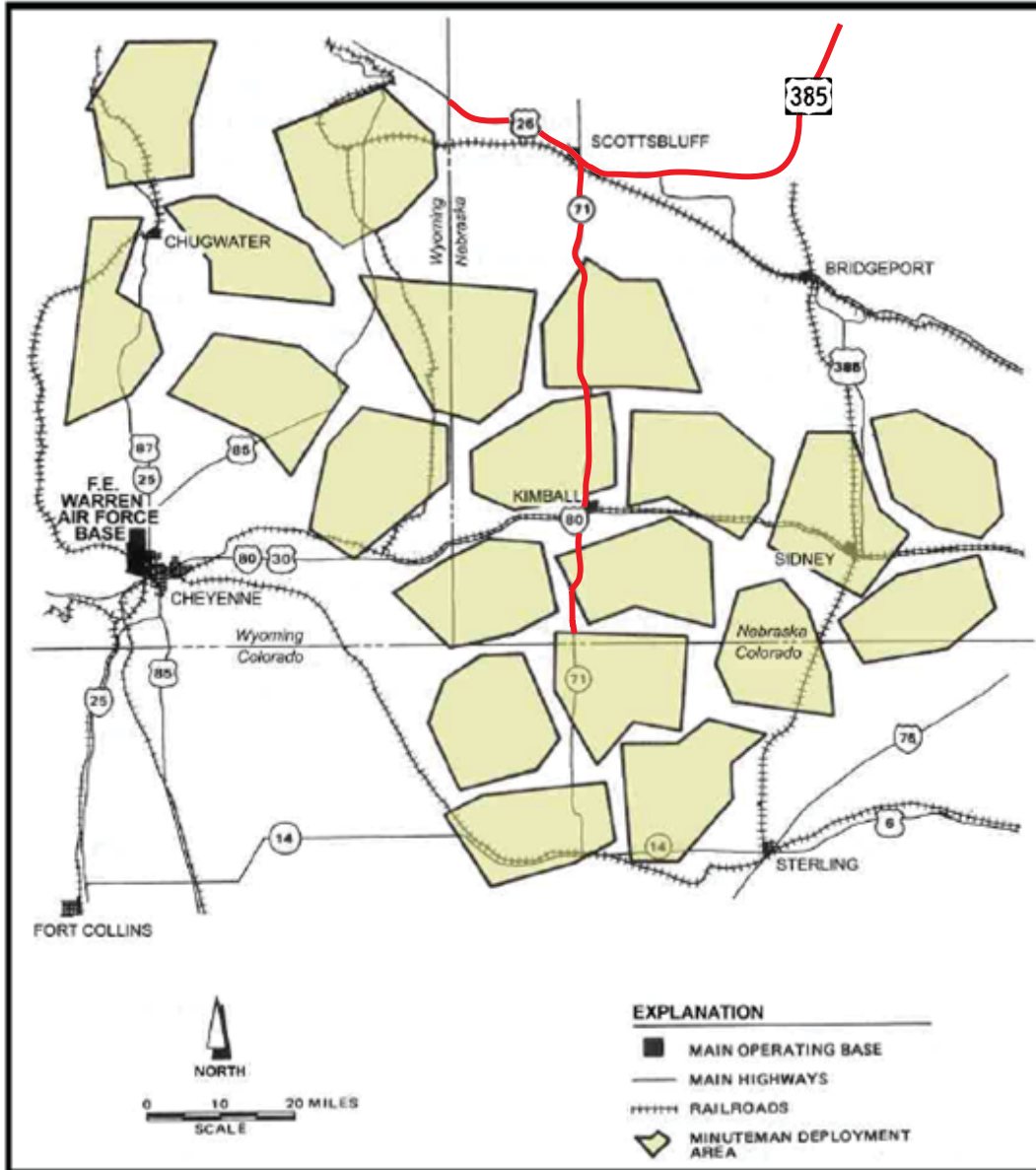


Figure 3.8 – Warren AFB Minutemen Deployment Areas

3.2.13 PRIME AND IRRIGATED FARMLAND

7 CFR Part 658 defines policies for complying with the Farmland Protection Policy Act of 1981 (FPPA), and outlines guidelines for federal agencies to take into account any adverse effects on farmland and develop alternatives that would avoid or mitigate such adverse effects. Farmland is defined as “prime or unique farmlands” or “farmland of statewide or local importance. “Farmland’ does not include land already in or committed to urban development or water storage.”

As required by the FPPA, NDOR will coordinate with the National Resources Conservation Service (NRCS) to determine potential areas of prime farmland for future projects and will work to avoid and minimize impacts to prime farmland to the extent possible.

3.2.14 VISUAL RESOURCES AND AESTHETICS

Within the Study Area there are numerous locations such as Chadron State Park, Nebraska National Forest, NLT conservation easement areas, Pine Ridge, Wildcat Hills, privately owned land, and multiple other features and areas that provide visual and aesthetic resources. These areas have varied landscapes that provide scenic views, vistas, and viewing opportunities of standing structures, rolling hills, surface waters, forests, and wildlife. Specific visual landscapes identified within the Study Area are described in greater detail in Section 3.3 “Rational Sub-Corridors.” Future projects occurring in the Study Area may produce changes in visual resources and aesthetics both temporarily and permanently. NDOR will coordinate with the managers of these resources, the public, and other interested parties to minimize these effects, and possibly to create opportunities to enhance views of unique visual resources.

Scenic Byways

The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration “Established in Title 23, Section 162 of the United States Code under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and reauthorized and expanded significantly in 1998 under TEA-21 and again under SAFETEA-LU in 2005, the program is a grass-roots collaborative effort established to help recognize, preserve and enhance selected roads throughout the United States.” The program recognizes roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities and provides for designation of these roads as National Scenic Byways, All-American Roads or America’s Byways (FHWA 2013a). Recently, the passing of MAP-21 in 2012 eliminated the National Scenic Byways Program; however, some scenic byway projects may be eligible under other Transportation Alternative programs.

Gold Rush Scenic Byway

The Gold Rush Scenic Byway is a 158-mile byway along US 385 that traverses the panhandle of Nebraska north and south from the Nebraska/South Dakota border to the Nebraska/Colorado border. It is also a part of the Canadian American (CANAM) Highway which runs from Canada to Mexico. This Scenic Byway is a historic route that was used to transport over \$200,000 worth of gold out of the Black Hills between 1874 and 1881. Scenery along this byway includes sandhills, pine-covered buttes, rolling hills, and river valleys. In the Study Area the Gold Rush Scenic Byway passes by and through many unique landscapes in the Study Area including Chadron State Park and the Pine Ridge District of the Nebraska National Forest. Outside of the Study Area it passes by unique landscapes such as Courthouse Rock and Jail Rock outside of Bridgeport (Nebraska Department of Economic Development n.d.).

3.3 RATIONAL SUB-CORRIDORS

This section describes potential sub-corridors that could be considered to have independent utility, connect logical termini, and not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. The rational end points of these sub-corridors were generally identified by highway junctions and population areas, and represent corridors of sufficient length to look at all potential impacts. Although some of these sub-corridors are relatively long, construction may be “staged,” or programmed for shorter sections as funding permits. This set of sub-corridors may change or be refined in the future, but for the purposes of this report, the list provides a framework for identifying groups of environmental issues based on similar geographic or transportation characteristics that may need to be addressed, and also provides a starting place for future projects and planning efforts.

- NE 71, from CO Highway 14 to I-80, south of Kimball, NE
- NE 71, from I-80 to US 26, east of Scottsbluff, NE
- US 26, from Torrington, WY to Morrill, NE
- US 26, from Morrill, NE to Scottsbluff, NE
- US 26, from Scottsbluff, NE to Minatare, NE
- US 26 and Nebraska Highway Link 62A (L62A), from Minatare, NE to US 385 intersection

- US 385, from L62A intersection to Alliance, NE
- US 385, from Alliance, NE to Dodge Road (L7E), east of Hemingford, NE
- US 385, from Dodge Road (L7E), east of Hemingford, NE to US 20 in Chadron, NE
- US 385, from US 20 in Chadron, NE to Oelrichs, SD

Several of these sub-corridors cross state boundaries, which are often used as programming or funding limits. However, in defining the purpose and need for future projects, which could include portions or groups of these sub-corridors, careful consideration should be given to actual transportation demands and needs, which are rarely defined solely by political boundaries. Nonetheless, for this report, the focus is on the Nebraska portion of these segments. A general description of each sub-corridor and a summary of the most likely environmental issues to be encountered are presented below.

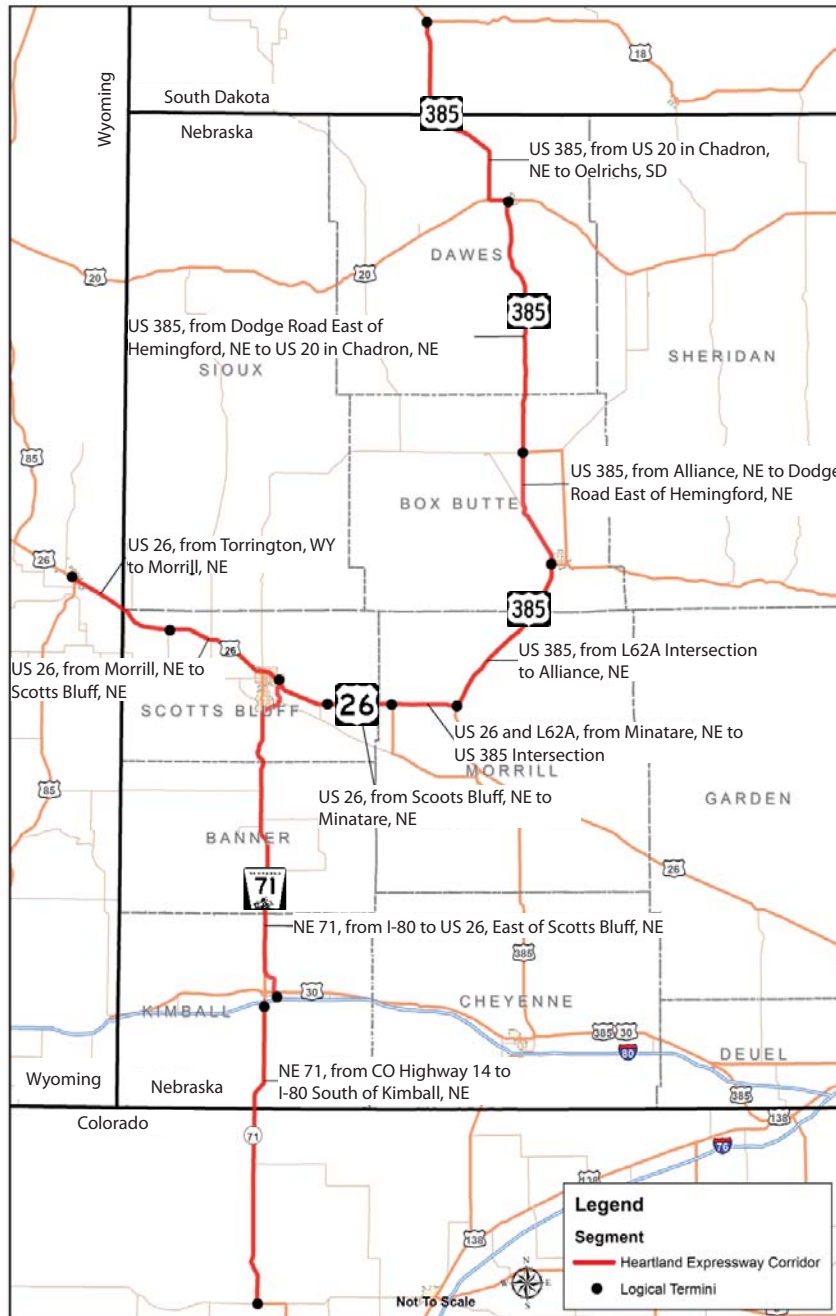


Figure 3.9 – Heartland Expressway Sub-corridors

3.3.1 NE 71, FROM CO HIGHWAY 14 TO I-80, SOUTH OF KIMBALL, NE



Figure 3.10 – Minuteman III missile silo, just north of Nebraska/Colorado border



Figure 3.11 – Clean Harbors Hazardous Materials Recycling and Disposal Center

Beginning at the Colorado/Nebraska border, this segment is approximately 15 miles long, and traverses the Flat to Rolling Plains sub-region of the High Plains ecoregion, which is characterized by flat to rolling plains covered with mixed- and short-grass prairie, and dryland cropland with large areas of irrigated agriculture, with few intermittent streams.

This segment is currently a two-lane roadway. Potential improvements in the future could span a range of projects, including, but not limited to: widening to four-lanes, addition of passing lanes, intersection modifications, geometric upgrades, and enhancement projects.

Potential resources affected in this segment include:

- Kimball Municipal Airport (south of Kimball, NE)
- High Point Motor Speedway (south of Kimball, NE)
- Kimball Grasslands BUL
- Minuteman III Missile Silo Installments
- Clean Harbors Environmental (Hazardous Materials Recycling and Disposal)
- Oil and gas impacts (several pipelines and oil fields)
- Waters of the United States (several unnamed streams)
- Playa Wetlands
- Swift Fox
- Mountain Plover
- Colorado Butterfly Plant (west of Kimball, NE)
- Pawnee National Grassland (in Colorado)

3.3.2 NE 71, FROM I-80 TO US 26, EAST OF SCOTTSBLUFF, NE

This segment is approximately 50 miles long, and also traverses the Flat to Rolling Plains, the Pine Bluffs and Hills, and the Platte River Valley and Terraces sub-regions of the Western High Plains ecoregion. The Pine Bluffs and Hills sub-region is characterized by bluffs, escarpments, and steep valley side slopes covered with mixed grass prairie and rangeland, as well as rock outcrops. The Platte River Valley and Terraces sub-region is characterized by flat alluvial valleys, bluffs and uplands covered with lowland tallgrass, mixed-grass and sandsage prairies, floodplain woodlands, irrigated cropland and native rangelands.

This segment has already been improved to a four-lane roadway, including a northeast bypass around Kimball, north of I-80. Major improvements are not expected in this segment, but may include enhancements (e.g. rest areas) or intersection modifications.



Figure 3.12 – NE 71, north of Kimball, already widened to 4 lanes

Potential resources along this segment include:

- Municipal Energy Agency of Nebraska (MEAN) Kimball wind farm (i.e. future expansion)
- Wildcat Hills State Recreation Area
- Waters of the United States (Pumpkin Creek, Lodgepole Creek, North Platte River)
- Category 5 Impaired Waters (North Platte River, Winters Creek, Gering Dam)
- Irrigation canals (Fort Laramie Canal, Gering Canal, Kimball Canal)
- Wellhead Protection Areas (City of Kimball, Scotts Bluff County SID #10, City of Gering, City of Scottsbluff)
- Playa wetlands and Western Alkaline wetlands
- Swift fox
- Mountain plover
- Bighorn sheep
- Colorado butterfly plant (west of Kimball, NE)

3.3.3 US 26, FROM TORRINGTON, WY TO MORRILL, NE

This segment is approximately 14 miles long, from the Wyoming/Nebraska border to Morrill, NE, and traverses the Platte River Valley and Terraces sub-region of the Western High Plains ecoregion. These areas are characterized by flat alluvial valleys, bluffs and uplands covered with lowland tallgrass, mixed-grass and sandsage prairies, floodplain woodlands, irrigated cropland, and native rangelands.

This segment is currently a two-lane roadway. Potential improvements in the future could span a range of projects, including, but not limited to: widening to four-lanes, addition of passing lanes, intersection modifications, bypasses, geometric upgrades, and enhancement projects.



Figure 3.13 – US 26, two-lane highway passing under BNSF railway. This picture is looking west, showing US 26, between Henry and Morrill, NE, where the BNSF railroad (double track) crosses the highway and the adjacent Tri-State Canal (right side of the photo). Improving the highway to four-lanes at this location may require modifications to the overpass and coordination with the local irrigation district.

Potential resources affected in this segment include:

- North Platte National Wildlife Refuge (Stateline Island, south of Henry, NE)
- BNSF Railway coordination (overpass near City Road D)
- Irrigation canal crossings (Farmers Canal and Tri-State Canal)
- Wellhead Protection Areas (Village of Henry, Village of Morrill)
- Waters of the United States (Sheep Creek, North Platte River)
- Floodplains (Sheep Creek, Tub Springs Drain)
- Cultural/Historic properties (emigration trails, Pony Express)
- Business impacts (downtown Morrill, NE and Henry, NE)
- Socio-economic impacts
- Western Alkaline wetlands
- Swift fox

3.3.4 US 26, FROM MORRILL, NE TO SCOTTSBLUFF, NE

This segment is approximately 18 miles long, and traverses the Platte River Valley and Terraces sub-region of the Western High Plains ecoregion. These areas are characterized by flat alluvial valleys, bluffs and uplands covered with lowland tallgrass, mixed-grass and sandsage prairies, floodplain woodlands, irrigated cropland, and native rangelands.

This segment is currently a four-lane roadway. Potential improvements in the future would likely be limited to intersection modifications and enhancement projects.

Potential resources along this segment include:

- BNSF Railway coordination
- Cultural/Historic Properties (emigration trails, Pony Express)
- Category 5 Impaired Waters (Tub Springs Drain, Winters Creek)
- Irrigation canals (Tri-State Canal, Enterprise Canal)
- Wellhead Protection Areas (Village of Morrill, City of Mitchell, City of Gering, City of Scottsbluff, Northside Mobile Home Ranch, Sunflower Mobile Home Court)
- Business and Industry impacts (downtown Mitchell, NE, industries northwest of Scottsbluff, NE)
- Swift fox

3.3.5 US 26, FROM SCOTTSBLUFF, NE TO MINATARE, NE

This segment is approximately seven miles long, and traverses the Platte River Valley and Terraces sub-region of the Western High Plains ecoregion. These areas are characterized by flat alluvial valleys, bluffs and uplands covered with lowland tallgrass, mixed-grass and sandsage prairies, floodplain woodlands, irrigated cropland, and native rangelands.

This segment is currently a four-lane roadway. Potential improvements in the future would likely be limited to intersection modifications and enhancement projects. An Environmental Assessment was prepared for this segment in 1997, which addressed specific issues when the road was upgraded from two lanes to four.

Potential resources affected in this segment include:

- BNSF Railway coordination
- Cultural/Historic Properties (Rebecca Winters Memorial Park and Gravesite)
- Category 5 Impaired Waters (Winters Creek, Ninemile Creek)
- Irrigation canals (Minatare Canal, Fairfield Seep)
- Wellhead Protection Areas (City of Minatare, Minatare Plaza)
- Western Alkaline wetlands
- Swift fox
- River otter

3.3.6 US 26 AND L62A, FROM MINATARE, NE TO US 385 INTERSECTION

This segment is approximately 18 miles long, and traverses the Platte River Valley and Terraces, and the Pine Bluffs and Hills sub-regions of the Western High Plains ecoregion. These areas are characterized by flat alluvial valleys, bluffs and uplands covered with lowland tallgrass, mixed-grass and sandsage prairies, floodplain woodlands, irrigated cropland, and native rangelands.

This segment is currently a two-lane roadway. Potential improvements in the future could span a range of projects, including, but not limited to: widening to four lanes, additional passing lanes, intersection modifications, geometric upgrades, and enhancement projects. An Environmental Assessment was prepared in 1997 for this segment to address specific concerns related to the proposed widening to four lanes.

Potential resources along this segment include:

- Business and Industry impacts (numerous feed lots)
- Residential impacts (numerous homes close to the existing roadway)
- Waters of the United States (Ninemile Creek, Wildhorse Creek, West Water Creek, Red Willow Creek)
- Irrigation canals (Minatare Drain, Bayard Drain, Wildhorse Drain)
- Floodplains (Ninemile Creek)
- Unique natural features (Wildhorse Canyon)
- Cultural/Historic Properties
- Swift fox
- River otter
- Prairie dog colonies
- Black-footed ferret
- Blowout penstemon
- Trout
- Panhandle Prairies Biological Unique Landscape

3.3.7 US 385, FROM L62A INTERSECTION TO ALLIANCE, NE

This segment is approximately 24 miles long, and traverses the Sand Hills sub-region of the Nebraska Sand Hills ecoregion, which is characterized by sand sheets and extensive fields of sand dunes, covered by mixed grass prairie and rangeland.

This segment is currently a two-lane roadway, and is planned to be improved to a four-lane roadway in the near future. An Environmental Assessment is currently being prepared for this segment which addresses the currently proposed improvements.

Potential resources in this segment include:

- BNSF Railway coordination
- Business and Industry impacts (Alliance, NE)
- Residential impacts (Angora, NE)
- Wellhead Protection Areas (City of Alliance)
- Sandhills wetlands
- Waters of the United States (Snake Creek)
- Blowout penstemon
- Swift fox
- Prairie dog colonies
- Cultural/Historic Properties
- Panhandle Prairies Biological Unique Landscape

3.3.8 US 385, FROM ALLIANCE, NE TO DODGE ROAD (L7E), EAST OF HEMINGFORD, NE

This segment is approximately 17 miles long, and traverses the Flat to Rolling Plains sub-region of the High Plains ecoregion, which is characterized by flat to rolling plains covered with mixed-and short-grass prairie, and dryland cropland with large areas of irrigated agriculture, with few intermittent streams.

This segment is currently a two-lane roadway. Potential improvements in the future could span a range of projects, including, but not limited to: widening to four-lanes, addition of passing lanes, intersection modifications, geometric upgrades, and enhancement projects.

Potential resources affected in this segment include:

- BNSF Railway coordination
- Irrigated cropland impacts
- Waters of the United States (North Branch Box Butte Creek, South Branch Box Butte Creek, Hemingford Creek, Berea Creek)
- Swift fox
- Blowout penstemon

3.3.9 US 385, FROM DODGE ROAD (L7E), EAST OF HEMINGFORD, NE TO US 20 IN CHADRON, NE

This segment is approximately 36 miles long, and traverses the Flat to Rolling Plains, the Sandy and Silty Tablelands, and the Pine Ridge Escarpment sub-regions of the Western High Plains ecoregion. The Flat to Rolling Plains are characterized by mixed- and short-grass prairie, and dry cropland with large areas of irrigated agriculture, with few intermittent streams. The Sandy and Silty Tablelands are characterized by tablelands with areas of moderate relief, some areas of isolated sand dunes, and canyons along stream valleys, with mixed-grass prairies, rangeland, and limited agriculture. The Pine Ridge Escarpment is characterized by alternating ridges and valleys with entrenched channels and rock outcrops, covered with ponderosa pine woodlands and mixed-grass prairie, with cattle grazing and wildlife habitat and limited agriculture.

This segment is currently a two-lane roadway. Potential improvements in the future could span a range of projects, including, but not limited to: widening to four-lanes, addition of passing lanes, intersection modifications, geometric upgrades, and enhancement projects.

Potential resources affected in this segment include:

- Pine Ridge District of the Nebraska National Forest (private and federal owned lands)
- Chadron State Park
- Chadron Creek Ranch Wildlife Management Area
- Bighorn Sheep Management Area
- Multiple public and private campgrounds and open spaces
- Pine Ridge Job Corps
- NLT Conservation Easement Lands
- Cultural/Historic Properties (Fort Robinson-Camp Sheridan-Pine Ridge Agency Road)
- Waters of the United States (Chadron Reservoir, Chadron Creek, Niobrara River, Pebble Creek, Cottonwood Creek, Dry Creek)
- Category 5 Impaired Waters (Niobrara River, Chadron Creek)
- Ridgeview Golf Course (south of Chadron, NE)
- Socio-Economic impacts (Redwood Trailer Court south of Chadron, NE)
- Business impacts (Chadron, NE)
- Greenwood Cemetery (Chadron, NE)
- Wellhead Protection Areas (City of Chadron)
- Blacknose shiner, finescale dace and redbelly dace
- Swift fox
- Bighorn sheep
- Upper Niobrara and Pine Ridge Biologically Unique Landscapes



Figure 3.14 – Approaching the Niobrara River on US 385



Figure 3.15– Niobrara River crossing US 385



Figure 3.16 – US 385 in Nebraska National Forest approaching the Pine Ridge Job Corps



Figure 3.17 – Chadron State Park along US 385



Figure 3.18 – Chadron Reservoir

3.3.10 US 385, FROM US 20 IN CHADRON, NE TO OELRICHS, SD

This segment is approximately 32 miles long, and traverses the Semiarid Pierre Shale Plains sub-region of the Northwest Great Plains ecoregion, which is characterized by un-glaciated, undulating to rolling plains, with steep sided, incised stream channels. The vegetation is mixed-grass prairie, with cattle grazing and some limited dryland farming.

This segment is currently a two-lane roadway. Potential improvements in the future could span a range of projects, including, but not limited to: widening to four-lanes, addition of passing lanes, intersection modifications, geometric upgrades, and enhancement projects.

Potential resources affected in this segment include:

- Cultural/Historic (Historical marker just north of U.S. 20 / U.S. 385 intersection)
- Wellhead Protection Area (Eagles Nest Estates)
- Waters of the United States (White River, Rush Creek)
- Swift fox
- Oglala Grasslands Biologically Unique Landscape
- Buffalo Gap National Grassland (in South Dakota)



Figure 3.19 – US 385 looking north just north of US 20



Figure 3.20 – Work beginning on widening US 385 to four-lanes north of Oelrichs, SD

3.4 AGENCY COORDINATION

As part of the Heartland Expressway Corridor Development and Management Plan (CDMP), FHWA requested preliminary agency coordination with interested resource agencies to identify potential concerns, and gather input on possible environmental resources to be considered in the environmental review section of the CDMP. Agency coordination consisted of multiple emails and a resource agency meeting held on March 20th, 2012 at the NDOR District Office in North Platte, NE. Agencies in attendance at the meeting include FHWA, NDOR, USFWS, NGPC, USACE, NLT, NSHS, USFS, and University of Nebraska State Museum. Agencies invited to the meeting but who were unable to attend were the BOR, EPA, NPS, NDEQ, Upper Niobrara White NRD, North Platte NRD and South Platte NRD. The agencies not in attendance but that had relevant concerns sent responses via email prior to the meeting. Concerns, comments, and other identified resources brought to attention by the various agencies have been incorporated into this document, and are also included in the Public Involvement Appendix (Appendix E).

Preliminary tribal coordination was also requested by FHWA for this project. A list of tribes with potential interests in the Study Area was generated using several resources, including maps of historic treaties and land claims. The NSHS then contributed a list of additional tribes that might also have interests in the Study Area based on oral tradition, archeology, and historical and ethnographic information. A statewide list of tribes expressing some interest in Nebraska was also provided by FHWA. Thirty-eight (38) tribes were sent letters requesting their attendance at the resource agency meeting on March 20th, 2012 in North Platte, NE. See the Public Involvement Appendix (Appendix E) for a complete list of tribes that were contacted.

Tribal groups who responded included the Bureau of Indian Affairs - Winnebago Agency, the Iowa Tribe of Kansas and Nebraska, the Northern Arapaho Tribe of Wyoming, and the Pawnee Nation of Oklahoma. The Winnebago Agency indicated that the reservation resources of the tribes they serve (Omaha, Winnebago, and Santee Sioux) would not be affected, and the Iowa Tribe also indicated that they did not anticipate any tribal resources to be affected within the Study Area. The Northern Arapaho Tribe of Wyoming requested additional information about the nature of the proposed project, and the Pawnee Nation of Oklahoma indicated that they had several sites near Chadron, and would provide additional information to NDOR.

Wildlife Corridors

As previously mentioned, the USFWS is currently conducting a research study entitled "Swift Fox Survey along the Heartland Expressway Corridor." This study is being performed as a result of comments made at the resource agency meeting in 2012 (see Appendix E for more information), and is being funded with Federal Research Funds administered by NDOR (80% Federal, 20% State). After the study concludes, a strategy would be developed to address swift fox habitat connectivity. This strategy would then be carried forward into future projects created as a part of the Heartland Expressway Corridor.