Nebraska Department of Transportation

Plan for the Roadside Environment

This Plan was developed by the NDOT Landscape Plan Committee

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Foreword

The highway corridors across Nebraska impact the lives of all our citizens and visitors on a daily basis. The Department's mission is to provide a safe, reliable, affordable, and environmentally compatible transportation system.

This Plan will help guide the development of our highway roadsides.

The result will be a transportation system that makes the manmade and natural environments compatible and sustainable.

John L. Craig, Director
Nebraska Department of Roads

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Executive Summary

The *Plan for the Roadside Environment* is designed to create a roadside that can better overcome the disturbances of construction, withstand the rigors of the Nebraska Climate and perform the landscaping objectives that contribute to safe and maintainable roadsides that complement the surrounding landscape.

This manual compiles environmental and sociological information about Nebraska, providing a foundation for better understanding Nebraska landscapes and the highway corridors within their environment. The Nebraska Natural Legacy Project, a conservation plan published by the Nebraska Game and Parks Commission, formed the foundation for this plan.

The Plan was created for use by Nebraska Department of Transportation's personnel in creating roadside landscape and mitigation designs. It provides a common base of information for administrators, planners, designers, and construction and maintenance supervisors. The information is directed at understanding the integration of environmental concerns, landscape objectives and mitigation and maintenance requirements. As the plan was being developed, NDOT involved many of the natural resource agencies for their expertise. During this interagency involvement, it was realized that this documented approach to roadside development would also be of benefit to the agencies as well. The agencies can better understand and be part of NDOT's vision for an integrated landscape that maximizes benefits to the environment as well as the traveling public. The Plan provides information basic to the understanding of transportation needs and environment, in all defined landscape regions and roadway corridors of Nebraska. Information is presented in the form of regional maps and text for each of the six landscape regions in Nebraska. Five roadway corridor types are defined which can occur in all regions, with landscape objectives identified for each corridor type.

Implementation of the Plan requires roadside environment consultation at the earliest stages of a project's development, when feasibility is being considered through Engineering Review and Location Study. It is intended that the elements identified in the Plan will provide a foundation upon which NEPA analysis will draw, and preliminary through final design activities will be guided, in their various stages of development. During routing, scheduling, and project design reviews, the elements important to the project's landscape region will be discussed and incorporated for best design development. The Plan will provide a common base of information to be used in training construction and maintenance supervisors concerning landscape and context sensitive issues.

The Plan promotes increased use of native plantings and vegetative management to control noxious weeds, in an effort to provide a sustainable, noxious weed-controlled roadside environment. Section 6006 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU, 2005) recognized the value of increased use of native plantings and noxious weed control by providing Federal-aid eligibility for these purposes (23 Code of Federal Regulations, Section 329). Code 23 U.S.C. Section 329 specifically encourages and lists Federal-aid eligible plant establishment and management activities, such as those identified in this Plan, for efficient planning and use of limited resources. The Nebraska Plan promotes increased use of native plantings, good stewardship and maintenance of a unique and sustainable "Nebraska Landscape", recognizing that fulfilling the landscape objective is an integral part of good roadway design.

Introduction

Landscaping of the roadside involves many operations and items such as grading, drainage and soil stabilization techniques and the selection of trees, shrubs, perennials, grass and wildflower seeding. How and where these elements are installed, coupled with the use of environmental mitigations within the right-of-way whenever possible, can result in a number of secondary benefits to the roadway corridor. A better understanding, at the beginning of a project, regarding the role landscape treatments play in improving the perception and operation of the roadway corridor, enables better decisions to be made throughout the development of a project.

This landscape plan provides a framework to direct current and future development of sustainable roadway corridors in Nebraska. The *Plan for the Roadside Environment* recognizes the need for safety, ease of maintenance and environmental stewardship. It draws from a variety of data and experience gained from 40+ years of roadside projects and presents an aesthetic based on our prairie heritage, offering a unique Nebraska Style.

Accomplishing this plan will combine our experience with new methods, technologies and the knowledge and diverse skills of landscape architects, environmental scientists and civil engineers working together.

Enhancing existing partnerships and developing new partnerships with other agencies, communities, organizations and interested parties will also help fulfill this plan. Ongoing partnerships with Nebraska Game and Parks Commission, Nebraska Forest Service, UNL-Center for Grassland Studies, State Department of Agriculture-Weed Advisory Committee, NRCS-Nebraska Plant Materials Committee, various Natural Resource Districts and others will broaden the benefits to the public. With these partners, we will be able to share knowledge and combine resources for mutual benefit.

This plan addresses opportunities in which construction elements, combined with landscaping techniques and appropriate plant materials, will achieve an environmentally compatible statewide transportation system.

The Plan

The purpose of this plan is to create roadside landscapes for Nebraska highways that can better overcome the disturbances of construction, withstand the rigors of Nebraska's climate and fulfill landscape objectives that contribute to safe and maintainable roadsides that complement the surrounding environment.

The elements used to create the roadside landscape will substantially be those that are already included in each project, but they may be accomplished in new ways. When these elements also accomplish the landscape objectives of that roadway corridor, they increase the benefits of that investment and improve both the quality and value of our investment in that roadway corridor. Core elements to be used to accomplish desired landscape objectives include the following:

- Increased use of native plants appropriate to each landscape region of the state
- Using seeding of native grasses, legumes and forbs in new ways as design elements to accomplish landscape objectives as well as provide soil stabilization for the roadway corridor
- Using required environmental mitigations in a manner that will accomplish landscape objectives within the highway corridor
- Using permanent erosion control and stormwater control constructions as design features to accomplish landscape objectives within the highway corridor as appropriate
- Development of additional ways to use plantings to reduce maintenance efforts and improve stewardship
- Enhance existing partnerships and develop new partnerships with natural resource agencies and others to broaden benefits and to share knowledge and combine resources for mutual benefit

The roadside landscape must also recognize the movement of plants and animals. These corridors provide a way for plants and animals to move between habitats that have been fragmented by agriculture, expanding communities and various other activities of man and nature. Understanding this need and using thoughtful design and appropriate long-term management of these corridors will allow for safer movement of all species whether for seasonal migration or changes over longer periods of time.

Plan Components

In order to keep each roadway corridor in context with its surroundings, six landscape regions are defined for Nebraska. This NDOT *Landscape Regions Map* takes into consideration their differences in climate, geology, hydrology, geography and native plant communities across the state, as well as our experience working in these areas.

The statewide highway system contains several functional classifications for roadways. For the purposes of this plan, we have organized the highways into corridor types based on the context of their location, usage and complexity. The corridor types are:

- Metropolitan
- Community Center
- Community edge
- Rural Interstate/Expressway
- Rural Highway
- Scenic

Based on the characteristics of these corridors, landscape objectives have been assigned to each corridor type. The purpose of the landscape objectives is to improve:

- How the motorist perceives the roadway corridor.
- NDOT's ability to maintain each corridor type.
- Appearance and environmental quality of each corridor.

Seven landscape objectives have been established as basic to all roadway corridors (these are described on Page 13). Additional landscape objectives have been determined to be beneficial to each corridor type. The landscape objectives for each roadway corridor type are the same throughout the state, but they may be implemented in different ways to remain in context with a particular landscape region.

These objectives offer improved motorist safety by enhancing the driver's perception of vehicle speed and distance along the roadway, improving environmental quality, cost savings on repetitive maintenance operations, making the roadway compatible with its surroundings and more.

Reports have been compiled for each landscape region. Each report contains maps of the roads and special interest areas in that region, as well as information concerning environmental and social components. Any special landscaping techniques, hydrology, unique biotic communities, or environmental issues of particular concern to a specific landscape region are discussed and recommendations provided, when appropriate, in each regional report. Plant material guidance is provided for grasses, wildflowers and woody plants. These guidelines are based on plants that are native to that region, our experience in the landscape regions and research of other recognized sources.

A second regional map has been developed that displays the corridor classifications of the highway segments in each region. This map can be used to determine the landscape objectives desirable in each corridor. Information on special characteristics of roadway corridors in the region is also presented in these individual landscape region reports.

The regional reports provide background for a basic awareness of the overall environment the roadway corridors pass through. The reports point out many sociological and environmental issues that have an influence on the roadside environment.

The regional information will be the basis for the appraisal of roadway corridors within the various regions of the state. By reviewing the landscape needs, identifying the landscape objectives and coordinating them with the other environmental commitments, the roadway corridor will better meld with the surrounding regional landscapes.

In development of the roadside landscape, native plant materials will be emphasized. Environmental commitments such as roadside stabilization, mitigation requirements and threatened and endangered species bring requirements that must be incorporated into the project and affect the roadside environment. By reviewing the project throughout the roadway design process, the opportunity is available to incorporate the environmental requirements as design features within the roadway corridor, using them to accomplish desired landscape objectives.

The long-term maintenance needs of a roadway corridor must be considered. To be able to successfully maintain these sustainable roadside corridors, management plans will be developed with each District involved that recognize the agency capabilities, regional characteristics and any ongoing environmental commitments.

As this plan continues to develop, partnering will be expanded, and new guidelines for design, vegetation management, project implementation, incorporation into plan documents, specifications, contract administration will be developed.

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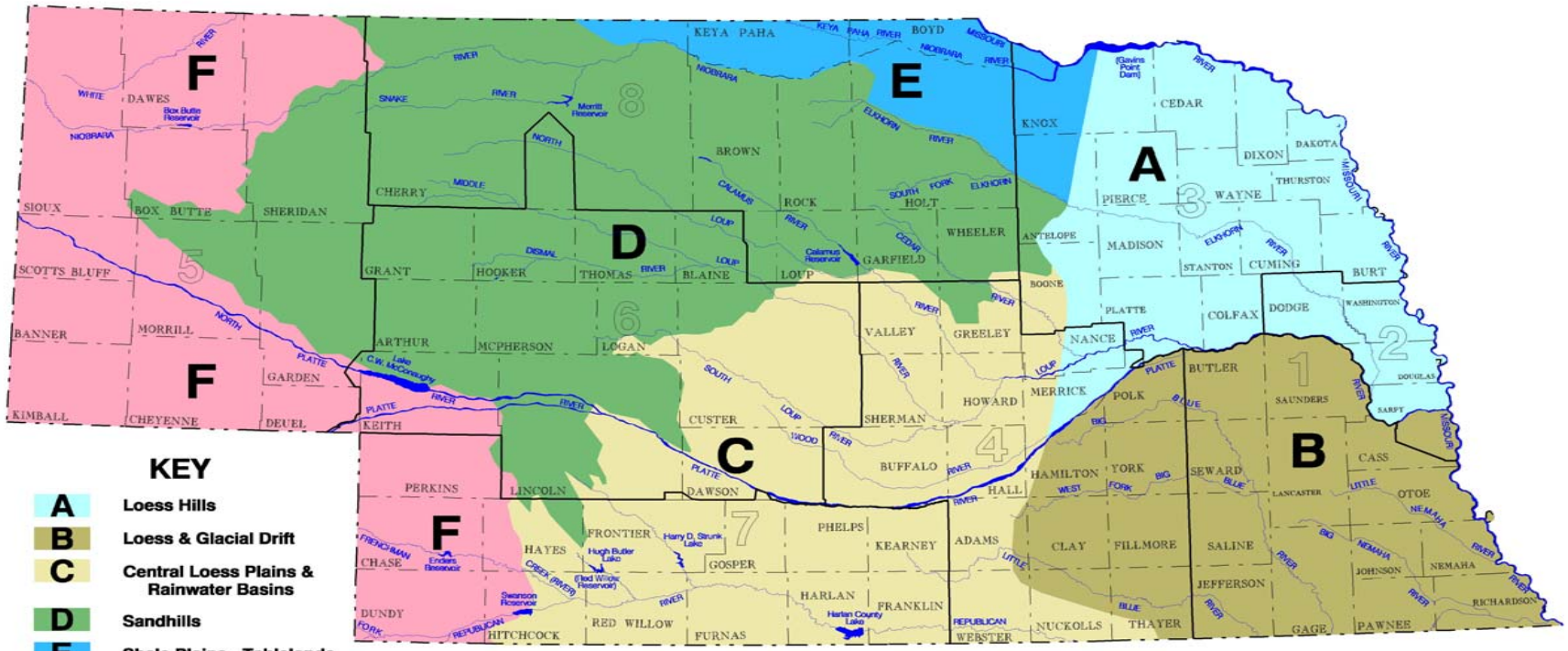
The landscape of Nebraska varies in climate, precipitation, soils, topography, and vegetation. Several entities have mapped the US including Nebraska, based on these characteristics. Examples include the USDA Plant Hardiness map, the US EPA Ecoregions map, and the UNL Topographic Regions map. A variety of these maps and our experience planting across the state in the open conditions and disturbed soils of our highway rights-of-way have contributed to the development of the NDOR Landscape Regions map. The regional boundaries shown on this map are based on shared characteristics that describe the unique qualities of each region. The descriptions attempt to describe the dominant environmental and sociological components in each region. The information has been provided to improve planning and design in context with the environmental resources of Nebraska.

NEBRASKA DEPARTMENT OF ROADS
LANDSCAPE REGIONS



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Statewide Landscape Corridor Classifications

The state highway system contains several functional classifications for roadways. For the purposes of this plan, the highways have been organized into six corridor types based on their complexity and location. These classifications are:

- Metropolitan
- Community Center
- Community Edge
- Rural Interstate/Expressway
- Rural Highway
- Scenic

The Metropolitan Corridor

This corridor type includes multilane divided roadways with full control of access and four or more traffic lanes designed to freeway standards and located within metropolitan areas. These corridors have closely spaced interchanges and ramps, occasional vehicular and/or pedestrian overpass/underpass structures, and possibly noise or retaining walls. Development adjacent to the right-of-way will range from dense buildings and streets to office and industrial development to residential backyards. This corridor is usually a primary commuter route with a high traffic volume. In contrast to the dense metropolitan area surrounding it, this corridor often provides a visual "open expanse". This corridor connects to the Rural Interstate/Expressway Corridor.

Numerous signs, message boards, median barriers, guardrails, light poles and other elements compete for the driver's attention in addition to distractions outside of the right-of-way. Adjacent property owners and users often have concerns about views and noise along this corridor type. The overriding need here is to visually simplify and unify the corridor. Using color, pattern and texture on the repeated elements such as the median barriers, sign structures and bridges can help unify the roadway corridor. Plant materials, earth forms, and screening devices can be used to simplify the views within the roadway and beyond and reduce distractions for the driver.

High traffic volume and heavy commuter traffic in this corridor type necessitate landscape treatments that include seasonal change to maintain the effectiveness of the plantings to the repeating users. Use of a variety of trees and shrubs that bloom in the spring or summer or have distinctive leaf color change in fall will help keep these plantings fresh in the eyes of the daily commuter. For the same reasons, continuous good appearance with simple regular maintenance is necessary.

There is also the need to create visual clues that help the driver at critical decision points and increase the motorist's awareness of their location. Opening up views to adjacent features or framing a view of a well-known building can do this. Developing a feature within the right-of-way can also serve this need.

The potential exists for future regulation of water quality for storm water runoff in this corridor type. If this occurs, it will require innovative design, careful plant selection and the use of new techniques appropriate for these areas.

Understanding the long-range zoning and land use plans for these areas, as well as close coordination with local governments and civic improvement groups, is necessary for planning for future needs.

Landscape Objectives for the Metropolitan Corridor

In addition to the seven primary landscape objectives (see Page 13), the following objectives should be considered:

- Screen undesirable views – to or from the roadway corridor
- Screen distractions outside of the right-of-way
- Accent informational signage
- Improve perception of roadway and traffic
- Screen headlight glare
- Provide point of interest/identify community entry/improve way-finding
- Buffer noise
- Aesthetic enhancement

The Community Center Corridor

This corridor consists of two-lane or four-lane roadways and some four lane divided roadways with limited or no control of access. This corridor type runs through cities and villages of varying size. The corridor has very limited right-of-way which is often shared by many above and below grade utilities. Adjacent property is composed of a commercial/business core surrounded by established residential areas. The area is characterized by pedestrian traffic, numerous entrances to the roadway from driveways, streets and alleys, and vehicle parking movements. The community image is often derived from the visual character of this corridor. This corridor usually connects and blends into the Community Edge Corridor.

Pedestrian and parking activities, in conjunction with the utilities and multiple access points, necessitate reduced speed. Traffic calming is a primary need for this corridor type and results from various physical design features that influence the motorist's perception of the corridor. A four-lane divided roadway incorporating a raised median to protect pedestrians at a designated crosswalk is one example of traffic calming. Introducing properly designed roundabouts or replacing large trees removed by construction to recreate a canopy and providing a feeling of enclosure, are two more ways to "automatically" cause traffic to reduce speed and maintain or improve the community image. Using colors, textures and pedestrian scale lighting fixtures in addition to typical street lighting can also unify this corridor with the Community Edge Corridor.

Close coordination with local government is essential in this corridor type to meet local concerns and understand cost sharing and long-term maintenance responsibilities.

Landscape Objectives for the Community Center Corridor

In addition to the seven primary landscape objectives (see Page 13), the following objectives should be considered:

- Improve perception of roadway and traffic
- Guide traffic – indicate change in direction
- Separate pedestrian and/or bike traffic from vehicular traffic
- Accent informational signage
- Aesthetic enhancement

The Community Edge Corridor

This corridor type includes both two-lane and multi-lane roadways. Four-lane facilities may be divided in numerous ways. Access control is generally limited. The right-of-way is usually restricted and shared with utilities. Adjacent development ranges from big box developments, fast food chains, motels and vehicle dealerships to industrial uses and grain elevators. Volume

of traffic and speed may vary with the community size. This corridor is a transition zone for the motorist to reduce or increase vehicle speed when entering or leaving a community. This corridor is the link between the Rural Highway Corridor and the Community Center Corridor and includes the community entrance.

The primary need within this corridor type is to identify the community entry, create qualities that help the motorist "automatically" reduce speed and heighten motorist awareness of vehicle turning movements and pedestrian traffic. Developing unity through this corridor to the Community Center Corridor will improve both and help maintain the community image.

Close coordination with local government is also essential in this corridor type to help meet local concerns and desires and understand cost sharing and long-term maintenance responsibilities.

Landscape Objectives for the Community Edge Corridor

In addition to the seven primary landscape objectives (see Page 13), the following objectives should be considered:

- Improve perception of roadway and traffic
- Guide traffic – indicate change in direction
- Separate pedestrian/bike traffic from vehicular traffic
- Provide point of interest/identify community entry/improve way-finding
- Storm water detention/ground water infiltration
- Accent informational signage
- Aesthetic enhancement

The Rural Interstate/Expressway Corridor

This corridor type includes four-lane divided rural interstate highways and expressways, generally having turf medians and partial to fully controlled access. Interchanges and/or intersections are widely spaced and right-of-way is usually uniform in width with minimal utilities. Travel time and distances are generally longer than those through the preceding corridors. Adjacent land is primarily in agricultural uses with scattered residences and farm-related structures. This corridor type may connect with the Metropolitan Corridor, the Rural Highway Corridor and sometimes the Community Edge Corridor. This is the primary long distance travel corridor type with a high percentage of heavy vehicles. It is also the primary tourist route through the state.

The needs in this corridor focus on safety related to longer driving time, consistent higher speeds and motorist awareness of their location. Providing features such as wetlands which may be required for mitigation, creating masses of planting color or varying texture by earth mounding will help vary eye focal length and reduce monotony. These focal points can also serve as points of interest and display the regional qualities of the area to the motorist.

Landscape Objectives for the Rural Interstate/Expressway Corridor

In addition to the seven primary landscape objectives (see Page 13), the following objectives should be considered:

- Control of blowing snow - snow drift control
- Frame views (help reduce highway hypnosis)
- Screen headlight glare
- Provide point of interest/identify community entry/improve way-finding
- Guide traffic – indicate change in direction
- Storm water detention/ground water infiltration

- Accent informational signage
- Screen undesirable views – to or from roadway corridor

The Rural Highway Corridor

This corridor type includes two-lane highways outside of corporate limits. The majority of the highways in the state will fall into this corridor type. These highways have some access control, limited right-of-way and long travel time and distances that are "interrupted" by segments of Community Edge and Community Center corridors through the communities they connect. Some tourists choose this corridor type as an alternative to the Interstate/Expressway Corridor because of slower speed, lower traffic volume, and closer contact with the communities.

There is a need in this corridor is to prevent monotony from developing along the corridor. Display of the regional landscape is another goal. The limited amount of right-of-way will not accommodate the use of large trees to frame views and provide points of interest in many areas. Therefore, using grasses, wildflowers or shrubs creatively to provide mass, texture, and color as a way to frame views or as a point of interest will break up monotony and also reinforce the regional character. Plantings or other constructions can help form a backdrop to give the motorist an advance awareness of a tee intersection or other change in direction of the roadway.

Landscape Objectives for the Rural Highway Corridor

In addition to the seven primary landscape objectives (see Page 13), the following objectives should be considered:

- Control of blowing snow – snow drift control
- Frame views (help reduce highway hypnosis)
- Guide traffic – indicate change in direction
- Screen headlight glare
- Provide point of interest/identify community entry/improve way-finding

The Scenic Corridor

This corridor type is most often associated with lower volume two-lane highways in rural areas. These roadways are designated and signed as "scenic by-ways" by either state or federal agencies. The corridors display special scenic value that is representative of the landscape region being traversed. These corridors provide pleasant views to landscape and cultural features and are often favored by tourists. The longer travel time and distances are again "interrupted" by communities. This corridor type connects to the Community Edge or the Rural Highway corridor.

A major need in this corridor is to accentuate existing scenic qualities and minimize impacts to them.

Landscape Objectives for the Scenic Corridor

In addition to the seven primary landscape objectives (see Page 13), the following objectives should be considered:

- Preserve existing views
- Frame views (help prevent highway hypnosis)
- Screen undesirable views – to or from the roadway corridor

Landscape Objectives

There are seven landscape objectives that apply to all corridor classifications. In addition to these, there may be several other landscape objectives that are specific to each particular corridor type. The following are objectives that should be considered in the design of all roadway corridor classifications:

- Stabilize the soil, prevent erosion, protect roadway structures - This objective includes erosion control measures and storm water pollution prevention methods; meeting the requirements of regulatory agencies, protecting our water resources and protecting the infrastructure of the roadway corridor.

- Manage wildlife habitat and connect wildlife corridors* - This is an issue of safety to both the motorist and the wildlife resources. The Department should be aware of locations where wildlife movements cross through transportation corridors on a regular or migratory basis and attempt to accommodate this movement as much as possible.

- Minimize maintenance, increase maintenance efficiency - The use of appropriate plant materials and landscape techniques can reduce routine maintenance procedures on the ROW. This can save time and resources.

- Integrate the roadway corridor into the surrounding regional landscape - This includes the use of regionally native plant materials through the rural settings to keep the corridor in context with the adjacent property. Within communities, the green infrastructure established within the ROW should be considered in the same manner as other infrastructure elements and considered for replacement or upgraded when disturbed by construction.

- Display native vegetation and introduce the motorist to the regional landscape - Understand and express regional changes in the landscape within the ROW. This is both favorable to the tourist industry and increases motorist awareness of their surroundings.

- Minimize effects on biotic communities - Limiting possible negative effects of construction and maintenance activities on the living features of the natural systems the roadway corridors traverse.

- Filter runoff pollutants - Protect surface and ground water through the use of a variety of landscape techniques and plant materials to treat runoff from the roadway within the ROW.

* May be limited in Metropolitan and Community corridor types.

Additional objectives have been selected from the following list to be accomplished in each individual corridor type because they are thought to provide the most benefit to the safe maintenance of that corridor type.

Storm water detention/ground water infiltration
Screen headlight glare
Control blowing snow – snow drift control
Accent informational signage
Screen distractions outside of the right-of-way
Frame views (help reduce highway hypnosis)
Provide point of interest/identify community entry/improve way-finding

Provide an emergency hay bank for livestock

Guide traffic – indicate change in direction

Buffer vehicle noise from adjacent properties

Screen undesirable views – to or from roadway corridor

Separate pedestrian and/or bicycle traffic from vehicular traffic

Preserve existing views

Improve perception of roadway and traffic:

- assist in estimating traffic speed/distance
- traffic calming/reduce traffic speed

Aesthetic enhancement

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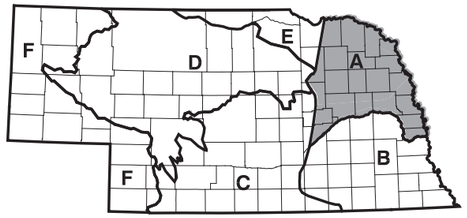
Landscape Region A



LEGEND

- Rulo Bluffs — Biologically Unique Landscape (From the Nebraska Natural Legacy Project)
- OMAHA — Major Communities
- Heritage Highway — Scenic Byway
- Bike Trail
- Railroad
- 5 — Mileage Numbers
- SP — State Wildlife Management Area
- Region Boundary

NEBRASKA STATE PARK AREAS

6.	FORT ATKINSON / 10 mi. N. Omaha, US-75 at Fort Calhoun
7.	LOUISVILLE LAKES / ½ mi. N.W. Louisville, N-50
8.	PLATTE RIVER / 1 mi. S., 2 mi. W. Louisville, S-13E
9.	SCHRAMM PARK / 7 mi. S. Gretna, N-31
10.	PELICAN POINT / 4 mi. E., 4 mi. N., 1 mi. E. of Tekamah
11.	SUMMIT RESERVOIR / 1 mi. S., US-75, 3 mi. W. Tekamah
12.	EUGENE T. MAHONEY / Ashland US-6, .5 mi. E., 1 mi. S., 2 mi. E or I-80 Ex 426
13.	TWO RIVERS / 1 mi. S., 1 mi. W. Venice, N-92
16.	FREMONT LAKES / 3 mi. W. Fremont, US-30
20.	DEAD TIMBER / 4 mi. N., Scribner, US-275, 1½ mi. E., 1 mi. S.
21.	PONCA / 2 mi. N. Ponca, N-9 or 12
30.	LEWIS & CLARK LAKE / 9 mi. N. Crofton, US-81, N-121 (6 areas)
	WEIGAND - BURBACH / 3½ mi. W. Jct. N-121/R54C
	BLOOMFIELD / 61/2 mi. W. Jct. N-121/R54C
31.	WILLOW CREEK / 2 mi. S.W. Pierce

Boundaries (indicated on map) - Landscape Region "A" encompasses the northeast corner of Nebraska and includes all or part of 21 counties: Knox, Cedar, Dixon, Dakota, Thurston, Wayne, Pierce, Antelope, Madison, Stanton, Cuming, Burt, Washington, Dodge, Colfax, Platte, Boone, Nance, Merrick, Douglas, and Sarpy. This landscape region includes the majority of NDOR District 3, a small portion of NDOR District 4 and all of NDOR District 2

Nebraska Department of Roads
June, 2007

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Description – Region "A"

Environmental Components

- **Climate**
  - Plant hardiness zone – This region is primarily within Zone 4b of the USDA Plant Materials Hardiness Zone Map with a range of annual minimum temperatures between -20 to -25 degrees Fahrenheit.
  - Average annual days with maximum temperature 90° Fahrenheit or higher range from a high of 46 days in the southeast portion of the region to fewer than 39 days in the north.
  - Annual participation – ranges from over 31 inches in the southeast to approximately 22 inches in the western edge of this region.
- **Landform** – Generally, rolling hills intersected by stream valleys, level to rolling plains in the central western area, transitioning to tablelands. Along the Missouri River, the terrain includes bluffs, river terraces, and floodplains.
- **General soil types** – Region "A" soils are primarily deep, well-drained loess over coarse glacial outwash. These silty soils are highly erodible. In the Missouri River Valley, soils can be silt, clay, sand or a combination of the three. As a result, some areas are poorly drained while others are well-drained. Steep bluffs rising from the river are highly erodible loess (silt). Along the Platte River, soils tend to be sands and/or silts and moderately to poorly drained depending on groundwater elevations.
- **Hydrology**
  - Rivers and streams – Landscape Region "A" is bordered on the north and east by the Missouri River. This is the state's largest river and borders with Iowa and South Dakota. The southeastern boundary of Region "A" shares the Platte River as a border with Landscape Region "B".

The Missouri River between South Sioux City and the Gavin's Point Dam is designated as a National Recreational River and part of the Wild and Scenic River system.

The Platte River is a mid-sized, shallow, braided river with sandbars common within the channel.

The Elkhorn River branches flow through the western part of this region from their origin in the Sandhills to the west. The Elkhorn River is a main tributary of the Platte River and maintains more consistent flows in dry years because of its underground source of water from the Sandhills origin.

Reduced flows and channelization have caused streams to become incised. The close proximity of agricultural fields to the rivers, streams, and wetlands has resulted in large volumes of sediment entering these areas.

- Wetlands – Wet meadows occur in the stream valleys where the water table remains near the surface throughout the year. The Willow Creek Prairies in Pierce, Madison, and Antelope Counties are such wetlands.

  Wet meadows and marshes can occur in all river floodplains, however, most of the floodplains are now crop ground.

- **Plant Communities**
  - Herbaceous– Tall grass prairie remnants occur on some of the bluff tops and west-facing slopes along the Missouri River area. These have been reduced and degraded by shrub and tree encroachment due to lack of wildfires. Upland tall grass prairie is dominated by big bluestem, Indian grass, switchgrass and Canada wild rye. Hundreds of species of wildflowers and other forbs contribute to a diverse plant composition. Examples of these include goldenrod, blazing star, sky blue aster and purple coneflower.

    Wet meadows of the Willow Creek Prairies in Pierce, Madison, and Antelope Counties contain one of the largest populations of the threatened western prairie fringed orchid. These wet meadows are dominated by big bluestem and prairie cordgrass.

  - Woody – The Missouri River bluffs in this region support eastern deciduous forest of bur oak, basswood, and iron wood. River floodplains are dominated by cottonwood, willows, boxelders, and elm. The largest intact deciduous forest in Nebraska lies within the Omaha and Winnebago Indian Reservations. Eastern red cedar is becoming invasive in some areas, especially prairie, pasture and rangeland areas. Control of seed-producing trees may be necessary in these areas.

  - Invasive plants – Bromegrass, Canada thistle, leafy spurge and red cedar are examples of invasive species steadily encroaching on prairie remnants, pastures and the roadsides. Phragmities, tamarix, and Reed's canarygrass are examples of the invasives threatening the stream and river courses, as well as wetlands.

  - Protected plants – The following species are listed in this region as threatened or endangered by state and/or federal agencies:

    Western Prairie Fringed Orchid (Platanthera praeclara)
    American Ginseng (Penax quinquefolium)
    Small White Lady's Slipper Orchid (Cypripedium candidum)

- **Animals** – The following species are listed in this region as threatened or endangered by state and federal agencies:

  River Otter (Lutra canadensis)
  Topeka Shiner (Notropis topeka)
  Sturgeon Chub
  (Macrhybopsis gelida)
  Lake Sturgeon
  (Acipenser fulvescens)
  Pallid Sturgeon
  (Scaphirhyncus albus)
  Scaleshell Mussel (Leptodea leptodon)
  Higgins Eye Mussel (Lampsilis higginsii)
  Interior Least Tern
  (Sterna antillarum athalassos)
  Piping Plover (Charadrius melodus)
  Massasauga (Sistrurus catenatus)
  Bald Eagle (Haliaeetus leucocephalus)

- **Biologically Unique Landscapes and Habitats** (as called out in the Nebraska Natural Legacy Project) – are areas of the state that have been identified as key habitats that offer the highest likelihood that they will persist over the long term. These areas were selected based on known occurrences of ecological communities and at-risk species and offer the best opportunity for conserving the full array of biological diversity in Nebraska. Disturbance to these areas should be minimized. Habitat preservation in the landscape design is highly desirable. Opportunities to enhance and restore critical habitat should be considered in these areas.

  Listed here are the Biologically Unique Landscapes that occur in this landscape region:

  Eastern portion of Verdigre-Bazile Watershed portions of Knox and Antelope Counties; Willow Creek Prairies – floodplain of Willow Creek primarily in Pierce County with small parts in Madison and Antelope County; Elkhorn Confluence – the area around the confluence of the North Fork and South Fork of the Elkhorn River in Stanton County; Ponca Bluffs – steep bluffs along the Missouri River in Dakota, Dixon, and Cedar Counties; Thurston-Dakota Bluffs – steep bluffs and floodplain of the Missouri River channel and floodplain from the confluence with the Platte River north to the Gavin's Point Dam; Lower Loup Rivers – channels have many open sandbars and wooded islands. Possible nesting colonies of interior least tern and piping plover.

Sociological Components

- **Area history** – Once covered by tall grass prairie with scattered deciduous woodlands in protected valleys, the region is now primarily pasture and crop land agriculture. Land use changes were initiated by the settlement spurred by the Homestead Act.

- **Economic features** – Primarily agriculture with some scattered light manufacturing. The Omaha metro-politan area in the southeast portion of the region is the largest population area of the state and center of business and industry. Meat packing plants are an economic feature in the Norfolk and South Sioux City areas.

- **Land use/Ag type** – Predominantly crop land. Scattered livestock pasture and feedlots. Mostly dryland grown crops with limited irrigation. Farms continue to become fewer in number and larger. Increased rural residential development around major communities.

Federal land in this region includes: Desoto National Wild-life Refuge in Washington County along the Missouri River.

- **Major communities** – Omaha, Papillion, Bellevue, Fremont, Norfolk, South Sioux City, Columbus.

  The Sovereign Nations of Santee, Winnebago, and Omaha Indian Reservations are in this region. The Ponca Tribe of Nebraska maintains offices and services in this region.

- **Transportation**

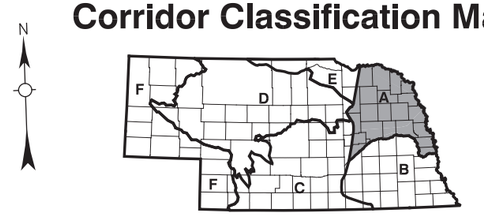
  Major highways – include portions of: US-81, US-77, US-75, I-80, I-129, 480, and 680, US-275, US-20, N-12, US-30.

  Railroads – Burlington Northern Santa Fe, Nebraska Central Railroad Company, Nebraska Northeastern Railway Company, Union Pacific Railroad.

  Scenic highways – "Outlaw Trail Scenic Byway" N-12 from Valentine to South Sioux City. "Lewis and Clark Scenic Byway" – US-75 from South Sioux City to north I-680 near Omaha. "Lincoln Highway Scenic & Historic Byway" – US-30 across the state.

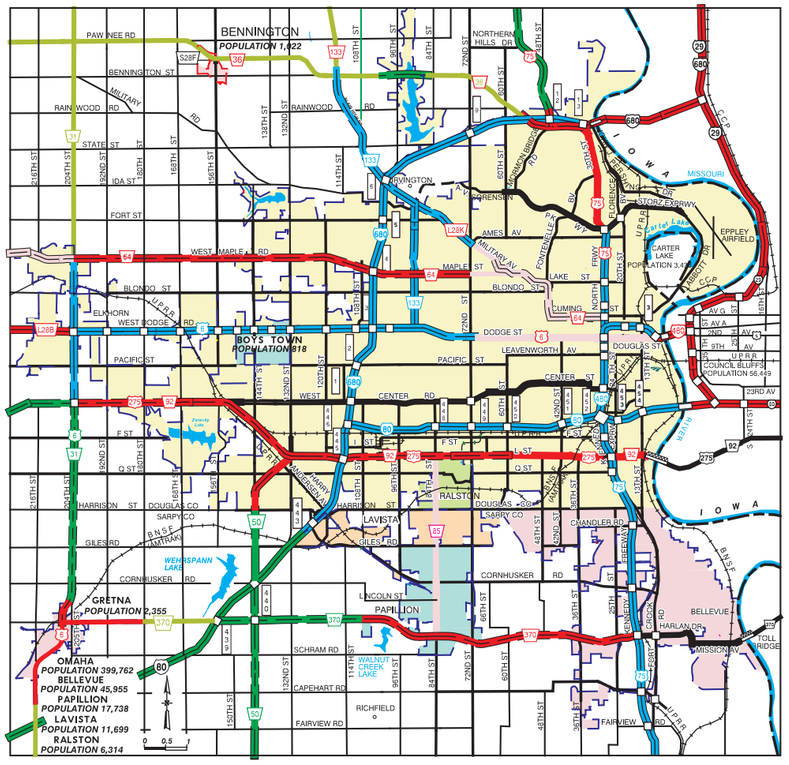
  Bike routes – The Cowboy Trail from Norfolk going west through Region "D", exiting the Region "A" at Neligh.

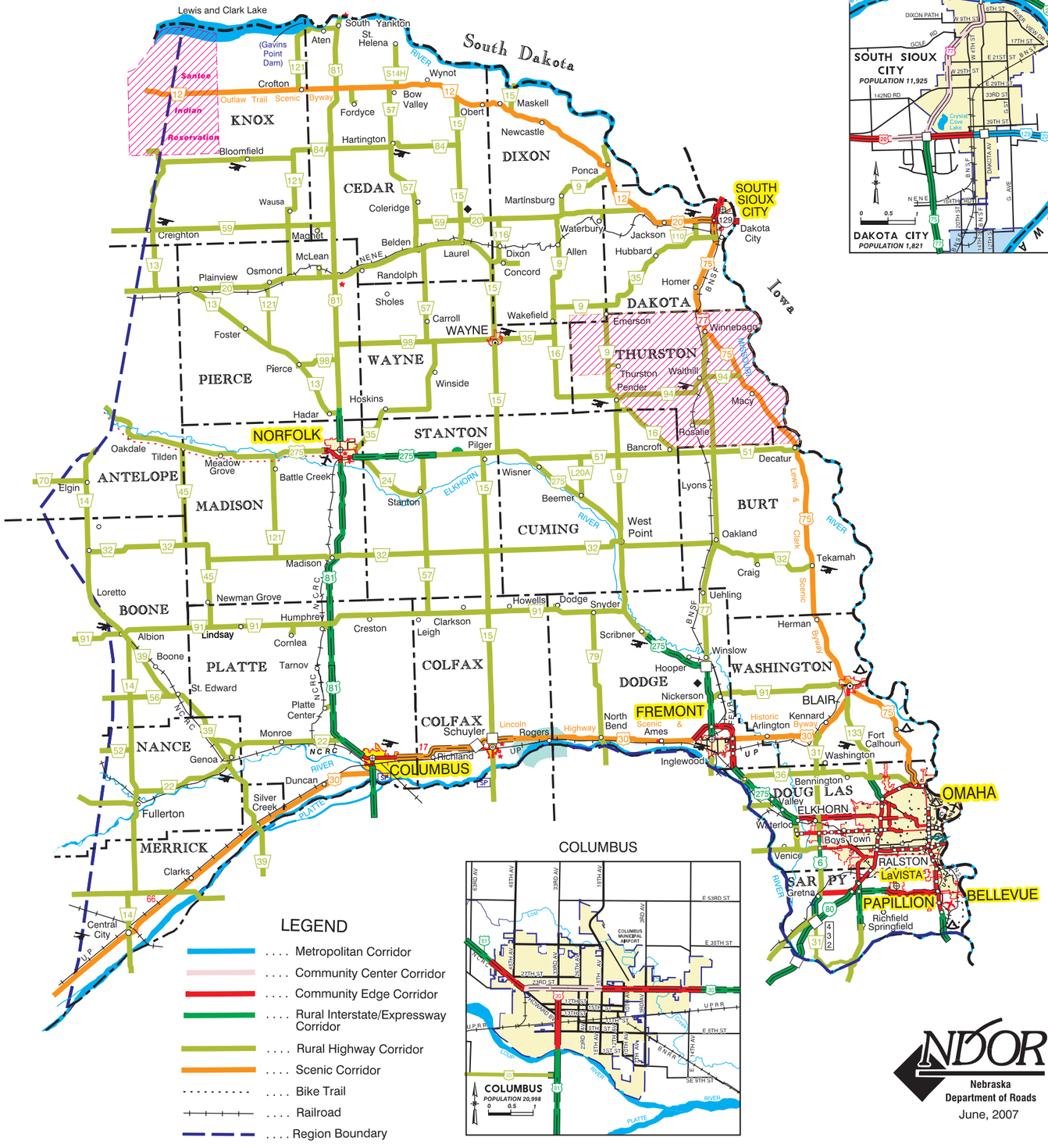
Landscape Region A
Corridor Classification Map



SOUTH SIOUX CITY

OMAHA





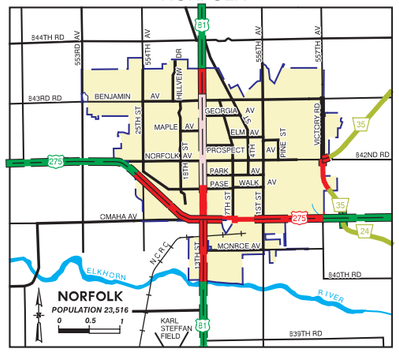
LEGEND

- Metropolitan Corridor
- Community Center Corridor
- Community Edge Corridor
- Rural Interstate/Expressway Corridor
- Rural Highway Corridor
- Scenic Corridor
- Bike Trail
- Railroad
- Region Boundary

COLUMBUS

FREMONT

NORFOLK



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Corridor Objectives – Landscape Region "A"

Metropolitan Corridor:

In Landscape Region "A", this corridor is most prominent in the Omaha Area with another small segment in the South Sioux City area.

Wildlife habitat should not be added into this corridor type. However, in this landscape region, natural wildlife corridors cross through the metropolitan corridors. Adequate space for passage under the roadway right-of-way and directional or containment measures with appropriate plants or other techniques may be needed.

The volume of traffic in this corridor type can generate various pollutants. Future water quality regulations may require innovative design and careful plant selection to accomplish pollutant removal in effective and appropriate ways within the context of this corridor.

I-80 is a major tourist entry point into Nebraska in this region. This will influence the corridor to be welcoming, attractive and provide good awareness of signage for the unfamiliar drivers. Coordination with city offices and concerned groups on long range planning is necessary.

Community Edge and Center Corridors

The potential exists for future regulation of water quality of storm water runoff in these corridors. This may require innovative design and careful plant selection for pollutant removal in effective and appropriate ways to protect the diversity within these corridors.

The local governments often want to accent their community center areas to provide an identity to the motorist and a focus for the community. This is done under a permit to occupy the ROW.

Rural Interstate/Expressway Corridor

Within Landscape Region "A", some portions of this corridor type are also a daily commuter route. Protecting surface and ground water is always a concern in areas crossing wildlife corridors and waterways. Maintaining good water quality will require innovative design and careful plant selection for pollutant removal that is both effective and appropriate to the landscape region.

Rural Highway Corridor

Much of the area adjacent to this corridor is crop ground. The highway corridor gains special importance for wildlife as a passage between habitats and secondarily as habitat itself. This use must be reviewed and taken into account in the landscape design in this landscape region. Selected plantings may be used to improve safer movement for species through these areas and keep them away from the roadways.

Scenic Corridor

Within Landscape Region "A", there are three (3) designated scenic highways.

The overriding landscape objective in these corridors is to preserve the existing views and scenic qualities that brought rise to the scenic designation. All work within these corridors should be in context with the adjacent surroundings.

Screening of objectionable views needs to be strongly considered in this corridor type, along with the framing of special views.

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Typical Plant Species for Use in Landscape Region “A”

The listings to follow are recommendations of native species of plant material currently available for use in this landscape region. This list is expected to broaden as the demand for additional species increases in the future.

Shrubs

Botanical Name	Common Name
*Amelanchier alnifolia**	Saskatoon Serviceberry
Amorpha fruticosa	False Indigo
Cephalanthus occidentalis	Buttonbush
Cornus racemosa	Gray Dogwood
Cornus sericea	Redosier Dogwood
Corylus americana	Hazelnut
Euonymus atropupureus	Wahoo Euonymus
*Juniperus communis**	Common Juniper
Prunus americana	American Plum
*Prunus besseyi**	Western Sandcherry
Prunus virginiana	Common Chokecherry
Rhus trilobata	Skunkbush Sumac
Riloes aureum	Golden Currant
Ribes odoratum	Clove Currant
Rosa arkansas	Arkansas Rose
*Rosa woodsii**	Woods Rose
Salix exigua	Sandbar Willow
Sambucus canadensis	Elderberry
*Shepherdia argentea**	Silver Buffaloberry
Symphoricarpos albus	Common Snowberry
Symphoricarpos occidentalis	Western Snowberry
Symphoricarpos orbiculatus	Coralberry
Viburnum lentago	Nannyberry Viburnum

Trees

Botanical Name	Common Name
Acer negundo	Box Elder
Acer saccharinum	Silver Maple
Catalpa speciosa	Northern Catalpa
Celtis occidentalis	Hackberry
Cercis canadensis (limited use)	Eastern Redbud
Fraxinus pennsylvanica	Green Ash
Gleditsia triacanthos (limited use)	Honey Locust
Gymnocladus dioica	Kentucky Coffeetree
Juglans nigra	Black Walnut
Malus ionensis	Prairie Crabapple
Ostrya virginiana	Eastern Hop Hornbean
*Pinus ponderosa**	Ponderosa Pine
Platanus occidentalis	American Sycamore
Populus deltoides	Eastern Cottonwood

*Used in northwest portion of Landscape Region “A”

Trees *(Continued)*

Botanical Name	Common Name
Prunus serotina	Black Cherry
Quercus alba	White Oak
Quercus macrocarpa	Bur Oak
Quercus muhlenbergii	Chinkapin Oak
Quercus rubra	Northern Red Oak
Quercus velutina	Black Oak
Salix amygdaloides	Peach Leaf Willow
Salix nigra	Black Willow
Tilia americana	Linden
Ulmus americana	American Elm

Grasses

Botanical Name	Common Name
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Sideoats Grama
Bouteloua gracilis	Blue Grama
Bouteloua hirsuta	Hairy Grama
Buckloe dactyloides	Buffalograss
Calamagrostis canadensis	Bluejoint
Calamovilfa longifolia	Prairie Sandreed
Elymus canadensis	Canada Wildrye
Elymus trachycaulus	Slender Wheatgrass
Elymus virginicus	Virginia Wildrye
Eragrostis trichodes	Sand Lovegrass
Koeleria macrantha	Prairie Junegrass
Nassella viridula	Green Needlegrass
Panicum virgatum	Switchgrass
Pascopyrum smithii	Western Wheatgrass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indiangrass
Spartina pectinata	Prairie Cordgrass
Sporobolus heterolepis	Prairie Dropseed

Sedges

Botanical Name	Common Name
Carex brevior	Fescue Sedge
Carex gravida	Heavy Sedge

Legumes

Botanical Name	Common Name
Amorpha canescens	Leadplant
Astragalus canadensis	Canadian Milkvetch
Chamaecrista fasciculata	Partridge Pea
Dalea candida	White Prairie Clover
Dalea purpurea	Purple Prairie Clover
Desmanthus illinoensis	Illinois Bundleflower
Lespedeza capitata	Roundhead Lespedeza

Wildflowers

Botanical Name	Common Name
Achillea millefolium	Yarrow
Anemone canadensis	Canada Anemone
Asclepias incarnata	Swamp Milkweed
Asclepias tuberosa	Butterfly Milkweed
Aster ericoides	White Heath Aster
Aster laevis	Smooth Blue Aster
Aster novae-angliae	New England Aster
Callirhoe involucrata	Purple Poppy Mallow
Cleome serrulata	Rocky Mountain Bee Plant
Ceanothus americansus/herbaceus	New Jersey Tea
Echinacea angustifolia	Black Samson
Erysimum asperum	Western Wallflower
Gaillardia pulchella	Indian Blanket Flower
Helianthus maximiliani	Maximilian Sunflower
Helianthus pauciflorus	Stiff Sunflower
Heliopsis helianthoides	False Sunflower
Liatris aspera	Rough Gayfeather
Liatris lancifolia	Lanceleaf Blazing Star
Liatris punctata	Dotted Blazing Star
Liatris pychnostachya	Thickspike Gayfeather
Linum lewisii	Blue Flax
Monarda fistulosa	Wild Bergamot
Oligoneuron rigidum	Stiff Goldenrod
Penstemon grandiflorus	Shell-leaf Penstemon
Phlox pilosa	Prairie Phlox
Ratibida columnifera	Upright Prairie Coneflower
Ratibida columnifera, red	Mexican Red Hat
Ratibida pinnata	Grayhead Coneflower
Rosa arkansana	Prairie Rose
Rudbeckia hirta	Black-eyed Susan
Redbeckia faciniata	Golden Glow
Senecio plattensis	Prairie Ragwort
Silphium integrifolium	Rosinweed
Silphium laciniatum	Compass Plant
Solidago missouriensis	Missouri Goldenrod
Sphaeralcea coccinea	Scarlet Globemallow
Tradescantia bracteata	Longbract Spiderwort
Verbena hastata	Blue Vervain

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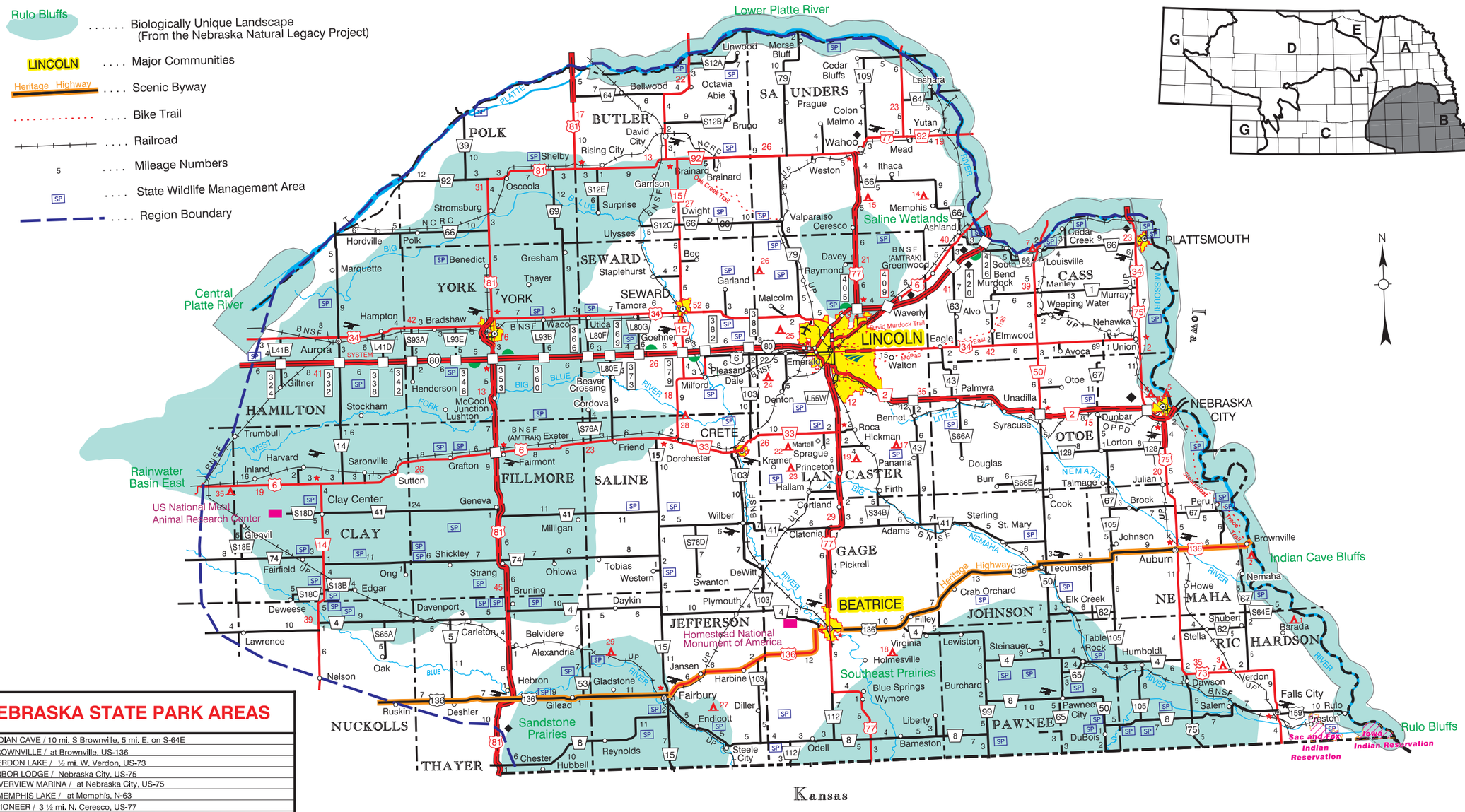
Landscape Region B



NEBRASKA STATE PARK AREAS

- 1. INDIAN CAVE / 10 mi. S Brownville, 5 mi. E. on S-64E
- 2. BROWNVILLE / at Brownville, US-136
- 3. VERDON LAKE / ½ mi. W. Verdon, US-73
- 4. ARBOR LODGE / Nebraska City, US-75
- 5. RIVERVIEW MARINA / at Nebraska City, US-75
- 14. MEMPHIS LAKE / at Memphis, N-63
- 15. PIONEER / 3 ½ mi. N. Ceresco, US-77
- 17. WAGON TRAIN LAKE / 2 mi. E. Hickman
- 18. ROCKFORD LAKE / 7 mi. E. N-4, 2 mi. S. Beatrice
- 19. STAGECOACH LAKE / 1 mi. S., ½ mi. W. Hickman
- 22. BLUESTEM LAKE / 2½ mi. W. Sprague, N-33
- 23. OLIVE CREEK LAKE / 1½ mi. S.E. Kramer
- 24. CONESTOGA LAKE / 2 mi. N. Denton, S-55A
- 25. PAWNEE LAKE / 2 mi. N., 1 ½ mi. W. Emerald, US-6
- 26. BRANCHED OAK LAKE / 3 ½ mi. N. Malcolm, S-55M
- 27. ROCK CREEK STATION SHP & SRA / 6 mi. E. Fairbury
- 28. BLUE RIVER / 5 mi. N. Dorchester, US-6 or N-15
- 29. ALEXANDRIA LAKES / 4 mi. E. Alexandria
- 35. DLD / 3 mi. E. Hastings, US-6

Boundaries (indicated on map) - This region includes all or part of 22 counties: Cass, Otoe, Nemaha, Johnson, Pawnee, Richardson, Lancaster, Saunders, Gage, Butler, Seward, Saline, Jefferson, Thayer, Fillmore, York, Polk, Hamilton, Clay, and small parts of Adams, Nuckolls, and Webster. NDOR District 1 is entirely in this Region as well as a portion of NDOR District 4.

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Description – Region "B"

Environmental Components

- **Climate**
  - Plant hardiness zone – This region is entirely within Zone 5 of the USDA Plant Hardiness Zone Map with a range of annual minimum temperatures between -10 and -20 degrees Fahrenheit.
  - Annual precipitation – Annual precipitation in this region is the highest in the state, ranging from 28" to 36" in the southeast corner. Three-fourths of this precipitation comes between April and September.
- **Landform** – A combination of nearly level to gently rolling glaciated plains and hilly loess plains. Along the Missouri River, the terrain includes bluffs, river terraces and floodplains. Along the Platte River is a broad flat floodplain with scattered sandpits.
- **General soil types** – Region "B" is primarily composed of silt loam with clay subsoil. The Missouri Valley soils are a mix of sand, silt, and clay that are poorly drained in some areas. Rising from the valley are loess hills of highly erodible silt. The hills transition to less silt over clay subsoil. This glacial till (clay) is exposed in some areas and tends to be poorly drained. In the west, the loess mantle is thinner with more clay exposed in the Rainwater Basin.
- **Hydrology**
  - Rivers and streams– Region "B" contains stretches of two major rivers. The Missouri river forms the eastern boundary and is the states largest river. The Platte River is a classic prairie river and marks the northern boundary of this landscape region. A mid-sized, shallow, braided river with sandbars common within the channel. Most of the river floodplain is crop ground with some scattered wet meadows and marshes. Other rivers in the Region include the Big Blue, the Big and Little Nemaha Rivers and a small portion of the Little Blue River. Many streams in this region are degrading and unstable.
  - Wetlands – There are several types of wetlands including saline wetlands and Todd Valley playa. Eastern saline wetland occur within the floodplains of Salt Creek and its tributaries in Lancaster and Saunders Counties. The Todd Valley playas are seasonally and temporarily flooded areas in an ancient valley of the Platte termed the Todd Valley. They include small, clay-lined closed depres-sions located in loess soils.

    Rainwater basins south of the Platte River in the western portion of this region are significant for waterfowl needs.

- **Plant Communities**
  - Herbaceous – Tallgrass prairie remnants occur on some of the bluff tops and west-facing slopes along the Missouri River area. These have been reduced and

degraded by shrub and tree encroachment due to lack of wildfires. Upland tallgrass prairie is dominated by big bluestem, indiangrass, switchgrass and Canada wildrye. Hundreds of species of wildflowers and other forbs contribute to a diverse plant composition. Examples of these include goldenrod, blazing star, sky blue aster and purple coneflower

- Woody – Most native woodlands are deciduous forests of oaks, hickories, basswood and black walnut found along bluffs of the Missouri River. This region has the highest diversity of eastern forest species in the state. Cottonwoods, willows, boxelders and American elm dominate wetter floodplain woodlands in the region. Eastern red cedar is becoming invasive in some areas, especially prairie, pasture, and rangeland areas. Control of seed-producing trees may be necessary in these areas.
- Invasive plants – Bromegrass, Canada thistle, leafy spurge and red cedar are examples of invasive species steadily encroaching on prairie remnants, pastures and the roadsides. Phragmities, tamarix, and Reed's canarygrass are examples of the invasives threatening the stream and river courses, as well as wetlands.
- Protected plants – The following plants are listed in this region as threatened or endangered by state and federal agencies:

  Western Prairie Fringed Orchid (Platanthera praeclara)

  Small White Lady's Slipper Orchid (Cypripedium candidum)

  Saltwort (Salicorna rubra)

  American Ginseng (Panax quinquefolium)

- **Animals** – The following species are listed in this region as threatened or endangered by state and/or federal agencies:

  Southern Flying Squirrel (Glaucomys volans)
  Salt Creek Tiger Beetle (Cicindela nevadica lincolniana)
  Lake Sturgeon (Acipenser fulvescens)
  Pallid Sturgeon (Scaphirhyncus albus)
  Sturgeon Chub (Macrhybopsis gelida)
  Topeka Shiner (Notropis topeka)
  Bald Eagle (Haliaeetus leucocephalus)
  Interior Least Tern (Sterna antillarum althalassos)
  Piping Plover (Charadrius melodus)
  Massasauga (Sistrurus catenatus)
  Scaleshell Mussel (Leptodea leptodon)

- **Biologically Unique Landscapes and Habitats** (as defined in the Nebraska Natural Legacy Project) are areas of the state that have been identified as key habitats that offer the highest likelihood that they will persist over the long term. These areas were selected based on known occurrences of ecological com-munities and at-risk species and offer the best opportunity for conserving the full array of biological diversity in Nebraska. Disturbance to these areas should be minimized. Habitat preservation in the landscape design is highly desirable. Opportunities to enhance and restore critical habitat should be considered in these areas.

Listed here are the Biologically Unique Landscapes that occur in this landscape region:

Lower Platte River - the corridor from approximately the Butler/Saunders county line, east to the mouth at the Missouri River;. Missouri River - the Missouri River channel and floodplain from the confluence with the Platte River, south to the Nebraska/Kansas border; Indian Cave Bluffs - steep bluffs of the Missouri River in Nemaha and Richardson Counties; Rulo Bluffs - Steep bluffs in the southeast corner of Richardson County; Saline Wetlands - the floodplains of Salt Creek, Little Salt Creek and Rock Creek and surrounding uplands, primarily in northern Lancaster County; Sandstone Prairies – this includes the bluffs and breaks along the Little Blue River and Rose Creek in Jefferson and Thayer Counties; Southeast Prairies - rolling hills of western Richardson, Pawnee and southern Johnson and southern Gage Counties. Some prairie remnants are scattered in the region; Rainwater Basin-East – flat-to-gently rolling plains south of the Platte River primarily in Clay, Fillmore, Hamilton, and York Counties.

Sociological Components

- **Area history** – Once covered by tallgrass prairie with scattered oak-hickory forests along the stream valleys in the southeast, over 90% of the region is now used for crop land agriculture or forage for livestock. Many pioneer trails went through this area for the early settlement because of landings along the Missouri River at such locations as Brownville. The land use changes were initiated with this migration and by the Homestead Act.
- **Economic features** – Primarily agriculture with some scattered light manufacturing. Government and education are major economic generators in the Lincoln area.
- **Land use / Ag type** – Predominantly crop land for corn and soybeans. Mostly dry land farming with limited irrigation. Farms continue to become fewer in number and larger. Increased rural residential acreage development around major communities. Scattered livestock pasture. Federal land in this region includes: Homestead National Monument in Gage County and U.S. Meat Animal Research Center in Clay County.

  The sovereign nations of the Sac, Fox, and the Iowa Indian Reservations are in this region. The Ponca Tribe of Nebraska maintains offices and services in this region.
- **Major communities** – Lincoln (State Capitol), Beatrice, Nebraska City, Falls City, Crete, Plattsmouth, Wahoo, York, Seward, and Fairbury. The Ponca Tribe of Nebraska maintains offices and services in this region.

- **Transportation**

  Major highways – include portions of: I-80, N-92, N-2, N-136, US-77, US-75, US-73, N-50, N-15, N-67

  Railroads – Union Pacific, Nebraska Central Railroad Company and Burlington Northern Santa Fe

  Scenic highways – “Heritage Highway” US Highway 136 from Brownville on west, ending in District 7

  Bike routes – Steamboat Trace Trail from Nebraska City to Brownville along the Missouri River; MoPac East Trail from Lincoln, east to Elmwood; Oak Creek Trail from near Brainard to Valparaiso

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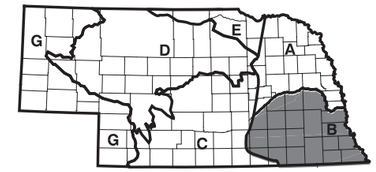
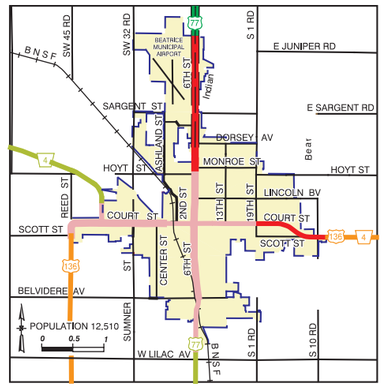
Landscape Region B
Corridor Classification Map

LEGEND

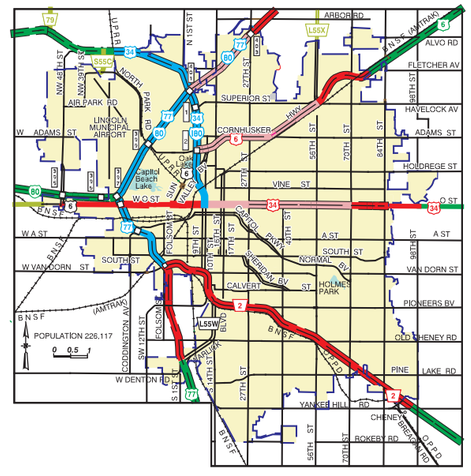
- Metropolitan Corridor
- Community Center Corridor
- Community Edge Corridor
- Rural Interstate/Expressway Corridor
- Rural Highway Corridor
- Scenic Corridor
- Bike Trail
- Railroad
- Region Boundary

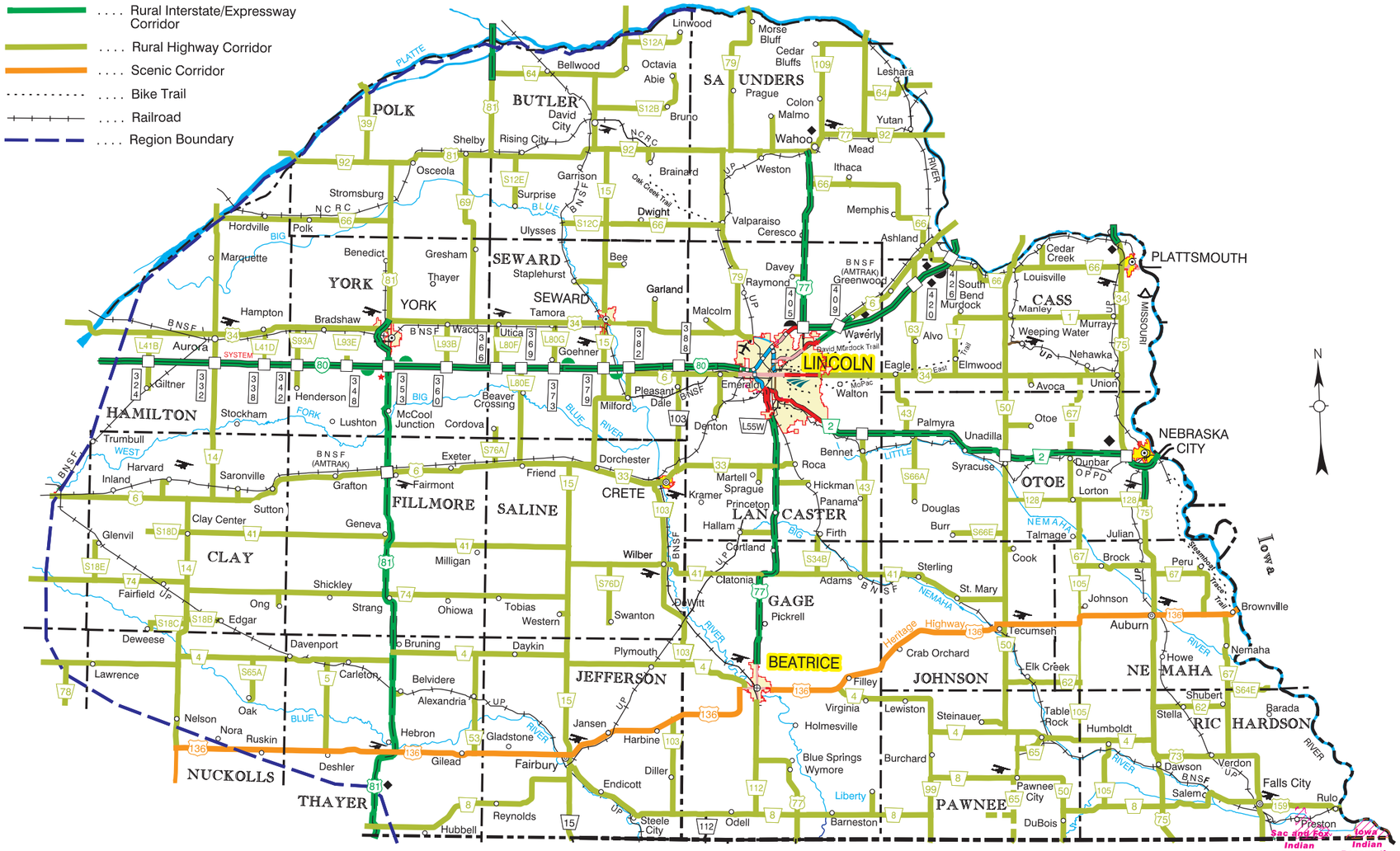


BEATRICE



LINCOLN





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Corridor Objectives - Landscape Region “B” Corridors

Metropolitan Corridor:

Wildlife habitat should not be added into this corridor type. However, in this landscape region, natural wildlife corridors cross through the metropolitan corridors in Lincoln and Beatrice. Salt Creek, Oak Creek and Antelope Creek are such corridors in Lincoln. These areas involve threatened or endangered species, in addition to other wildlife. Appropriate methods to protect these species and maintain separation from the roadways will be needed. In Beatrice, corridors in conjunction with the Big Blue River and the Indian Creek must be considered. Adequate space for passage under the roadway right-of-way and directional or containment measures with appropriate plants or other techniques may be needed.

There is a need to prevent water pollution where the roadway corridor crosses natural wildlife corridors, and especially in the habitat area for the endangered Salt Creek Tiger Beetle.

Community Edge and Center Corridors

Landscape Region “B” may present the greatest diversity in community sizes for this corridor type. The potential exists for future regulation of water quality for stormwater runoff. This will require innovative design and careful plant selection for pollutant removal areas and techniques that are both effective and appropriate to protect the biodiversity of within these areas.

Rural Interstate/Expressway Corridor

Within Landscape Region “B”, this corridor type is also a primary daily commuter route. This is a concern in areas crossing the Platte River because of threatened and endangered species such as the pallid sturgeon in this region. Maintaining good water quality will require innovative design and careful plant selection for pollutant removal areas that are both effective and appropriate to the landscape region.

The Saline Wetlands north of Lincoln along Hwy. 77 are another special area, unique to this region, where pollutant removal from waters entering these wetlands is desirable.

Rural Highway Corridor

Much of the area adjacent to this corridor is crop ground. However, the biologically unique area described as the Southeast Prairies (in the southern part of this region) contains scattered remnants of tall grass prairie. The highway corridor gains special importance for wildlife as a passage between these areas and secondarily as habitat itself. This use must be reviewed and taken into account in the landscape design in this landscape region. Selected plantings may be used to improve safer movement for species specific to these prairie areas and keep them away from the roadways.

Scenic Corridor

Within Landscape Region “B” there is only one designated scenic highway - “Heritage Highway” which is Highway 136 from Brownville, west across the region.

The overriding landscape objective in this corridor type is to preserve the existing views and scenic qualities that brought rise to the scenic designation. All work within this corridor should be in context with the adjacent surroundings. Screening of objectionable views needs to be strongly considered in this corridor type, along with the framing of special views. This portion of Landscape Region “B” has the state’s most diverse selection of native plant material.

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Typical Plant Species for Use in Landscape Region "B"

The listings to follow are recommendations of native species of plant material currently available for use in this landscape region. Region "B" has the largest and most diverse selection of plant species in Nebraska and this list is expected to broaden as the demand for additional species increases in the future.

Shrubs

Botanical Name	Common Name
Amorpha fruticosa	False Indigo
Cephalanthus occidentalis	Buttonbush
Cornus racemosa	Gray Dogwood
Cornus sericea	Redosier Dogwood
Corylus americana	Hazelnut
Euonymus atropurpureus	Wahoo Euonymus
Prunus americana	American Plum
Prunus virginiana	Common Chokecherry
Rhus trilobata	Skunkbush Sumac
Ribes aureum	Golden Current
Ribes odoratum	Clove Currant
Rosa arkansas	Arkansas Rose
Salix exigua	Sandbar Willow
Sambucus canadensis	Elderberry
Symphoricarpos albus	Common Snowberry
Symphoricarpos occidentalis	Western Snowberry
Symphoricarpos orbiculatns	Coralberry
Viburnum lentago	Nannyberry Viburnum

Trees

Botanical Name	Common Name
Acer negundo	Box Elder
Acer saccharinum	Silver Maple
Catalpa speciosa	Northern Catalpa
Celtis occidentalis	Hackberry
Cercis canadensis	Eastern Redbud
Fraxinus pennsylvanica	Green Ash
Gleditsia triacanthos (limited use)	Honey Locust
Gymnocladus dioica	Kentucky Coffeetree
Juglans nigra	Black Walnut
Malus ionensis	Prairie Crabapple
Ostrya virginiana	Eastern Hop Hornbeam
Platanus occidentalis	American Sycamore
Populus deltoides	Eastern Cottonwood
Prunus serotina	Black Cherry
Quercus alba	White Oak
Quercus macrocarpa	Bur Oak
Quercus muhlenbergii	Chinkapin Oak
Quercus rubra	Northern Red Oak

Trees *(Continued)*

Botanical Name	Common Name
Quercus velutina	Black Oak
Salix amygdaloides	Peach Leaf Willow
Salix nigra	Black Willow
Tilia americana	Linden
Ulmus americana	American Elm

Grasses

Botanical Name	Common Name
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Sideoats Grama
Bouteloua gracilis	Blue Grama
Buchloe dactyloides	Buffalograss
Calamagrostis canadensis	Bluejoint
Elymus canadensis	Canada Wildrye
Elymus trachycaulus	Slender Wheatgrass
Elymus virginicus	Virginia Wildrye
Koeleria macrantha	Prairie Junegrass
Panicum virgatum	Switchgrass
Pascopyrum smithii	Western Wheatgrass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indiangrass
Spartina pectinata	Prairie Cordgrass
Sporobolus heterolepis	Prairie Dropseed
Tripsacum dactyloides	Eastern Gamagrass

Sedges

Botanical Name	Common Name
Carex brevior	Fescue Sedge
Carex gravida	Heavy Sedge

Legumes

Botanical Name	Common Name
Amorpha canescens	Leadplant
Astragalus canadensis	Canadian Milkvetch
Chamaecrista fasciculata	Partridge Pea
Dalea candida	White Prairie Clover
Dalea purpurea	Purple Prairie Clover
Desmanthus illinoensis	Illinois Bundleflower
Lespedeza capitata	Roundhead Lespedeza

Wildflowers

Botanical Name	Common Name
Achillea millefolium	Yarrow
Anemone canadensis	Canada Anemone
Asclepias tuberosa	Butterfly Milkweed
Aster laevis	Smooth Blue Aster
Aster novae-angliae	New England Aster
Callirhoe involucrata	Purple Poppy Mallow
Ceanothus americanus/herbacecus	New Jersey Tea
Cleome serrulata	Rocky Mountain Bee Plant
Echinacea angustifolia	Black Samson
Gaillardia pulchella	Indian Blanket Flower
Helianthus maximiliani	Maximilian Sunflower
Helianthus pauciflorus	Stiff Sunflower
Liatris punctata	Dotted Blazing Star
Liatris pschnostachya	Thickspike Gayfeather
Linum lewisii	Blue Flax
Monarda fistulosa	Wild Bergamot
Oligoneuron rigidum	Stiff Goldenrod
Penstemon grandiflorus	Shell-leaf Penstemon
Ratibida columnifera	Upright Prairie Coneflower
Ratibida columnifera, red	Mexican Red Hat
Ratibida pinnata	Grayhead Coneflower
Rosa arkansana	Prairie Rose
Rudbeckia hirta	Black-eyed Susan
Rudbeckia laciniata	Golden Glow
Salvia azuria	Pitcher Sage
Senecio plattensis	Prairie Ragwort
Silphium laciniatum	Compass Plant
Solidago missouriensis	Missouri Goldenrod
Tradescantia bracteata	Longbract Spiderwort
Verbena hastata	Blue Vervain
Vernonia baldwinii	Ironweed

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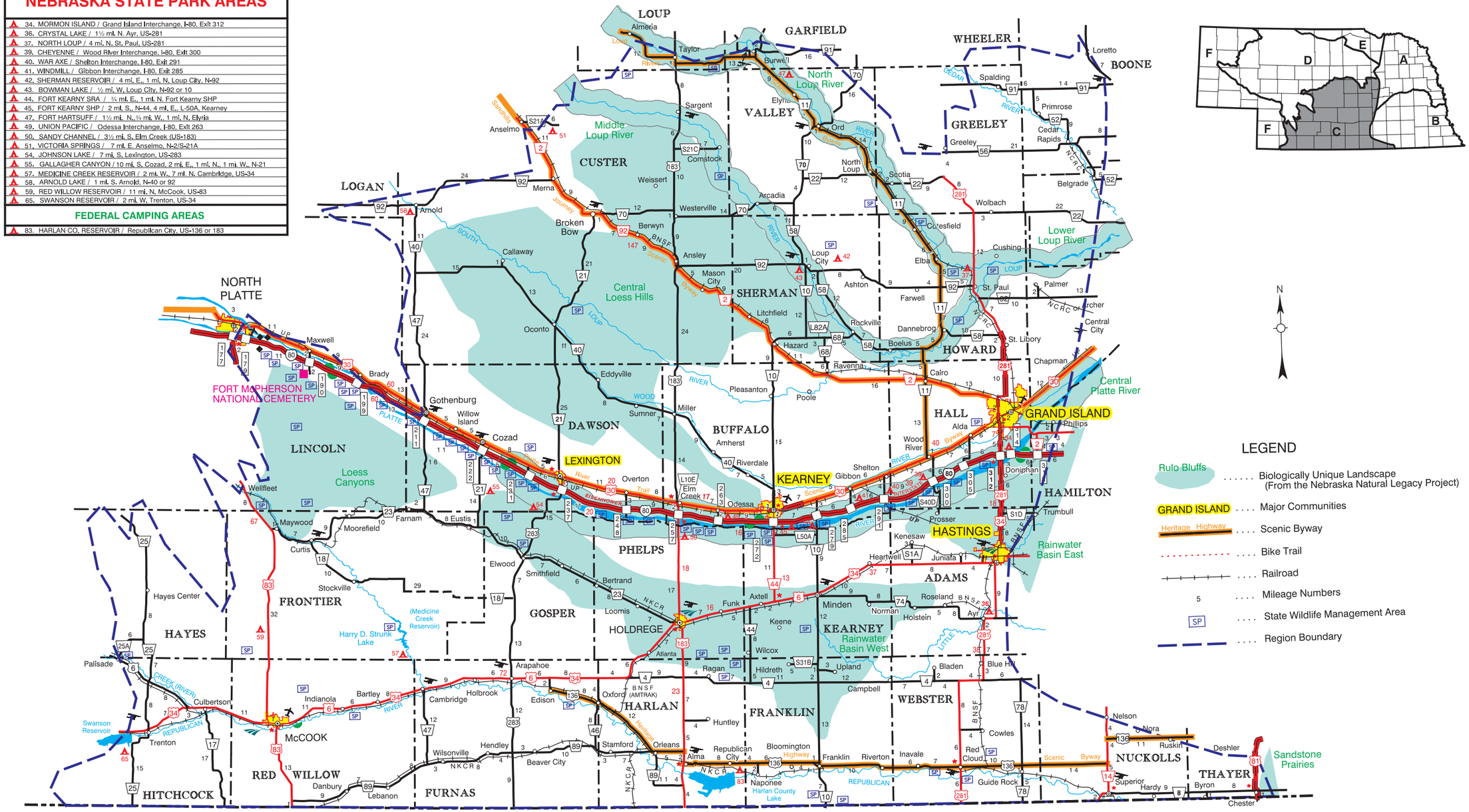
Landscape Region C

NEBRASKA STATE PARK AREAS

- 34. MORMON ISLAND / Grand Island Interchange, I-80, Exit 312
- 36. CRYSTAL LAKE / 1½ mi. N. Ayr, US-281
- 37. NORTH LOUP / 4 mi. N. St. Paul, US-281
- 39. CHEYENNE / Wood River Interchange, I-80, Exit 300
- 40. WAR AXE / Shelton Interchange, I-80, Exit 291
- 41. WINDMILL / Gibbon Interchange, I-80, Exit 285
- 42. SHERMAN RESERVOIR / 4 mi. E., 1 mi. N. Loup City, N-92
- 43. BOWMAN LAKE / ½ mi. W. Loup City, N-92 or 10
- 44. FORT KEARNY SRA / ¼ mi. E., 1 mi. N. Fort Kearny SHP
- 45. FORT KEARNY SHP / 2 mi. S., N-44, 4 mi. E., L-50A, Kearney
- 47. FORT HARTSUFF / 1½ mi. N., ¾ mi. W., 1 mi. N. Elyria
- 49. UNION PACIFIC / Odessa Interchange, I-80, Exit 263
- 50. SANDY CHANNEL / 3½ mi. S. Elm Creek (US-183)
- 51. VICTORIA SPRINGS / 7 mi. E. Anselmo, N-2/S-21A
- 54. JOHNSON LAKE / 7 mi. S. Lexington, US-283
- 55. GALLAGHER CANYON / 10 mi. S. Cozad, 2 mi. E., 1 mi. N., 1 mi. W., N-21
- 57. MEDICINE CREEK RESERVOIR / 2 mi. W., 7 mi. N. Cambridge, US-34
- 58. ARNOLD LAKE / 1 mi. S. Arnold, N-40 or 92
- 59. RED WILLOW RESERVOIR / 11 mi. N. McCook, US-83
- 65. SWANSON RESERVOIR / 2 mi. W. Trenton, US-34

FEDERAL CAMPING AREAS

- 83. HARLAN CO. RESERVOIR / Republican City, US-136 or 183



LEGEND

- Rulo Bluffs ..... Biologically Unique Landscape (From the Nebraska Natural Legacy Project)
- GRAND ISLAND .... Major Communities
- Heritage Highway .... Scenic Byway
- ..... Bike Trail
- ..... Railroad
- 5 .... Mileage Numbers
- SP .... State Wildlife Management Area
- ..... Region Boundary

Boundaries (indicated on map) - Landscape Region C encompasses the south central part of Nebraska and includes all or part of 31 counties: Hitchcock, Hayes, Red Willow, Frontier, Lincoln, Custer, Dawson, Gosper, Furnas, Harlan, Phelps, Kearney, Franklin, Buffalo, Sherman, Valley, Greeley, Howard, Hall, Adams, Webster, Nuckolls, Merrick, Nance, Boone, and small portions of Hamilton, Logan, Loup, Garfield, Wheeler, and Thayer Counties. Portions of NDOR Districts 4, 6, and 7 comprise this region.

NDOR
Nebraska Department of Roads

June, 2007

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Description – Region "C"

Environmental Components

- **Climate**
  - Plant hardiness zone – This region is primarily within Zone 5 of the USDA Plant Material Hardiness Zone Map with a range of annual minimum temperature between -10 to -20 degrees Fahrenheit.
  - Annual rainfall – Considered semi-arid, precipitation ranges from 28 inches per year in the east portion of the region to less than 20 inches in the west.
- **Landform** – The topography consists of nearly level broad plains in the south central part of the Region, gently rolling hills in the north central part of the region, and steep slopes with deeply incised drainages in the southwest portion. The elevation gradually increases from east to west ranging from 1,650 feet to 3,000 feet above sea level. This region is bisected by the broad flat floodplain of the Platte River.
- **General soil types** – Region "C" is characterized by deep loess soils north and south of the Platte River. The loess mantle is deeper north of the river and calcareous with a higher pH than soils south of the river. Some of the state's most erodible soils form the slopes north of the river. The rainwater basin south of the river is poorly designed. The Platte River valley is a poorly drained mix of sand and silt.
- **Hydrology**

  The Ogallala aquifer underlies a large portion of Landscape Region "C". Alluvial aquifers are present along rivers and streams. These aquifers are recharged during high flows and contribute water to streams and rivers during low hydro periods. Artificial groundwater mounds have developed near the surface alongside irrigation delivery channels and downstream of irrigation reservoirs.

  - Rivers and streams – The Platte River bisects Landscape Region "C", running from west to east. The Republican River is the primary river in the southern half of the region. A small portion of the Big and Little Blue Rivers occur in the southeast corner of this region.

    The South Loup, Middle Loup, and North Loup Rivers flow through the northern half of Landscape Region "C". They derive their flow from groundwater discharge out of the southern Sandhills which provide a significant source of summer flow for the Platte River where they meet. The Wood River is also in this part of the region.
  - Wetlands and Lakes – Rainwater basins south of the Platte River in this region and in Region "B" to the east, are significant for waterfowl needs. Central Table Playa wetlands are found north of the Platte River, especially in Custer County. River floodplains provide extensive subirrigated wet meadows and other semi-permanent wetlands. Some Sandhills wetlands are found in the sandy areas close to the Platte and Loup Rivers and are formed where groundwater, intersects the surface.

- **Plant Communities**
  - Herbaceous – This landscape region transitions from the tallgrass prairie on the east to the shortgrass prairie of the west. Prairie hilltops support drought tolerant short grasses such as blue grama and buffalograss, side slopes with species such as side-oats grama, little bluestem, western wheatgrass and sand dropseed. Lower slopes and valleys support tallgrass species such as big bluestem, Indiangrass, switchgrass and Canada wildrye. Hundreds of forbs can occur on good quality sites. Species such as prairie clover, Illinois bundle flower, deer vetch, lead plant, prairie coneflower, stiff sunflower and blazing star are notable examples of these forbs.

    Wet meadows include species such as woolly sedge, spike rush, and prairie cordgrass. Playa wetland contain river bulrush and flatsedge. Riparian wetlands may have an understory of plants such as switchgrass, scouring rush, and bedstraw.

  - Woody – Most tree and shrub areas are found along the watercourses as riparian forest. Cottonwood, green ash, hackberry, and red cedar are the primary trees with shrubs such as roughleaf dogwood, false indigo, and sandbar willow for understory. The eastern edge of the region still has some stands of native bur oak and black walnut. Planted woodlands and shelterbelt plantings are common in the more intensely farmed areas. Eastern red cedar is becoming invasive in some areas, especially prairie, pasture, and rangeland areas in the western part of this region. Control of seed-producing trees may be necessary in these areas.
  - Invasive plants – Bromegrass, Canada thistle, leafy spurge and red cedar are examples of invasive species steadily encroaching on prairie remnants, pastures and the roadsides. Phragmities, tamarix, and Reed's canarygrass are examples of the invasives threatening the stream and river courses, as well as wetlands.
  - Protected plants – The following plants are listed in this region as threatened or endangered by state and/or federal agencies:

    Western Prairie Fringed Orchid (Platanthera praeclara)
    Small White Lady's-Slipper Orchid (Cypripedium candidum)

- **Animals** – The following species are listed in this region, as threatened or endangered by state and/or federal agencies:

River Otter (Lutra canadensis)
Swift Fox (Vulpes velox)
American Burying Beetle (Nicrophorus americanus)
Bald Eagle (Haliaeetus leucocephalus)
Interior Least Tern (Sterna antillarum athalassos)
Whooping Crane (Grus americana)
Piping Plover (Charadrius melodus)

- **Biologically Unique Landscapes and Habitats** (as defined in the Nebraska Natural Legacy Project) are areas of the state that have been identified as key habitats that offer the highest likelihood of persistence over the long term. These areas were selected based on known occurrences of ecological communities and at-risk species and offer the best opportunity for conserving the full array of biological diversity in Nebraska. Disturbance to these areas should be minimized. Habitat preservation in the landscape design is highly desirable. Opportunities to enhance and restore critical habitat should be considered in these areas.

  Listed here are the Biologically Unique Landscapes that occur in this landscape region:

  Central Loess Hills – occurs primarily in Custer County extending to Sherman and Dawson County; Central Platte River – includes the river channel and floodplain of the Platte River in the landscape region; Loess Canyons – occur in the southeast portion of Lincoln County; Lower Loup Rivers – the lower reaches of the Middle Loup River, North Loup River, and the Loup River in the northeast portion of Landscape Region "C"; Platte Confluence – the eastern portion of this area occurs in Lincoln County and includes the land between the North Platte and South Platte Rivers; Rainwater Basin-West – occurs in south central part of this region including primarily portions of Gosper, Phelps, Kearney, and Franklin Counties.

Sociological Components

- **Area history** – This mixed grass prairie of Landscape Region "C" transitions between tallgrass prairie to the east and short grass prairie to the west and Sandhills to the north. European settlement was sparse until the late 1860's with the population rising and falling through periods of adequate rainfall and drought. Center pivot irrigation from the 1970's increased the acreage in crop production, currently about two-thirds of the region, with the remainder in grassland.

- **Economic features** – Crop production is the primary economic activity along with other agricultural related segments. Crane viewing and the beginning development of various outdoor recreational opportunities is an emerging economic feature.

- **Land use/Ag type** – Two-thirds of the land in this region is in crop production with most of the remaining lands in grasslands for livestock. The trend is for fewer but larger farms. Federal lands in this region include: Ft. McPherson National Cemetery in Lincoln County.

- **Major communities** – Grand Island, Kearney, Hastings, Lexington, McCook, and Holdrege.

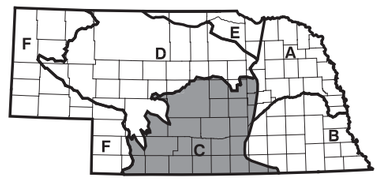
- **Transportation**

  Major highways – portions of US-6 and 34, I-80, N-2, US-83, US-183, US-281.

  Railroads – Nebraska Kansas Colorado Railnet, Burlington Northern Santa Fe Railway, Union Pacific.

  Scenic highways – Heritage Highway US-136 from Edison in Furnas County, east into Landscape Region "B"; Lincoln Highway, US-30 across the entire state. Sandhills Journey, N-2 from Grand Island to Alliance in Landscape Region "D"; and Loup Rivers Byway, N-11/N-91 from Wood River to Dunning in Region "D".

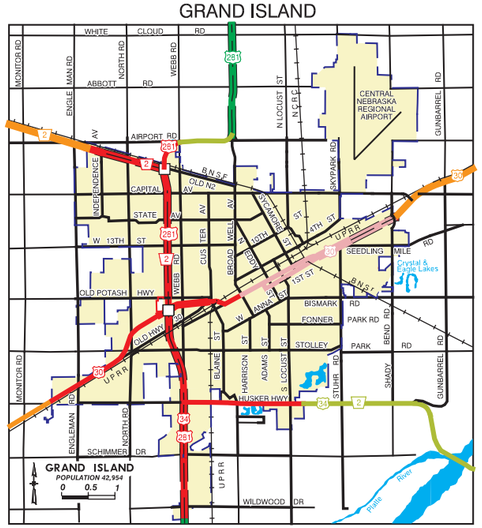
Landscape Region C
Corridor Classification Map



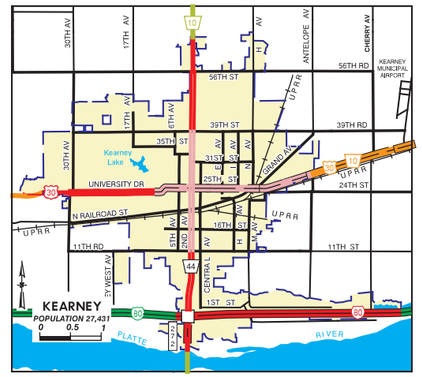
LEGEND

- .... Metropolitan Corridor
- .... Community Center Corridor
- .... Community Edge Corridor
- .... Rural Interstate/Expressway Corridor
- .... Rural Highway Corridor
- .... Scenic Corridor
- .... Bike Trail
- .... Railroad
- .... Region Boundary

GRAND ISLAND

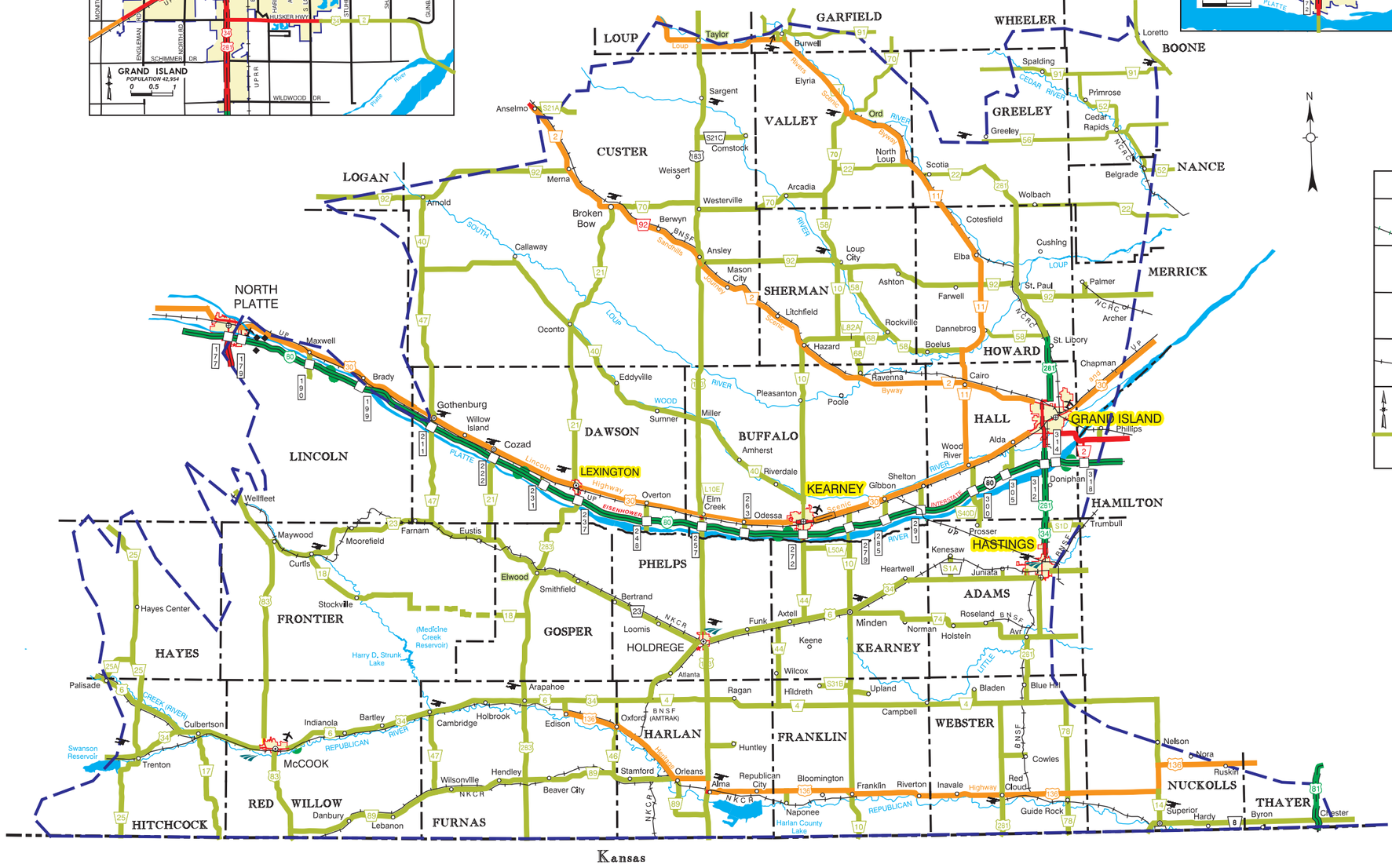


KEARNEY



HASTINGS

LEXINGTON



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Corridor Objectives – Landscape Region "C"

Landscape Region "C" contains a large area of Biologically Unique Landscapes that will influence construction and landscape treatments in this corridor.

Metropolitan Corridor

This corridor type is not used in this region at this time.

Community Edge and Center Corridors

Landscape Region "C" presents a great diversity of communities for these corridor types. The potential for future regulation of water quality from stormwater runoff may be a concern. Traffic calming and maintaining community identity are primary corridor concerns.

Rural Interstate/Expressway Corridor

Within Landscape Region "C" this corridor type runs parallel to the Platte River through a portion of the river that is the primary staging area of the sandhills crane migration. The central Platte River is designated as critical habitat for the threatened and endangered species of whooping cranes and piping plover in this region. This corridor remains the primary long distance and higher travel speed route.

Rural Highway Corridor

Much of the area adjacent to this corridor is crop ground, range land or pasture. The biologically unique landscape described as the Rainwater Basin West (in the southern part of this region) contains scattered wetlands identified as waterfowl habitat important to the annual spring migration of ducks, geese and shorebirds and other species. A second biologically unique landscape described as the Central Loess Hills (in the north central part of this region) is mixed grass prairie with scattered playa wetlands that are used by the whooping cranes during migration. Highways going through these landscapes need to recognize these issues. This highway corridor is also important for wildlife as a passage between these areas and areas of heavier crop use as well as providing some habitat. Selected plantings may be used to improve safer movement for specific species and keep them away from the roadways. Techniques to help prevent monotony and control blowing snow are important in this region for this corridor type.

Scenic Corridor

Within Landscape Region "C" there are portions of 4 designated scenic highways. Each of these routes has a unique character to be maintained

The overriding landscape objective in this corridor type is to preserve the existing views and scenic qualities that brought rise to the scenic designation. All work within these corridors should be in context with the adjacent surroundings.

Screening of objectionable views needs to be strongly considered in this corridor type, along with the framing of special views.

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Typical Plant Species for Use in Landscape Region “C”

The listings to follow are recommendations of native species of plant material for use in this landscape region. This list is expected to broaden as the demand for additional native species increases in the future. Micro-climates within Region “C” strongly influence appropriate locations for shrubs and trees.

Shrubs

Botanical Name	Common Name
Amelanchier alnifolia	Saskatoon Serviceberry
Amorpha fruticosa	False Indigo
*Cornus racemosa**	Gray Dogwood
Cornus sericea	Redosier Dogwood
Juniperus communis	Common Juniper
Prunus americana	American Plum
Prunus besseyi	Western Sandcherry
Prunus virginiana	Common Chokecherry
Rhus trilobata	Skunkbush Sumac
Ribes aureum	Golden Current
Ribes odoratum	Clove Current
Rosa arkansana	Arkansas Rose
Rosa woodsii	Woods Rose
Salix exigua	Sandbar Willow
*Sambucus canadensis**	Elderberry
Shepherdia argentea	Silver Buffaloberry
*Symphoricarpos albus**	Common Snowberry
Symphoricarpos occidentalis	Western Snowberry
*Symphoricarpos orbiculatus**	Coralberry
*Viburnum lentago**	Nannyberry Viburnum

*Indicates limited to very eastern part of Region “C”

Trees

Botanical Name	Common Name
Acer negundo	Boxelder
*Acer saccharinum**	Silver Maple
Celtis occidentalis	Hackberry
Fraxinus pennsylvanica	Green Ash
Gleditsia tricanthos (limited use)*	Honeylocust
*Gymnocladus dioicus**	Kentucky Coffeetree
*Juglans nigra**	Black Walnut
Populus deltoides	Eastern Cottonwood
Populus tremuloides	Quaking Aspen
Quercus macrocarpa	Bur Oak
Salix amygdeloides	Peach Leaf Willow
*Salix nigra**	Black Willow
*Tilia americana**	American Linden
Ulmus americana	American Elm

*Indicates limited to very eastern part of Region “C”

Grasses

Botanical Name	Common Name
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Sideoats Grama
Bouteloua gracilis	Blue Grama
Buchloe dactyloides	Buffalograss
Calamagrostis canadensis	Bluejoint
Calamovilfa longifolia	Prairie Sandreed
Elymus canadensis	Canada Wildrye
Elymus lanceolatus	Thickspike
Elymus trachycaulus	Wheatgrass
Elymus virginicus	Virginia Wildrye
Koeleria macrantha	Prairie Junegrass
Panicum virgatum	Switchgrass
Pascopyrum smithii	Western Wheatgrass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indiangrass
Spartina pectinata	Prairie Cordgrass

Sedges

Botanical Name	Common Name
Carex brevior	Fescue Sedge
Carex gravida	Heavy Sedge

Legumes

Botanical Name	Common Name
Amorpha canescens	Leadplant
Astragalus canadensis	Canadian Milkvetch
*Chamaecrista fasciculata**	Partridge Pea
Dalea candida	White Prairie Clover
Dalea purpurea	Purple Prairie Clover
Desmanthus illinoensis	Illinois Bundleflower
Lespedeza capitata	Roundhead Lespedeza

*No farther west than Buffalo County

Wildflowers

Botanical Name	Common Name
Achillea millefolium	Yarrow
Anemone canadensis	Canada Anemone
Antennaria parvifolia	Pussy-toes
Asclepias tuberosa	Butterfly Milkweed
Aster novae-angliae	New England Aster
Callirhoe involucrata	Purple Poppy Mallow
Cleome serrulata	Rocky Mountain Bee
Echinacea angustifolia	Black Samson
Gaillardia pulchella	Indian Blanket
Gaura coccinea	Scarlet Gaura
Helianthus maximiliani	Maximilian Sunflower
Helianthus pauciflorus	Stiff Sunflower
Liatris lancifolia	Lanceleaf Blazing Star
Liatris punctata	Dotted Blazing Star
Liatris pychnostachya	Thickspike Gayfeather
Linum lewisii	Blue Flax
Monarda fistulosa	Wild Bergamot
Oligoneuron rigidum	Stiff Goldenrod
Penstemon grandiflorus	Shell-leaf Penstemon
Ratibida columnifera	Upright Prairie
Ratibida columnifera	Red Hat
Rosa arkansana	Prairie Rose
Rudbeckia hirta	Black-eyed Susan
Rudbeckia laciniata	Golden Glow
Senecio plattensis	Prairie Ragwort
Solidago missouriensis	Missouri Goldenrod
Sphaeralcea coccinea	Scarlet Globemallow
Tradescantia bracteata	Long Bract Spiderwort
Verbena hastata	Blue Vervain
Vernonia baldwinii	Western Ironweed

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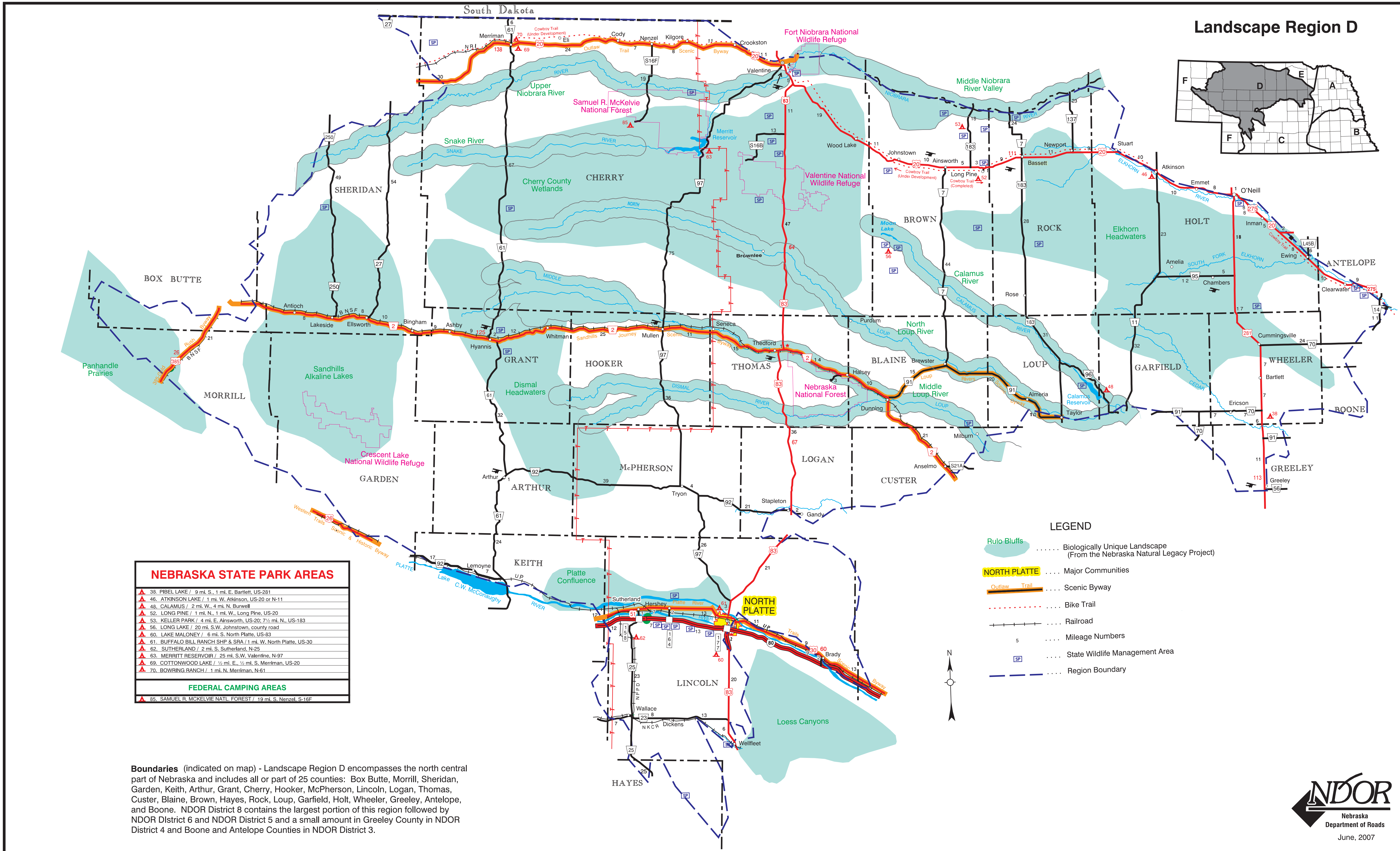

Landscape Region D
South Dakota
BOX BUTTE
MORRILL
SHERIDAN
GARDEN
KEITH
ARTHUR
GRANT
CHERRY
HOOKER
McPHERSON
LINCOLN
LOGAN
THOMAS
BLAINE
BROWN
ROCK
LOUP
CUSTER
HOLT
GARFIELD
WHEELER
GREELEY
ANTELOPE
BOONE
HAYES
Panhandle Prairies
Sandhills Alkaline Lakes
Crescent Lake National Wildlife Refuge
Snake River
Upper Niobrara River
Samuel R. McKelvie National Forest
Cherry County Wetlands
Fort Niobrara National Wildlife Refuge
Valentine National Wildlife Refuge
Middle Niobrara River Valley
Elkhorn Headwaters
Calamus River
North Loup River
Middle Loup River
Dismal Headwaters
Nebraska National Forest
Platte Confluence
Loess Canyons
Merritt Reservoir
Calamus Reservoir
Lake C.W. McConaughy
NORTH PLATTE
LEGEND
Rulo Bluffs . . . . . . Biologically Unique Landscape (From the Nebraska Natural Legacy Project)
NORTH PLATTE . . . . Major Communities
Outlaw Trail . . . . Scenic Byway
. . . . Bike Trail
. . . . Railroad
5 . . . . Mileage Numbers
SP . . . . State Wildlife Management Area
. . . . Region Boundary
NDOR
Nebraska Department of Roads
June, 2007

NEBRASKA STATE PARK AREAS

38. PIBEL LAKE / 9 mi. S., 1 mi. E. Bartlett, US-281
46. ATKINSON LAKE / 1 mi. W. Atkinson, US-20 or N-11
48. CALAMUS / 2 mi. W., 4 mi. N. Burwell
52. LONG PINE / 1 mi. N., 1 mi. W., Long Pine, US-20
53. KELLER PARK / 4 mi. E. Ainsworth, US-20; 7½ mi. N., US-183
56. LONG LAKE / 20 mi. S.W. Johnstown, county road
60. LAKE MALONEY / 6 mi. S. North Platte, US-83
61. BUFFALO BILL RANCH SHP & SRA / 1 mi. W. North Platte, US-30
62. SUTHERLAND / 2 mi. S. Sutherland, N-25
63. MERRITT RESERVOIR / 25 mi. S.W. Valentine, N-97
69. COTTONWOOD LAKE / ½ mi. E., ½ mi. S. Merriman, US-20
70. BOWRING RANCH / 1 mi. N. Merriman, N-61

FEDERAL CAMPING AREAS

85. SAMUEL R. MCKELVIE NATL. FOREST / 19 mi. S. Nenzel, S-16F

Boundaries (indicated on map) - Landscape Region D encompasses the north central part of Nebraska and includes all or part of 25 counties: Box Butte, Morrill, Sheridan, Garden, Keith, Arthur, Grant, Cherry, Hooker, McPherson, Lincoln, Logan, Thomas, Custer, Blaine, Brown, Hayes, Rock, Loup, Garfield, Holt, Wheeler, Greeley, Antelope, and Boone. NDOR District 8 contains the largest portion of this region followed by NDOR DIstrict 6 and NDOR District 5 and a small amount in Greeley County in NDOR District 4 and Boone and Antelope Counties in NDOR District 3.

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Description – Region “D”

Environmental Components

- **Climate**
  - Plant hardiness zone - This region is primarily within Zone 4b of the USDA Plant Materials Hardiness Zone Map with a range of annual minimum temperatures between -20 to -25 degrees Fahrenheit.
  - Annual rainfall – Considered semi-arid, participation ranges from 23 inches per year in the east portion of the region to less than 17 inches in the west.
- **Landform** – A fragile sandy rangeland of undulating fields of grass-stabilized sand dunes. Dunes generally align in a northwesterly to southeasterly direction. In the eastern edge, the dunes transition to flat sandy plains with wet meadows and marshes through Rock, Holt, and Wheeler Counties. A distinct lake area exists in the north central portion of the region where the high water table allows nearly 2,000 scattered small shallow lakes. The western end of this Sandhills region contains a second area of small scattered lakes that are moderate to highly alkaline. The alkaline lakes have limited influence from ground water and are in an area referred to as the “closed basin area” generally devoid of streams.
- **General soil types** – Region “D” consists of sand with very little organic matter. These soils are fragile and highly susceptible to wind erosion. Water erosion is of less concern except where water is concentrated in steep ditches. Clay lenses that pond water are found in the western portion of this region.
- **Hydrology**

  High infiltration rates, up to 10 feet per day, allow rainwater and snowmelt to percolate rapidly downward. Extensive aquifers, up to 900 feet thick, have formed below the Sandhills in gravel deposits. The underground reservoir is part of the Ogallala aquifer.

  - Rivers and streams – Region “D” contains portions of three rivers that have their headwaters outside the region and state. One is the Niobrara River, flowing easterly through the northern Sandhills and forming part of the north boundary with a portion of Region “F”. Seventy-six miles of the Niobrara River are part of the National Wild and Scenic Rivers system from Valentine east to near the Keya Paha/Boyd county line in Region E. The other rivers are the North Platte River and South Platte River that both briefly run easterly through the southern most portion of Region “D”. The Snake River flows east into the Niobrara from its headwaters in the western Sandhills.

    Region “D” is the headwaters for southeasterly flowing streams, such as the North Loup, Calamus, Cedar, Elkhorn, and Dismal Rivers which drain much of the central and eastern Sandhills. Their flows are derived almost entirely from groundwater discharge and little from overland flow. The flow of these rivers is remarkably consistent throughout the year and rarely results in floods or dries out from drought. The Sandhills contain many smaller streams, including the Minnechaduza, Pine, Boardman, and Birdwood Creeks.

- Wetlands and Lakes – The high water table in the north central part of the region has allowed nearly 2,000 shallow lakes and adjacent wetlands to form. Most lakes and wetlands are clustered near stream headwaters. In the western Sandhills, lakes have developed where surface drainage is poor. Sandhill lakes and marshes are generally small and shallow with the greatest depth less than fourteen feet.

  Most Sandhills lakes, marshes, and wet meadows are near neutral pH, but alkaline wetlands and lakes are common in the west where salts and carbonates have accumulated in wetland soils. The Sandhills contain some of the Great Plains' largest fens, groundwater-fed wetlands with peat or muck soils. They are often found at the headwaters of streams and the upper end of Sandhill lakes and marshes where groundwater discharge is abundant.

- **Plant Communities**
  - Herbaceous–The Sandhills contain a variety of native plant communities ranging from wetlands to dry upland prairie. Two principal terrestrial community types are found and both contain certain sparsely vegetated blowouts. Blowouts are wind-excavated depressions that have a unique plant community that includes the endangered blowout penstemon. Through wide-scale efforts to vegetate these sites, fewer blowouts exist today.

    The Sandhills dune prairie community consists of a mixture of sand-adapted grasses including sand bluestem, prairie sandreed, little bluestem, and hairy grama. Typical forbs are stiff sunflower, bush morning glory, and Plains gayfeather.

    The Sandhills dry valley prairie community is found between dunes and has taller prairie grasses including big bluestem, indiangrass, and switchgrass. Forbs include prairie goldenrod, white sage, and prairie coneflower.

    Wet meadows occur in Sandhill valleys supporting vegetation dominated by sedges, spikerushes, prairie cordgrass and switchgrass. Alkaline wet meadows are dominated by inland saltgrass, foxtail barley, alkali sacaton, meadow bluegrass, and scratch grass.

  - Woody – Native woodlands are uncommon in the Sandhills and are found only in fire-protected river valleys and bluffs. Eastern cottonwood, peach leaf willow and coyote willow dominate riparian woodlands along small streams. Small shrubs such as lead plant, yucca, Arkansas rose and western wild rose, as well as native shrub thickets of chokecherry, wild plum, sand cherry, and snowberry occur as distinct inclusions in the Sandhills dune prairie.

    In the northeast and central areas, many deciduous windbreaks have been planted primarily with cottonwood. Some eastern red cedar also was used. Eastern red cedar is becoming invasive in some areas, especially prairie, pasture, and rangeland areas. Control of seed-producing trees may be necessary in these areas.

    The middle Niobrara River Valley contains the largest concentration of woodlands in the Sandhills. Eastern deciduous woodlands containing bur oak, basswood, black walnut, and green ash grow on south-facing bluffs. Cool, moist, spring-fed canyons along the south bluff contain glacial relict woodlands dominated by paper birch and

quaking aspen-trees characteristic of more northern environments. The steep, rocky, north river bluffs supports ponderosa pine dominated woodlands characteristic of the Rocky Mountains. Both Sandhills prairie and northern mixed grass prairie are also found along the bluffs. The Middle Niobrara River Valley has been referred to as a biological crossroads because of the diverse mixture of plant and animal species that are found here.

There are two segments of the Nebraska National Forest in the Sandhills, The Samuel R. McKelvie National Forest located southwest of Valentine and the Nebraska National Forest located at Halsey. These are hand planted ponderosa pine forests in the midst of Sandhill prairie, begun in 1902.

- Invasive plants – Bromegrass, Canada thistle, leafy spurge and red cedar are examples of invasive species steadily encroaching on prairie remnants, pastures and the roadsides. Phragmities, tamarix, and Reed's canarygrass are examples of the invasives threatening the stream and river courses, as well as wetlands.
- Protected plants – The following plants are listed in this region as threatened or endangered by state and/or federal agencies:

  Blowout Penstemon (Penstemon haydenii)
  Western Prairie Fringed Orchid (Platanthera praeclara)
  Small White Lady's-Slipper Orchid (Cypripedium candidum)

- **Animals** – The following species are listed in this region as threatened or endangered by state and/or federal agencies.

American Burying Beetle (Nicrophorus americanus)
Topeka Shiner (Notropis topeka)
Northern Redbelly Dace (Phoxinus eos)
Blacknose Shiner (Notropis heteropis)
Finescale Dace (Phoxinus neogaeus)
Whooping Crane (Grus americana)
Bald Eagle (Haliaeetus leucocephalus)
Interior Least Tern (Sterna antillarum athalassos)
River Otter (Lutra canadensis)
Piping Plover (Charadrius melodus)

- **Biologically Unique Landscapes and Habitats** (as defined in the Nebraska Natural Legacy Project) are areas of the state that have been identified as key habitats that offer the highest likelihood that they will persist over the long term. These areas were selected based on known occurrences of ecological communities and at-risk species and offer the best opportunity for conserving the full array of biological diversity in Nebraska. Disturbance to these areas should be minimized. Habitat preservation in the landscape design is highly desirable. Opportunities to enhance and restore critical habitat should be considered in these areas.

  Listed here are the Biologically Unique Landscapes that occur in this landscape region: Cherry County Wetlands – occurs in Cherry County in the northern Sandhills; Dismal River Headwaters – occurs in west central Sandhills in counties of Cherry, Grant, Arthur, McPherson, and Hooker; Elkhorn River Headwaters – occurs in northern Sandhills and includes large portions of Brown, Rock, Holt, Garfield, and Wheeler Counties; Middle Niobrara River Valley – occurs as a 76 mile reach of the river in Cherry, Keya Paha, Rock, and Brown Counties designated as a National Wild and Scenic River; - Sandhills Alkaline Lakes – occurs in Sheridan, Morrill, and Garden Counties in the Western Sandhills; Snake River – includes the upper reaches of the Snake River from the western end of Merritt Reservoir westward to the stream's headwaters; Upper Loup

Rivers and Tributaries – includes the upper reaches of the Middle Loup, Dismal, North Loup, and Calamus from their headwaters in the central Sandhills, southeastward to where the rivers enter the Loess hills; Panhandle Prairies – mostly in northern Landscape Region "F".

Sociological Components

- **Area history** – This region of grass stabilized sand dunes remains sparsely populated and in a relatively unspoiled natural condition. Considered a desert through the 1850's, early ranchers discovered the potential in rangeland for cattle production and how fragile the area is to overgrazing. Attempts at large-scale crop production through center pivot irrigation in the 1970's was unsuccessful. These areas were reseeded to grasses and 95% of the Sandhills is maintained as grasslands for livestock production.

- **Economic features** – Ranching is the primary economic activity. Nature-based tourism recreation along the Niobrara, Dismal, and Loup Rivers continues to expand.

- **Land use / Ag type** – Dominated by grassland for cattle production. Large amounts of public land in three National Wildlife Refuges, two National Forests, State Wildlife Management areas, State parks.

  Federal lands in this region include: Fort Niobrara National Wildlife Refuge in Cherry County; Samuel R. McKelvie National Forest in Cherry County; Valentine National Wildlife Refuge in Cherry County; Nebraska National Forest in Thomas and Blaine Counties; and Crescent Lake National Wildlife Refuge in Garden County.

- **Major communities** – North Platte, Valentine, Bassett, Mullen, Ainsworth.

- **Transportation**

  Major highways – portions of US-20, N-2, US-83, US-183, N-61, and N-97.

  Railroads – Burlington Northern Santa Fe, Nebkota Railway, Inc.

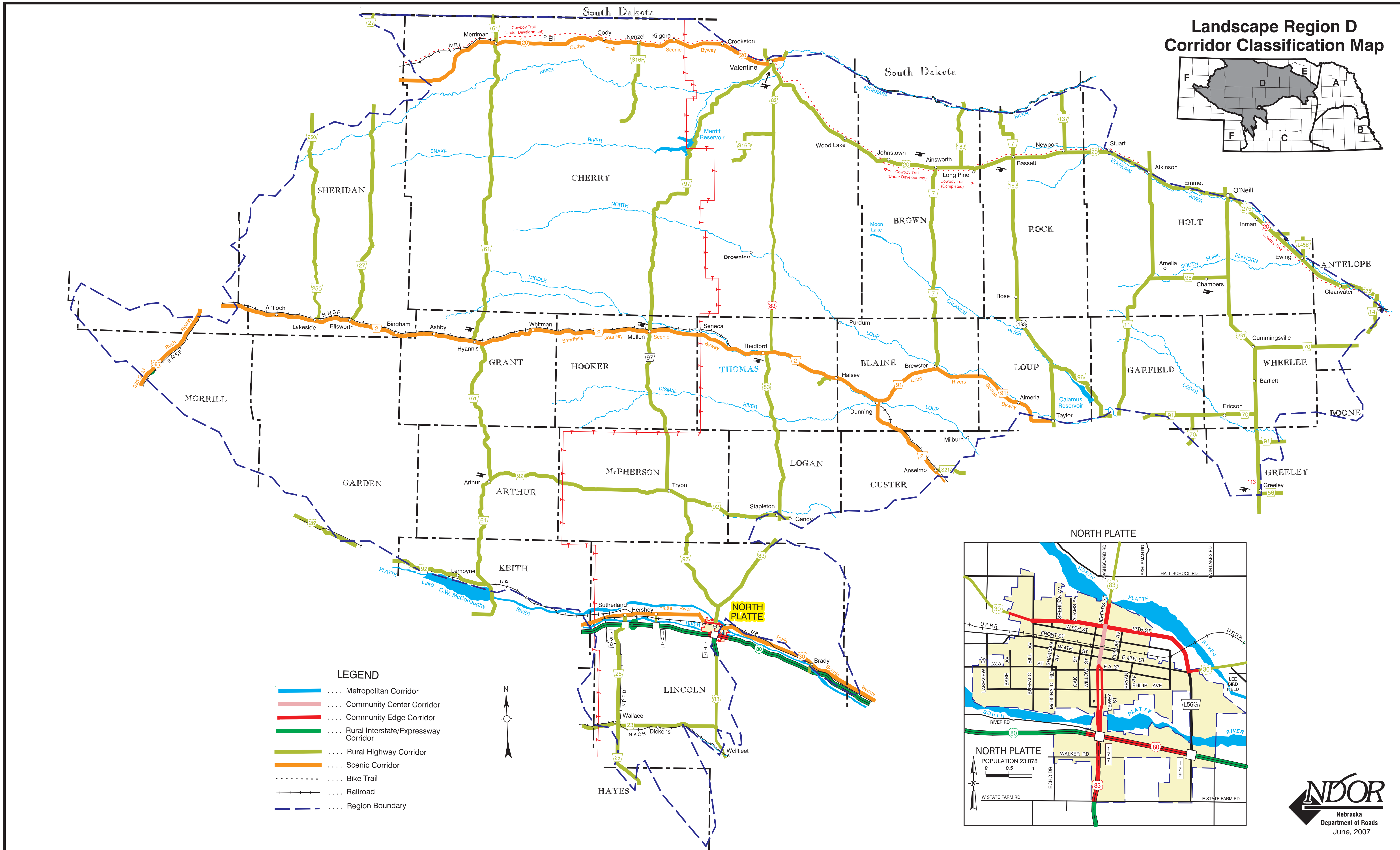
  Scenic highways – "Outlaw Trail Scenic Byway" on US-20 from Valentine west through Cherry County to Gordon in District 5.

  "Sandhills Journey Scenic Byway" along N-2 from Alliance east exiting the Sandhills at Anselmo, continues on to Grand Island.

  "Loup Rivers Scenic Byway" along N-91 from Dunning to Taylor. This byway continues on Highway N-11 outside this region to Wood River in District 4.

  "385 Gold Rush Byway" – a small portion in Morrill County.

  Bike routes – Cowboy Trail, Gordon east through Valentine, exiting the Sandhills at Bassett along US-20.


Landscape Region D
Corridor Classification Map
South Dakota
SHERIDAN
CHERRY
BROWN
ROCK
HOLT
ANTELOPE
MORRILL
GARDEN
GRANT
HOOKER
THOMAS
BLAINE
LOUP
GARFIELD
WHEELER
BOONE
ARTHUR
McPHERSON
LOGAN
CUSTER
GREELEY
KEITH
LINCOLN
HAYES
Valentine
Merriman
Cody
Nenzel
Kilgore
Crookston
Merritt Reservoir
Brownlee
Wood Lake
Johnstown
Ainsworth
Long Pine
Bassett
Newport
Stuart
Atkinson
Emmet
O'Neill
Inman
Ewing
Amelia
Chambers
Clearwater
Rose
Antioch
Lakeside
Ellsworth
Bingham
Ashby
Hyannis
Whitman
Mullen
Seneca
Thedford
Purdum
Halsey
Dunning
Brewster
Almeria
Taylor
Calamus Reservoir
Milburn
Anselmo
Cummingsville
Bartlett
Ericson
Greeley
Arthur
Tryon
Stapleton
Gandy
Lemoyne
Lake C.W. McConaughy
Sutherland
Hershey
NORTH PLATTE
Brady
Wallace
Dickens
Wellfleet
LEGEND
.... Metropolitan Corridor
.... Community Center Corridor
.... Community Edge Corridor
.... Rural Interstate/Expressway Corridor
.... Rural Highway Corridor
.... Scenic Corridor
.... Bike Trail
.... Railroad
.... Region Boundary
NORTH PLATTE
NORTH PLATTE
POPULATION 23,878
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Corridor Objectives – Landscape Region "D"

Landscape Region "D" contains a large number of Biologically Unique Landscapes that will influence construction and landscape treatments in this corridor.

The Metropolitan Corridor

This corridor type is not used in this region at this time.

Community Edge and Center Corridors

The communities in Landscape Region "D" are primarily smaller and often have less defined edge and center areas. Traffic calming should be a major consideration along with maintaining and enhancing the community's unique identity.

Rural Interstate/Expressway Corridor

Within Landscape Region "D" this corridor type runs parallel to the Platte River through the southern most portion of the region.

Rural Highway Corridor

Much of the area adjacent to this corridor is range land or pasture. Almost every highway in this corridor type in this region goes through a biologically unique landscape as shown on the Landscape Region "D" map. This highway corridor is also important for wildlife (plant and animal) as a passage between these biologically unique habitats and secondarily as habitat itself. However, in this region there is much less need of habitat since the adjacent ground has often not been significantly altered by man. Techniques to help prevent monotony and control of blowing snow are both very important in this region for this corridor type.

Scenic Corridor

Within Landscape Region "D" there are portions of 5 designated scenic highways. Each of these routes has a unique character to be maintained

The overriding landscape objective in this corridor type is to preserve the existing views and scenic qualities that brought rise to the scenic designation. All work within these corridors should be in context with the adjacent surroundings.

Screening of objectionable views needs to be strongly considered in this corridor type, along with the framing of special views.

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Typical Plant Species for Use in Landscape Region “D”

The listings to follow are recommendations of native species of plant material for use in the landscape region. This list is expected to broaden as the demand for additional native species increases in the future. Micro-climates within Region “D” strongly influence appropriate locations for shrubs and trees.

Shrubs

Botanical Name	Common Name
Amelanchier alnifolia	Saskatoon Serviceberry
Amorpha fruticosa *	False Indigo
Cornus racemosa *	Gray Dogwood
Cornus sericea	Redosier Dogwood
Juniperus communis	Common Juniper
Prunus americana	American Plum
Prunus besseyi	Western Sandcherry
Prunus virginiana	Common Chokecherry
Rhus trilobata	Skunkbush Sumac
Ribes odoratum	Clove Current
Ribes aureum	Golden Current
Rosa arkansana	Arkansas Rose
Rosa woodsii	Woods Rose
Salix exigua	Sandbar Willow
Sambucus canadensis *	Elderberry
Shepherdia argentea	Silver Buffaloberry
Symphoricarpos albus *	Common Snowberry
Symphoricarpos occidentalis	Western Snowberry
Symphoricarpos orbiculatus *	Coralberry
Viburnum lentago *	Nannyberry Viburnum

* Indicates limited to very eastern part of Region “D”

Trees

Botanical Name	Common Name
Acer negundo	Boxelder
Acer saccharinum *	Silver Maple
Betula papyrifera ○	Paper Birch
Celtis occidentalis	Hackberry
Fraxinus pennsylvanica	Green Ash
Gymnocladus dioicus *	Kentucky Coffeetree
Juglans nigra *	Blackwalnut
Gleditsia tricanthos * *(limited use)*	Honeylocust

○ Species found along Niobrara Valley, meeting of east and west continental plant materials

* Indicates limited to very eastern part of Region “D”

Trees *(Continued)*

Botanical Name	Common Name
Juniperas scopulorum	Rocky Mountain Juniper
Pine ponderosa	Ponderosa Pine
Populus heltoides	Eastern Cottonwood
Populus tremuloides	Quaking Aspen
Quercus macrocarpa	Bur Oak
Salix amygdeloides	Peach Leaf Willow
Salix nigra *	Black Willow
Tilia americana *	American Linden
Ulmus americana	American Elm

○ Species found along Niobrara Valley, meeting of east and west continental plant materials

* Indicates limited to very eastern part of Region “D”

Grasses

Botanical Name	Common Name
Andropogon gerardii	Big Bluestem
Andropogon hallii	Sand Bluestem
Bouteloua curtipendula	Sideoats Grama
Bouteloua gracilis	Blue Grama
Bouteloua hirsuta	Hairy Grama
Calamagrostis canadensis	Bluejoint
Calamovilfa longifolia	Prairie Sandreed
Elymus canadensis	Canada Wildrye
Elymus lanceolatus	Thickspike Wheatgrass
Elymus trachycaulus	Slender Wheatgrass
Elymus virginicus	Virginia Wildrye
Eragrostis trichodes	Sand Lovegrass
Koeleria macrantha	Prairie Junegrass
Nassella viridula	Green Needlegrass
Panicum virgatum	Switchgrass
Pascopyrum smithii	Western Wheatgrass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indiangrass
Spartina pectinata	Prairie Cordgrass
Sporobolus cryptandrus	Sand Dropseed

Sedges

Botanical Name	Common Name
Carex brevior	Fescue Sedge
Carex filifolia	Threadleaf Sedge
Carex inops, ssp. heliophila	Sun Sedge

Legumes

Botanical Name	Common Name
Amorpha canescens	Leadplant
Astragalus canadensis	Canadian Milkvetch
Dalea candida	White Prairie Clover
Dalea purpurea	Purple Prairie Clover
Desmanthus illinoensis	Illinois Bundleflower
*Lespedeza capitata**	Round-head Lespedeza

*Eastern two-thirds of Region “D”

Wildflowers

Botanical Name	Common Name
Achillea millefolium	Yarrow
Anemone canadensis	Canada Anemone
Antennaria parvifolia	Pussy-toes
Argemone polyanthemos	Prickly Poppy
Artemesia ludoviciana	White Sage
Aster laevis	Smooth Blue Aster
Aster novae-angliae	New England Aster
Callirhoe involucrata	Purple Poppy Mallow
Ceanothus americanus/herbaceus	New Jersey Tea
Cleome serrulata	Rocky Mountain Bee Plant
Echinacea angustifolia	Black Samson
Erysimum asperum	Western Wallflower
Helianthus pauciflorus	Stiff Sunflower
Liatris lancifolia	Lanceleaf Blazing Star
Liatris pycnostachya	Thickspike Gayfeather
Liatris squarrosa	Scale Blazing Star
Linum lewisii	Blue Flax
Monarda fistulosa	Wild Bergamot
Oligoneuron rigidum	Stiff Goldenrod
Penstemon grandiflorus	Shell Leaf Penstemon
Ratibida columnifera	Upright Prairie Coneflower
Ratibida columnifera, red	Mexican Red Hat
Rosa arkansana	Prairie Rose
Rudbeckia hirta	Black-eyed Susan
Senecio plattensis	Prairie Ragwort
Solidago missouriensis	Missouri Goldenrod
Sphaeralcea coccinea	Scarlet Globemallow
Tradescantia occidentalis	Prairie Spiderwort
Verbena hastata	Blue Vervain

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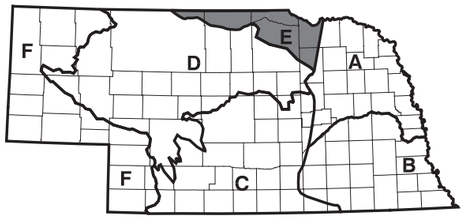
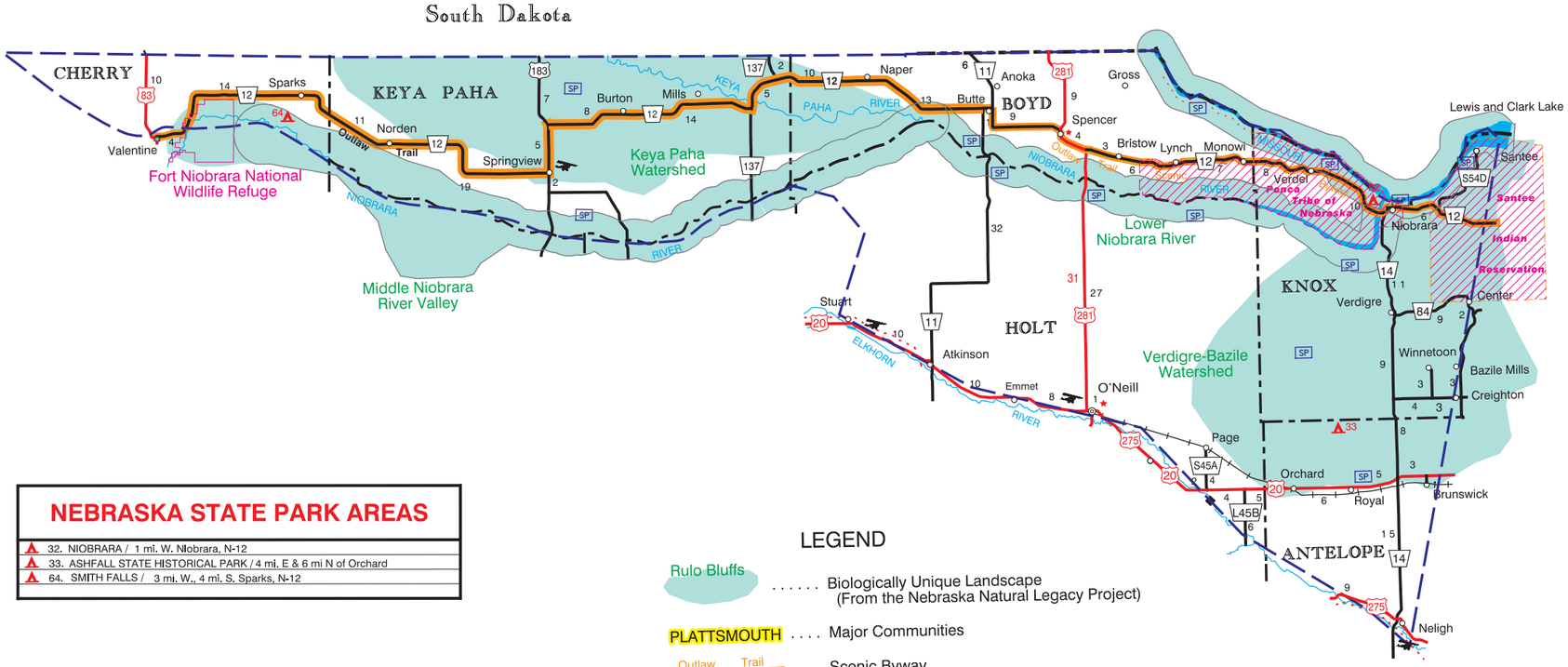
Landscape Region E





NEBRASKA STATE PARK AREAS

32.	NIOBRARA / 1 mi. W. Niobrara, N-12
33.	ASHFALL STATE HISTORICAL PARK / 4 mi. E & 6 mi N of Orchard
64.	SMITH FALLS / 3 mi. W., 4 mi. S. Sparks, N-12

LEGEND

- Rulo Bluffs ..... Biologically Unique Landscape (From the Nebraska Natural Legacy Project)
- PLATTSMOUTH .... Major Communities
- Outlaw Trail .... Scenic Byway
- .... Bike Trail
- .... Railroad
- 5 .... Mileage Numbers
- SP .... State Wildlife Management Area
- .... Region Boundary

Boundaries (indicated on map) - Landscape Region E is in north central Nebraska and includes all or part of six counties: Cherry, Keya Paha, Boyd, Holt, Antelope, and Knox. The major portion of this region is in NDOR District 8 with the eastern portion in the northwest part of NDOR District 3.

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Description – Region “E”

Environmental Components

- **Climate**
  - Plant hardiness zone – 4b of the USDA Plant Materials Hardiness Zone Map with a range of annual minimum temperatures between -20 to -25 degrees Fahrenheit.
  - Annual rainfall – precipitation ranges from 24 inches in the east to less than 20 inches in the west.
- **Landform** – A combination of broad plains in the west and south with desiccated plains in the center and an area of bluffs and escarpments along the Niobrara River which bisects this region.
- **General soil types** – Region “E” is transitional area from the deep silt loams of Region “A” to the sandy soils of Region “D”.

  North of the Niobrara River, soils tend to be silt loam and moderately well-drained near the Missouri confluence, but to the west, they tend to be shallow sands and silt. Weathered sandstone is found in the uplands. Immediately south of the Niobrara are clay soils weathered from shale that is moderately to poorly drained and less stable than soils further south and east where mixed loam is found over sand and gravel.
- **Hydrology**
  - Rivers and streams – The Missouri River forms the northeast border of this region from Lewis and Clark Lake to the South Dakota border. The portion from Niobrara to the South Dakota border is part of the Wild and Scenic River system. The Niobrara River forms the southern border of the west part of Landscape Region “E” and bisects the eastern half of the region. Two segments of the Niobrara are part of the Wild and Scenic River system. These are the segment from the Missouri River to the Boyd/Knox County line and the segment from approximately the Boyd/Keya Paha County line west to Valentine at the Borman Bridge. Other rivers in the region include the Keya Paha River from the South Dakota border into the Niobrara River and the Elkhorn River forming the southern border for the eastern half of the region.
  - Wetlands and Lakes – Wet meadows and wet prairies occur along the river courses.

- **Plant Communities**

○ Herbaceous– This landscape region features mixed grass prairie and is a transition zone between tallgrass prairie to the east and Sandhills prairie to the south and short grass prairie to the west. Prairie hilltops may be dominated by drought-resistant shortgrass species such as blue grama and buffalograss. Sideslopes in many areas contain grasses such as side-oats grama, little bluestem, western wheatgrass, and sand dropseed. Some of the tallgrass prairie species occur on lower slopes and valleys such as big bluestem, indiangrass, switchgrass, Canada wildrye. Many forbs can be mixed in with these grasses.

○ Woody – Woody plants occur along watercourses as riparian forest. Cottonwood, green ash, hackberry, willows, and boxelder may be in the floodplains. Shrubs may include false indigo and rough leaf dogwood. Eastern red cedar is becoming invasive in some areas, especially prairie, pasture, and rangeland areas. Control of seed-producing trees may be necessary in these areas.

The middle Niobrara River valley contains the largest concentration of woodlands in the Sandhills. Eastern deciduous woodlands containing bur oak, basswood, black walnut, and green ash grow on south-facing bluffs. Cool, moist, spring-fed canyons along the south bluff contain glacial relict woodlands dominated by paper birch and quaking aspen, trees characteristic of more northern environments. The steep, rocky, north river bluff supports ponderosa pine dominated woodlands characteristic of the Rocky Mountains. Both Sandhills prairie and northern mixed grass prairie are also found along the bluffs. The Middle Niobrara River Valley has been referred to as a biological crossroads because of the diverse mixture of plant and animal species that are found here.

○ Invasive plants – Bromegrass, Canada thistle, leafy spurge and red cedar are examples of invasive species steadily encroaching on prairie remnants, pastures and the roadsides. Phragmities, tamarix, and Reed's canarygrass are examples of the invasives threatening the stream and river courses, as well as wetlands.

○ Protected plants – The following plant is listed in this region as threatened by state and federal agencies:

Small White Lady's-Slipper Orchid (Cypripedium candidum)

Western Prairie Fringed Orchid (Platanthera praeclara)

- **Animals** – The following species are listed as threatened or endangered by state and/or federal agencies:

  American Burying Beetle (Nicrophorus americanus)
  Northern Redbelly Dace (Phoxinus eos)
  Blacknose Shiner (Notropis heteropis)
  Finescale Dace (Phoxinus neogaeus)
  Whooping Crane (Grus americana)
  Bald Eagle (Haliaeetus leucocephalus)
  Piping Plover (Charadrius melodus)
  Interior Least Tern (Sterna antillarum athalassos)
  Pallid Sturgeon (Scaphirhyncus albus)
  Lake Sturgeon (Acipenser fulvescens)
  Black-Footed Ferret (Mustela nigripes)

- **Biologically Unique Landscapes and Habitats** (as defined in The Nebraska Natural Legacy Project) are areas of the state that have been identified as key habitats that offer the highest likelihood that they will persist over the long term. These areas were selected based on known occurrences of ecological communities and at-risk species and offer the best opportunity for conserving the full array of biological diversity in Nebraska. Disturbance of these areas should be minimized. Habitat preservation in the landscape design is highly desirable. Opportunities to enhance and restore critical habitat should be considered in these areas.

  Listed here are the Biologically Unique Landscapes that occur in this landscape region:

  Keya Paha Watershed – includes the watershed of the Keya Paha River in Holt, Rock, and Brown Counties; Middle Niobrara River Valley – includes a 76-mile reach of the river in Cherry, Keya Paha, Rock, and Brown Counties, designated as a National Wild and Scenic River; Lower Niobrara River – includes the Niobrara River channel and a two-mile wide buffer on each side from central Brown County to its confluence with the Missouri River; Verdigre and Bazile Creek Watershed occupies portions of Knox, Holt, and Antelope Counties.

Sociological Components

- **Area history** – An area of mixed grass prairie, it is a transitional region between the tallgrass and shortgrass prairies. This transition applies to the Niobrara River valley with the meeting of eastern, western, and northern flora and fauna.
- **Economic features** – Crop production and cattle are the primary economic features. Outdoor recreation, especially along the Niobrara, has a potential to become an economic feature in this region.
- **Land use / Ag type** – Crop production and grasslands for livestock.

  Federal lands in this region include: a portion of Fort Niobrara National Wildlife Refuge in Keya Paha and Cherry Counties.
- **Major communities** – O'Neill, Springview, Neligh, and Niobrara.

- **Transportation**

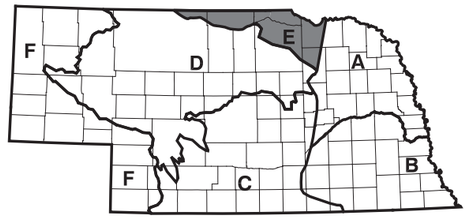
  Major highways – portions of US-20; N-12, US-183; US-281, N-14.

  Railroads – Nebraska Northeastern Railway.

  Scenic highways – "Outlaw Trail Scenic Byway" – N-12 from Valentine East to South Sioux City in Landscape Region "A".

  Bike routes – Cowboy Trail, several portions from Stuart going east and exiting Landscape Region "E" near Neligh.

Landscape Region E
Corridor Classification Map



LEGEND

- Metropolitan Corridor
- Community Center Corridor
- Community Edge Corridor
- Rural Interstate/Expressway Corridor
- Rural Highway Corridor
- Scenic Corridor
- Bike Trail
- Railroad
- Region Boundary

N

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Corridor Objectives – Landscape Region "E"

A large portion of Landscape Region "E" is contained within Biologically Unique Landscapes that will influence construction and landscape treatments in this corridor.

The Metropolitan Corridor

This corridor type is not used in this region at this time.

Community Edge and Center Corridors

The communities in Landscape Region "E" are primarily smaller and often have less defined edge and center areas. Traffic calming should be a major consideration along with maintaining and enhancing the community's unique identity.

Rural Interstate/Expressway Corridor

This corridor type is not used in this region at this time.

Rural Highway Corridor

Much of the area adjacent to this corridor is range land or pasture with limited crop ground. Almost every highway in this corridor type in this region goes through a biologically unique landscape. This highway corridor is also important for wildlife (plant and animal) as a passage between these biologically unique landscapes and secondarily as habitat itself. Techniques to help prevent monotony and control of blowing snow are both very important in this region for this corridor. The Middle Niobrara River Valley is crossed by highways going between in this region and Landscape Region "D". This portion of the river is designated as a National Wild and Scenic River and also recognized as the biological crossroads for the continent, affording many one of a kind occurrences that should be understood and protected when any work is planned in this area.

Scenic Corridor

Within Landscape Region "E" there is one designated scenic highway.

The overriding landscape objective in this corridor type is to preserve the existing views and scenic qualities that brought rise to the scenic designation. All work within this corridor should be in context with the adjacent surroundings.

Screening of objectionable views needs to be strongly considered in this corridor type, along with the framing of special views.

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Typical Plant Species for Use in Landscape Region "E"

The listings to follow are recommendations of native species of plant material for use in the landscape region. This list is expected to broaden as the demand for additional native species increases in the future. Micro-climates within Region "E" strongly influence appropriate locations for shrubs and trees.

Shrubs

Botanical Name	Common Name
Amelanchier alnifolia	Saskatoon Serviceberry
Amorpha fruticosa	False Indigo
*Cornus racemosa**	Gray Dogwood
Cornus sericea	Redosier Dogwood
Juniperus communis	Common Juniper
Prunus americana	American Plum
Prunus besseyi	Western Sandcherry
Prunus virginiana	Common Chokecherry
Rhus trilobata	Skunkbush Sumac
Ribes odoratum	Clove Currant
Ribes aureum	Golden Currant
Rosa arkansana	Arkansas Rose
Rosa woodsii	Woods Rose
Salix exigua	Sandbar Willow
*Sambucus canadensis**	Elderberry
Shepherdia argentea	Silver Buffaloberry
*Symphoricarpos albus**	Common Snowberry
Symphoricarpos occidentalis	Western Snowberry
*Symphoricarpos orbiculatus**	Coralberry
*Viburnum lentago**	Nannyberry Viburnum

Trees

Botanical Name	Common Name
Acer negundo	Boxelder
Acer saccharinum	Silver Maple
Betula papyrifera ○	Paper Birch
Celtis occidentalis	Hackberry
Fraxinus pennsylvanica	Green Ash
Gleditsia triacanthos (limited use)	Honeylocust
Gymnocladus dioica	Kentucky Coffeetree
Juglans nigra	Black Walnut
Pinus ponderosa	Ponderosa Pine
Populus deltoides	Eastern Cottonwood
Populus tremuloides	Quaking Aspen
Quercus macrocarpa	Bur Oak
Salix amygdaloides	Peach Leaf Willow
*Salix nigra**	Black Willow
*Tilia americana**	American Linden
Ulmus americana	American Elm

○ Species found along Niobrara Valley, meeting of east and west continental plant materials

* Indicates limited to very eastern part of Region "E"

Grasses

Botanical Name	Common Name
Andropogon gerardii	Big Bluestem
Andropogon hallii	Sand Bluestem
Bouteloua curtipendula	Sideoats Grama
Bouteloua gracilis	Blue Grama
Buchloe dactyloides	Buffalograss
Calamovilfa longifolia	Prairie Sandreed
Elymus canadensis	Canada Wildrye
Elymus trachycaulus	Slender Wheatgrass
Koeleria macrantha	Prairie Junegrass
Nassella viridula	Green Needlegrass
Panicum virgatum	Switchgrass
Pascopyrum smithii	Western Wheatgrass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indiangrass
Spartina pectinata	Prairie Cordgrass

Sedges

Botanical Name	Common Name
Carex brevior	Fescue Sedge
Carex gravida	Heavy Sedge

Legumes

Botanical Name	Common Name
Amorpha canescens	Leadplant
Astragalus canadensis	Canadian Milkvetch
Chamaecrista fasciculata	Partridge Pea
Dalea candida	White Prairie Clover
Dalea purpurea	Purple Prairie Clover
Desmanthus illinoensis	Illinois Bundleflower
Lespedeza capitata	Roundhead Lespedeza
Psoralea spp.	Scurfpea

Wildflowers

Botanical Name	Common Name
Achillea millefolium	Western Yarrow
Anemone canadensis	Canada Anemone
*Antennaria parvifolia**	Pussy-toes
Argemone polyanthemos	Prickly Poppy
Aster ericoides	White Heath Aster
Aster laevis	Smooth Blue Aster
Aster novae-angliae	New England Aster
Callirhoe involucrata	Purple Poppy Mallow
Cleome serrulata	Rocky Mountain Bee Plant
Echinacea angustifolia	Black Samson

Wildflowers *(Continued)*

Botanical Name	Common Name
Erysimum asperum	Wallflower
Gaillardia pulchella	Indian Blanket Flower
Gaura coccinea	Scarlet Gaura
Helianthus pauciflorus	Stiff Sunflower
Liatris lancifolia	Lanceleaf Blazing Star
Liatris punctata	Dotted Blazing Star
Liatris squarrosa	Scaly Blazing Star
Linum lewisii	Blue Flax
Monarda fistulosa	Wild Bergamot
Oligoneuron rigidum	Stiff Goldenrod
Penstemon grandiflorus	Shell-leaf Penstemon
Ratibida columnifera	Upright Prairie Coneflower
Ratibida columnifera, red	Mexican Red Hat
Rosa arkansana	Prairie Rose
Rudbeckia hirta	Black-eyed Susan
Senecio plattensis	Prairie Ragwort
Solidago missouriensis	Missouri Goldenrod
Sphaeralcea coccinea	Scarlet Globemallow
Tradescantia occidentalis	Prairie Spiderwort
Verbena hastata	Blue Vervain

* or Antennaria neglecta

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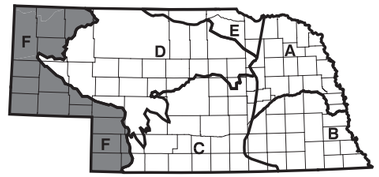
Landscape Region F



LEGEND

- Rulo Bluffs ..... Biologically Unique Landscape (From the Nebraska Natural Legacy Project)
- SCOTTSBLUFF .... Major Communities
- Heritage Highway .... Scenic Byway
- .... Bike Trail
- .... Railroad
- 5 .... Mileage Numbers
- SP .... State Wildlife Management Area
- .... Region Boundary

N

NEBRASKA STATE PARK AREAS

66.	ENDERS RESERVOIR / 5 mi. E., 4½ mi. S. Imperial, US-6/N-61
67.	LAKE OGALLALA / 9 mi. N. Ogallala, N-61
68.	LAKE MCCONAUGHY / 9 mi. N. Ogallala, N-61
	MARTIN BAY/ N. end of Kingsley Dam
	ARTHUR BAY/ 1½ mi. W. Jct. N-92/61
	SANDY BEACH / 4 mi. W. Jct. N-92/61
	LEMOYNE / 7 mi. W. Jct. N-92/61
	OTTER CREEK / 11 mi. W. Jct. N-92/61
	CEDAR VUE / 13 mi. W. Jct. N-92/61
	OMAHA BEACH / 15 mi. W. Jct. N-92/61
	EAGLE CANYON / 15 mi. W. Jct. US-26/N-61
	LAKE VIEW / 7 mi. W. Jct. US-26/N-61
	SPRING BEACH / 9 mi. W. Jct. 92-61
	OGALLALA BEACH / 5 mi. N. Ogallala
71.	ROCK CREEK / 4 mi. N.W. Parks, US-34
72.	CHAMPION MILL / Champion
73.	CHAMPION LAKE / ½ mi. W. Champion, US-6 or S-15A
74.	ASH HOLLOW / ½ mi. E., 3 mi. S. Lewellen, US-26
75.	WALGREN LAKE / 2 mi. E., 3 mi. S. Hay Springs, US-20 or N-87
76.	CHADRON / 9 mi. S. Chadron, US-385
77.	BOX BUTTE RESERVOIR / 9½ mi. N. Hemingford
78.	BRIDGEPORT / at Bridgeport, US-26
79.	FORT ROBINSON / 3 mi. W. Crawford, US-20
80.	LAKE MINATARE / 5 mi. E., 4 mi. N. Scottsbluff or 7 mi. N. Minatare
81.	WILDCAT HILLS / 10 mi. S. Gering, N-71
82.	OLIVER RESERVOIR / 8 mi. W. Kimball on US-30

FEDERAL CAMPING AREAS

86.	PINE RIDGE DIV., NEBR. NATL. FOREST / 7 mi. S. Chadron, US-385
87.	OGLALA NATL. GRASSLAND / 17 mi. N. Crawford, N-2

Boundaries (indicated on map) - Landscape Region F encompasses the western portion of Nebraska and includes all or part of 19 counties: Sioux, Scotts Bluff, Banner, Kimball, Dawes, Box Butte, Morrill, Cheyenne, Sheridan, Garden, Deuel , Keith, Perkins, Chase, Hayes, Dundy, Hitchcock, and a small amount in Lincoln and Cherry. NDOR District 5 encompasses the majority of this region in the panhandle. A small portion is in the southwest corner of NDOR District 6 and the remainder of the region is within the western end of NDOR District 7.

Nebraska Department of Roads
June, 2007

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Description – Region “F”

Environmental Components

- **Climate**
  - Plant hardiness zone – Using the USDA Plant Hardiness Zone Map, Landscape Region “F” covers two zones. The panhandle is zone 4b with a range of annual minimum temperatures from -25 to -20 degrees Fahrenheit. Zone 5a, -20 to -15 degrees Fahrenheit begins in the very southern edge of the panhandle and continues to the south through the southwest corner of the state.
  - Annual rainfall – precipitation ranges from 12 to 17 inches in this region. Humidity is generally very low.
- **Landform** – Landscape Region “F” has dramatic changes in elevation and over relatively short distances contain a high diversity of habitats. Canyons, jagged buttes, pine forests, flat to rolling crop lands and moderate relief rangeland and an area of badlands in the northwest corner occur in this region.
- **General soil types** – Region “F” soils are shallow compared to the loess deposits further east. In the northwest corner, they have weathered in place from local sandstone and siltstone. Clay soils associated with the badlands along and south of the South Dakota border are weathered from shale and exhibit some of the highest shrink-swell potential in the state. Rock outcrops are frequent around the Pine Ridge escarpment and Wildcat Hills. Along the Platte River, coarse silt and sand are the dominant soils. The southern portion of the panhandle is composed of a thin silt loam that is equally susceptible to wind or water erosion. Southwest Nebraska (north of the Republican River) is primarily silt loam but deeper than the area of loess in the panhandle. This area is also vulnerable to wind and water erosion.
- **Hydrology**
  - Rivers and streams – The North Platte River flows southeasterly and bisects the northern portion of Landscape Region “F” known as the Panhandle of Nebraska. The Niobrara and White Rivers are in the north portion of the region. The White River has its origin in northern Sioux County and flows northeast into South Dakota.

    At the southern edge of the panhandle, the South Platte River enters from Colorado and continues east. Further south, Frenchman Creek and the Republican River enter from Colorado and Kansas and flows to the east.
  - Wetlands and Lakes – Naturally occurring playas are found throughout Landscape Region “F,” and are generally only wet during periods of heavy or sustained rains. There are also a number of small creeks which may or may not be wet year round and associated wet meadows and springs.

- **Plant Communities**
  - Herbaceous – Restoring plant communities in Landscape Region "F" is difficult and takes much more time than most other portions of Nebraska. Experience has shown that it may be even more difficult and time consuming than working in Landscape Region "D", the Sandhills. There are two distinct prairie types: shortgrass and mixed grass. Shortgrass prairies are dominated by buffalograss, blue grama, side-oats grama, and purple threeawn. Examples of the more than 100 forb species include milkvetches, scarlet guara, cutleaf ironplant, spine-fruit prickley pear, purple locoweed, slender-flower scurfpea, prairie coneflower.

    The mixed grass prairie is typically dominated by blue grama, prairie sandreed, threadleaf sedge, needle-and-thread grass, little bluestem and western wheatgrass. An example of some of the forbs in this prairie found in the mixed grass prairie include scarlet guana, dotted gayfeather, skeleton plant, cutleaf ironplant, lemon scurfpea, and scarlet globe mallow.

    In the northwest, mixed grass prairie species such as big sagebrush and silver sagebrush may be prominent. The western loess midgrass prairie may have big bluestem, switchgrass and sideoats grama more common. Other forbs may include western ragweed, fringed sage and prairie coneflower.

    There is some dune prairie and sandsage prairie in areas bordering the Sandhills.

    Badlands are mainly unvegetated.

    Western alkaline meadows along the North Platte contain inland saltgrass, alkali sacaton, clustered field sedge, foxtail barley, and meadow bluegrass. Some forbs include spearscale, alkali aster, viscid camphor-daisy, and thelesperma.

  - Woody – The shortgrass prairie does not usually have woody plants. Mixedgrass prairie may have shrubs such as skunkbush sumac, winter fat, fringed sage, snowberry, yucca, and broom snakeweed. Leadplant and sandsage can occur in the western mixed grass prairie. In the dune prairie on the edge of the Sandhills, leadplant, dwarf prairie rose, western poison ivy and yucca may occur.

    Ponderosa pine is the prominent woody species in this region, expectantly throughout the Pine Ridge area and Wildcat Hills. These areas may also include some quaking aspen and green ash. Common shrubs in the understory are Saskatoon serviceberry, dwarf juniper, fragrant sumac and mountain mahagony. Eastern red cedar is becoming invasive in some areas, especially prairie, pasture, and rangeland areas. Control of seed-producing trees may be necessary in these areas.

    Riparian woodlands are dominated by cottonwood and peachleaf willow with green ash, boxelder, Russian olive and junipers. Shrubs such as chokecherry and buffaloberry are also in these areas.

  - Invasive plants – Bromegrass, Canada thistle, leafy spurge and red cedar are examples of invasive species steadily encroaching on prairie remnants, pastures and the roadsides. Phragmities, tamarix, and Reed's canarygrass are examples of the invasives threatening the stream and river courses, as well as wetlands.

- Protected plants – The following plants are listed as threatened or endangered by state and/or federal agencies:

  Ute Lady's Tresses (Spiranthes diluvialis)
  Colorado Butterfly Plant (Gaura neomexicana coloradenis)

- **Animals** – The following species are listed as threatened or endangered by state and/or federal agencies:

  Northern Redbelly Dace (Phoxinus eos)
  Finescale Dace (Phoxinus neogaeus)
  Bald Eagle (Haliaeetus leucocephalus)
  Piping Plover (Charadrius melodus)
  River Otter (Lutra canadensis)
  Black-Footed Ferret (Mustela nigripes)
  Swift Fox (Vulpes velox)
  Mountain Plover (Charadrius montanus)
  Interior Least Tern (Sterna antillarum athalassos)

- **Biologically Unique Landscapes and Habitats** (as defined in The Nebraska Natural Legacy Project) are areas of the state that have been identified as key habitats that offer the highest likelihood that they will persist over the long term. These areas were selected based on known occurrences of econological communities and at-risk species and offer the best opportunity for conserving the full array of biological diversity in Nebraska. Disturbance to these areas should be minimized. Habitat preservation in the landscape design is highly desirable. Opportunities to enhance and restore critical habitat should be considered in these areas.

  Listed here are the Biologically Unique Landscapes that occur in this landscape region:

  Kimball Grasslands – occurs in southwest Kimball County, North Platte River Wetlands – along the North Platte River from Lake McConaughy west to the Wyoming border; Oglala Grasslands – occurs in the northern portion of Sioux County and most of Dawes County with a small portion in northwest Sheridan County; Panhandle Mixedgrass Prairies – occurs in the southern half of Sioux County and portions of Scotts Bluff, Morrill, and Box Butte Counties; Pine Ridge – occurs in portions of Sioux, Dawes, and Sheridan Counties; Upper Niobrara River – occurs in portions of Sioux, Dawes, and Sheridan Counties; Upper Niobrara River – occurs as a two-mile wide buffer on each side of the river from the Wyoming line to Cherry County; Wildcat Hills – two areas, one immediately south of the North Platte River in Scotts Bluff, Banner, and Morrill Counties; Sandsage Prairie – occurs in the southwest corner of Nebraska in Dundy, Chase, Perkins, Hayes, and Hitchcock.

Sociological Components

- **Area history** – Landscape Region "F" has a wide diversity in topography and very limited annual precipitation. The Oregon and Morman Trails crossed the region with prominent landmarks such as Chimney Rock and Scotts Bluff. The 1904 Kincaid Act allowed homesteaders to increase their land claims to 640 acres which made farming less risky and changed cattle ranching. The northern portion of the panhandle has a high percentage of land area in public ownership.

  The Pine Ridge Indian Reservation is in this region.

- **Economic features** – Ranching, sugar beet production, and winter wheat are primary. Nature-based recreation and tourism is the second largest industry in the region at locations like Lake McConaughy, Fort Robinson, Chadron State Park, Oglala National

Grasslands, Toadstool Geologic Park, and both hunting and fishing are a part of the nature-based recreation.

Federal lands in this region include: Oglala National Grassland in Sioux and Dawes County; Toadstool Park in Sioux County; Pine Ridge National Recreation Area in Dawes County; Agate Fossil Beds National Monument in Sioux County; Scotts Bluff National Monument in Scotts Bluff County; North Platte National Wildlife Refuge in Scotts Bluff County; Chimney Rock National Historic Site in Morrill County; Soldier Creek Wilderness in Sioux County; Ponderosa Wildlife area in Dawes County; and Nebraska National Forest in Dawes County.

- **Land use/Ag type** – Nearly half of the crop ground is irrigated in this landscape region. Sugar beets have been a primary crop in these areas with corn on the increase. Dryland crops are winter wheat, dry edible beans and more recently, sunflowers.

  In the northern panhandle, 87 percent of the ground is in grass used for grazing.

  The panhandle has a higher percentage of land area in public ownership than other portions of the state.

- **Major communities** – Scottsbluff, Gering, Alliance, Chadron, Kimball, Sidney, and Ogallala.

- **Transportation**

  Major highways – portion of I-80, US-30, US-34, US-26, US-20, N-71, US-385, N-61.

  Railroads – Burlington Northern Santa Fe, Nebraska Kansas Colorado Railnet, Union Pacific, Dakota, Minnesota & Eastern Railroad Corporation.

  Scenic highways – "Bridges to Buttes Byway" on US-20 from the Wyoming border east to Valentine in Landscape Region "D".

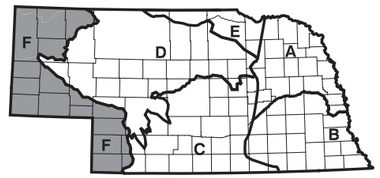
  "385-Gold Rush Byway" – US-385 from the Colorado border to the South Dakota border, completely in this landscape region.

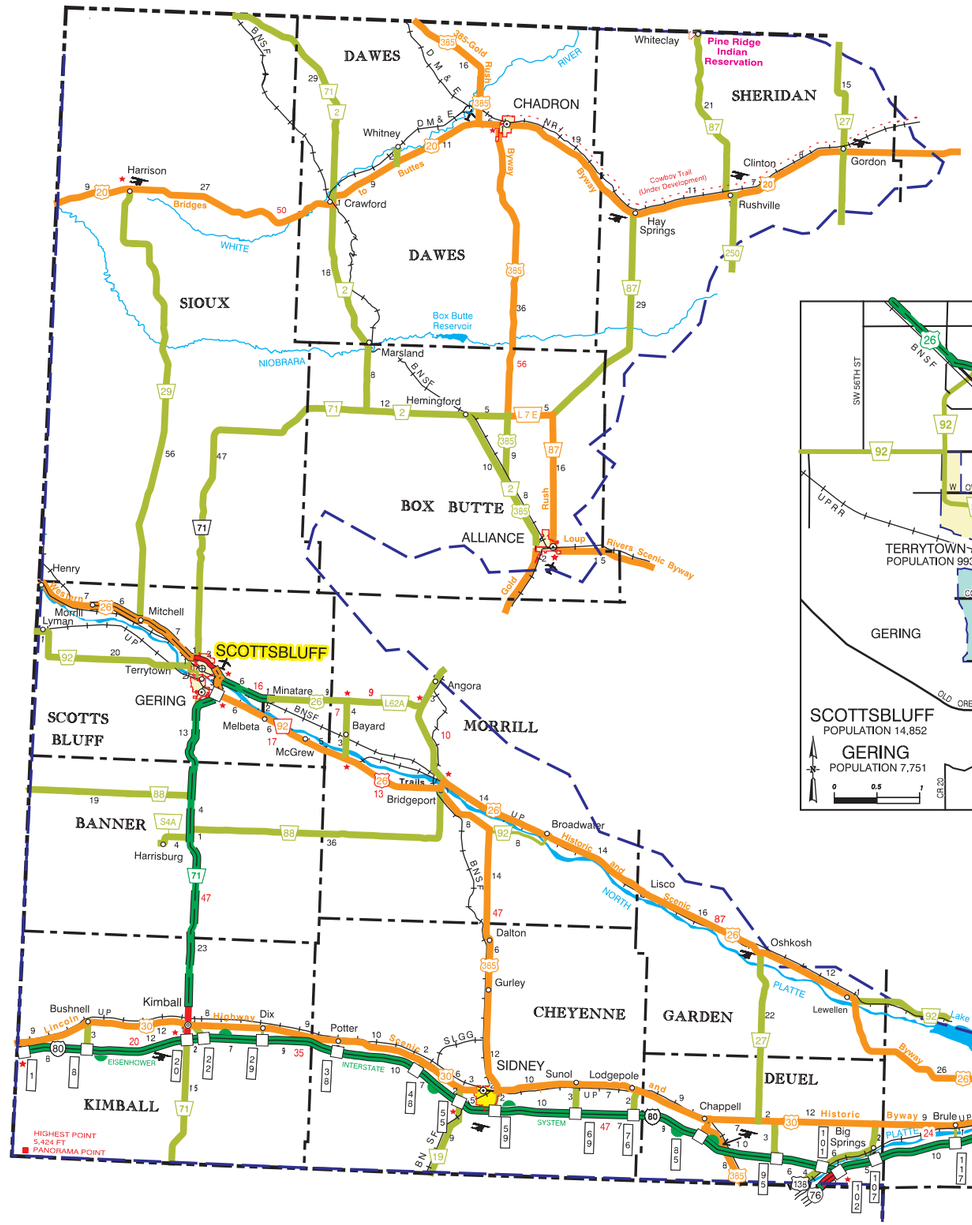
  "Western Trails & Historic Scenic Byway" – N-92/US-26 Wyoming border to Ogallala, completely in this region.

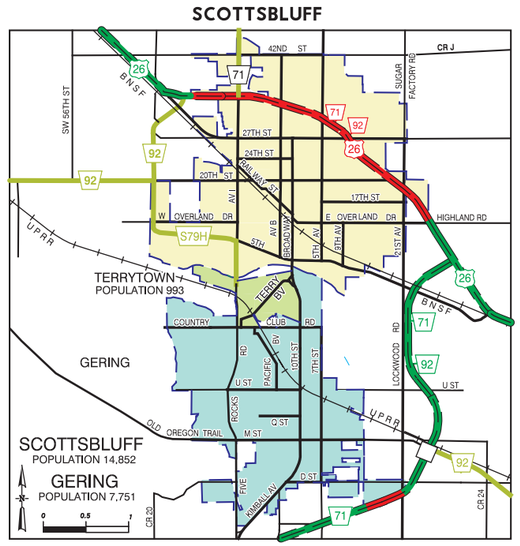
  "Lincoln Highway Scenic & Historic Byway" – the portion of US-30 from the Wyoming border to Ogallala.

  Bike routes – Cowboy Trail – Chadron east, exiting the region east of Gordon.

Landscape Region F
Corridor Classification Map



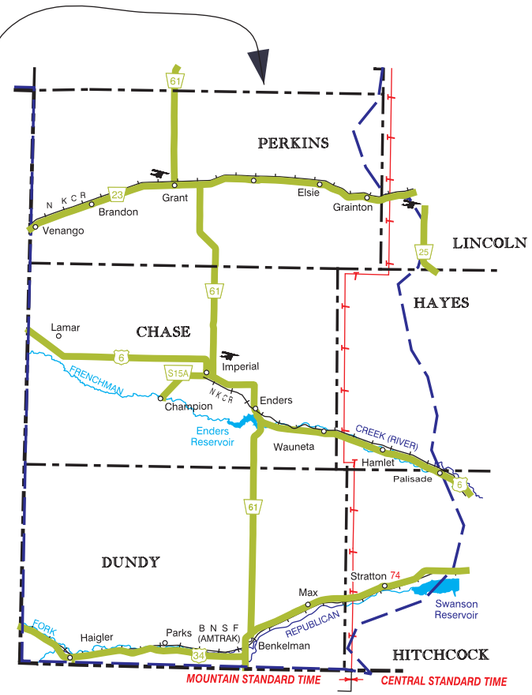




LEGEND

- .... Metropolitan Corridor
- .... Community Center Corridor
- .... Community Edge Corridor
- .... Rural Interstate/Expressway Corridor
- .... Rural Highway Corridor
- .... Scenic Corridor
- .... Bike Trail
- .... Railroad
- .... Region Boundary

N



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Department of Roads

June, 2007

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Corridor Objectives – Landscape Region “F”

Landscape Region “F” contains a large number of Biologically Unique Landscapes that will influence construction and landscape treatments in these corridors.

The Metropolitan Corridor

This corridor type is not used in this region at this time.

Community Edge and Center Corridors

The communities in Landscape Region “F” are primarily smaller and often have less defined edge and center areas. Traffic calming should be a major consideration along with maintaining and enhancing the community’s unique identity.

Rural Interstate/Expressway Corridor

Within Landscape Region “F” this corridor type remains the primary long distance and higher travel speed route containing a high percentage of heavy vehicles. Treatments to help prevent monotony and providing points of interest to improve wayfinding can be addressed.

Rural Highway Corridor

Much of the area adjacent to this corridor is range land in the northern portion with more crop ground and pasture in the southern part of the region. Almost every highway in this corridor type in this region goes through a biologically unique landscape as shown on the Landscape Region “F” map. This highway corridor is also important for wildlife (plant and animal) as a passage between these areas and secondarily as habitat itself. However, in this region there is much less need of habitat since the adjacent ground has often not been significantly altered by man. Unique areas such as the Wildcat Hills, Pine Ridge and the badlands at Toadstool Monument should be treated carefully. Views to Chimney Rock should be preserved and enhanced if possible. Techniques to help prevent monotony and control of blowing snow are both very important in this region for this corridor.

Scenic Corridor

Within Landscape Region “F” there are portions of 6 designated scenic highways. Each of these routes has a unique character to be maintained

The overriding landscape objective in this corridor type is to preserve the existing views and scenic qualities that brought rise to the scenic designation. All work within these corridors should be in context with the adjacent surroundings.

Screening of objectionable views needs to be strongly considered in this corridor type, along with the framing of special views.

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Typical Plant Species for Use in Landscape Region “F”

The listings to follow are recommendations of native species of plant material for use in the landscape region. This list is expected to broaden the demand for additional native species increases in the future. Micro-climates within Region “F” strongly influence appropriate locations for shrubs and trees.

Shrubs

Botanical Name	Common Name
Amelanchier alnifolia	Saskatoon Serviceberry
Atriplex canescens	Fourwing Saltbush
Artemisia cana	Silver Sagebrush
Artemisia tridentata	Big Sagebrush
Cercocarpus montenus	Mountain Mahogany
Cornus sericea	Redosier Dogwood
Juniperus communis	Prostrate Juniper
Prunus americana	American Plum
Prunus besseyi	Western Sandcherry
Prunus virginiana	Common Chokecherry
Rhus trilobata	Skunkbush Sumac
Ribes odoratum	Clove Currant
Ribes aureum	Golden Currant
Rosa arkansana	Arkansas Rose
Rosa woodsii	Woods Rose
Salix exigua	Sandbar Willow
Shepherja argentea	Silver Buffaloberry
Symphoricarpos occidentalis	Western Snowberry

Trees

Botanical Name	Common Name
Acer negundo	Boxelder
Celtis occidentalis	Hackberry
Fraxinus pennsylvanica	Green Ash
Juniperus virginiana	Eastern Red Cedar
Juniperus scopulorum	Rocky Mountain Juniper
Pinus flexilis	Limbar Pine
Pinus ponderosa	Ponderosa Pine
Populus deltoides	Eastern Cottonwood
Populus tremuloides	Quaking Aspen
Quercus gambelii	Gambel Oak
Quercus macrocarpa	Bur Oak
Salix amygdaloides	Peach Leaf Willow
Ulmus americana	American Elm

Grasses

Botanical Name	Common Name
Andropogon gerardii	Big Bluestem
Andropogon hallii	Sand Bluestem
Bouteloua curtipendula	Sideoats Grama
Bouteloua gracilis	Blue Grama
Buchloe dactyloides	Buffalograss
Calamovilfa longifolia	Prairie Sandreed
Elymus canadensis	Canada Wildrye
Elymus lanceolatus	Thickspike Wheatgrass
*Eragrostis trichodes**	Sand Lovegrass*
Koeleria macrantha	Prairie Junegrass
Nassella viridula	Green Needlegrass
Panicum virgatum	Switchgrass
Pascopyrum smithii	Western Wheatgrass
Pseudoroegneria spicata▪	Bluebunch Wheatgrass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indiangrass
Sporobolus crypatandrus	Sand Dropseed

* Limited to Chase, Dundy, and Perkins Counties
▪ Use in Sioux and Dawes Counties

Sedges

Botanical Name	Common Name
Carex brevior	Fescue Sedge
Carex filifolia	Threadleaf Sedge
Carex gravida	Heavy Sedge
*Carex inops, ssp. heliophila**	Sun Sedge

*Limited to Box Butte, Dawes, Sheridan, and Sioux Counties

Legumes

Botanical Name	Common Name
Amorpha canescens	Leadplant
*Astragalus canadensis**	Canadian Milkvetch
Dalea canida	White Prairie Clover
Dalea purpurea	Purple Prairie Clover
Psoralea spp.	Scurfpea

*Use in northern counties in Region “F”

Wildflowers

Botanical Name	Common Name
Achillea millefolium	Yarrow
Anemone canadensis	Canada Anemone
Antennaria parvifolia	Pussy-toes
Argemone polyantheos	Prickly Poppy
Aster ericoides	White Heath Aster
Aster ericoides	White Heath Aster
*Aster laevis**	Smooth Blue Aster*
Callirhoe involucrata	Purple Poppy Mallow
Cleome serrulata	Rocky Mountain Bee Plant
Echinacea angustifolia	Black Samson
Erysimum asperum	Western Wallflower
Gaillardia pulchella	Indian Blanket Flower
Gaura coccinea	Scarlet Gaura
Helianthus pauciflorus	Stiff Sunflower
Liatris lancifolia	Lanceleaf Blazing Star
Liatris punctata	Dotted Blazing Star
Linum lewisii	Blue Flax
Machaeranthera pinnatifida	Cutleaf Ironplant/Lacy Tansyaster
Machaeranthera tanacetifolia	Tansy Aster
Monarda fistulosa	Wild Bergamot
Oligoneuron rigidum	Stiff Goldenrod
*Penstemon grandiflorus**	Shell-leaf Penstemon*
Ratibida columnifera	Upright Prairie Coneflower
Ratibida columnifera, red	Mexican Red Hat
Rosa arkansana	Prairie Rose
Rudbeckia hirta	Black-eyed Susan
Senecio plattensis	Prairie Ragwort
Solidago missouriensis	Missouri Goldenrod
Sphaeralcea coccinea	Scarlet Globemallow
Tradescantia occidentalis	Prairie Spiderwort
Verbena hastata	Blue Vervain

*Use in northern counties in Region “F”

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