



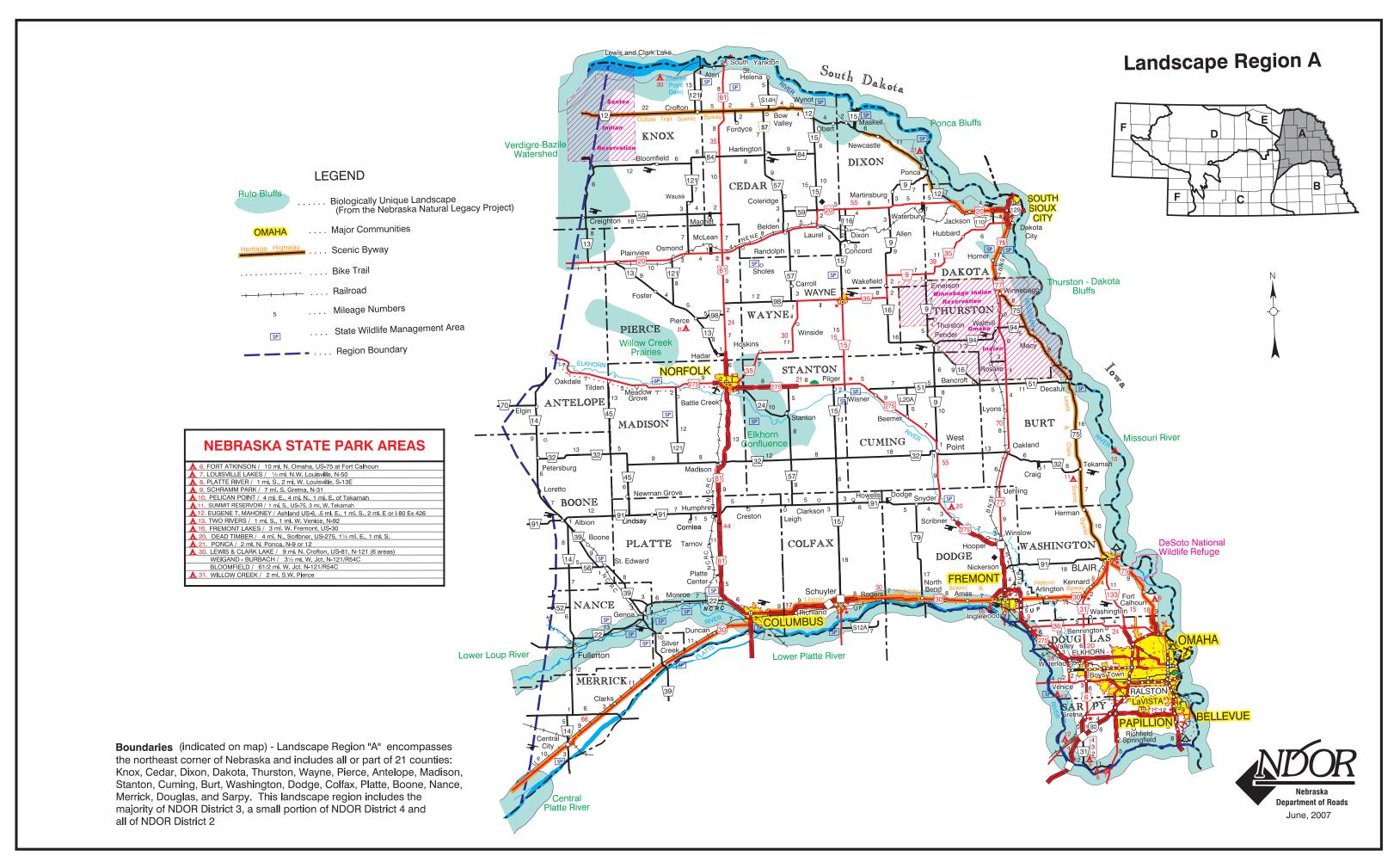






Nebraska Department of Roads

# PLAN FOR THE ROADSIDE ENVIRONMENT



## **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 largest river state's borders with Iowa and South Dakota. The southeastern boundary of Region shares the Platte River as a border Landscape with Region "B".

The Missouri River between South Sioux City and the Gavin's Point Dam is designated as a National Recrea-



tional 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 shrub and tree encroachment due to lack of wildfires. Upland tall grass prairie is dominated by big blue-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 <u>Verdigre-Bazile Watershed</u> portions of Knox and Antelope Counties; <u>Willow Creek Prairies</u> – floodplain of Willow Creek primarily in Pierce County with small parts in Madison and Antelope County; <u>Elkhorn Confluence</u> – the area around the confluence of the North Fork and South Fork of the Elkhorn River in Stanton County; <u>Ponca Bluffs</u> – steep bluffs along the Missouri River in Dakota, Dixon, and Cedar Counties; <u>Thurston-Dakota Bluffs</u> – 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; <u>Lower Loup Rivers</u> – 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 metropolitan 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.

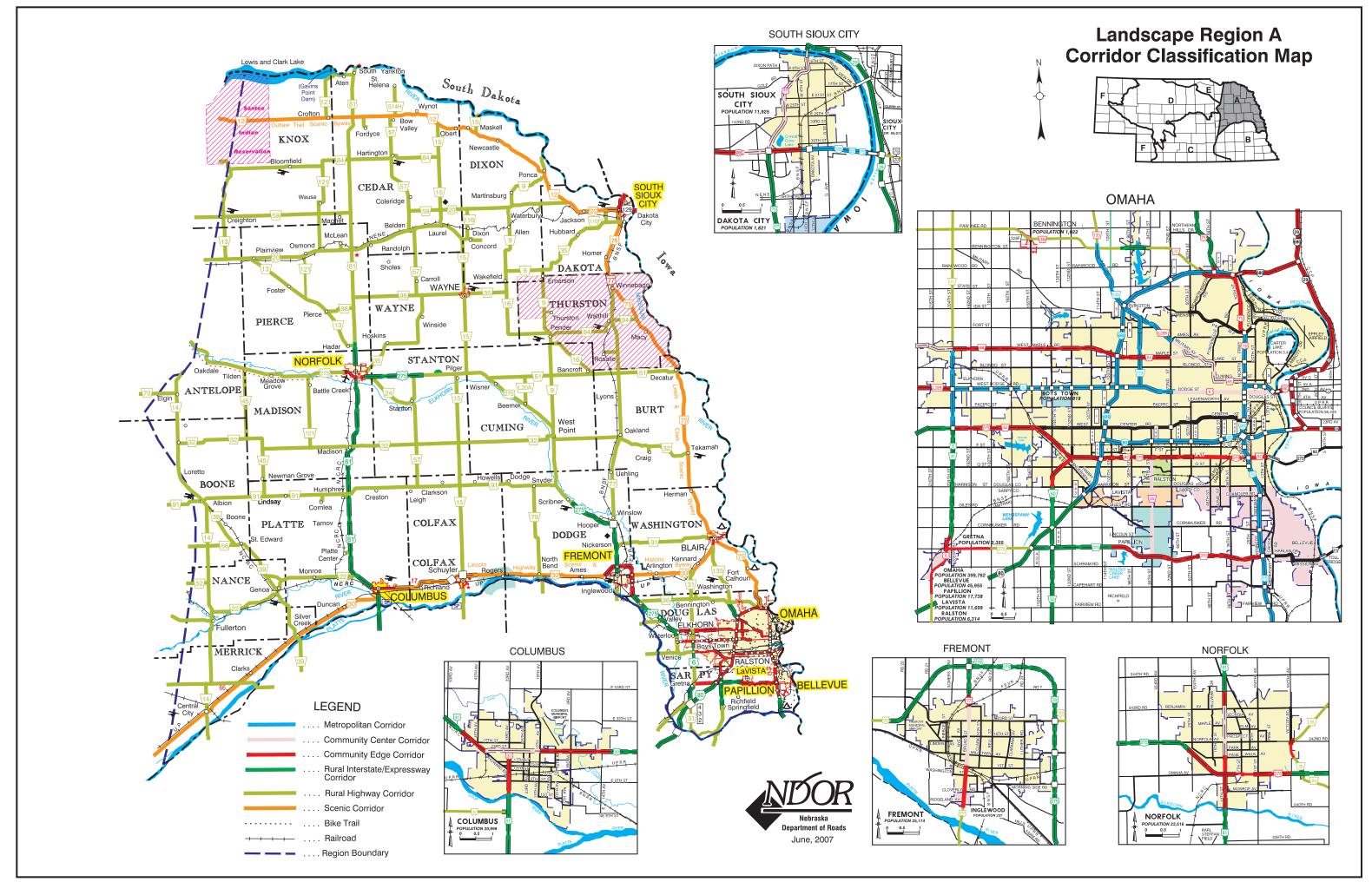
#### • Transportation

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

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

<u>Scenic highways</u> – "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.

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



## **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.

# 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

<sup>\*</sup>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
	Rough Gayfeather
Liatris aspera Liatris lancifolia	Lanceleaf Blazing Star
Liatris punctata	Dotted Blazing Star
Liatris pychnostachya Linum lewisii	Thickspike Gayfeather Blue Flax
Monarda fistulosa	Wild Bergamot
	Stiff Goldenrod
Oligoneuron rigidum	Shell-leaf Penstemon
Penstemon grandiflorus	Prairie Phlox
Phlox pilosa Ratibida columnifera	Upright Prairie Coneflower
Ratibida columnifera, red	Mexican Red Hat
· · · · · · · · · · · · · · · · · · ·	Grayhead Coneflower
Ratibida pinnata	ž
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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