

MASTER PLAN

Executive Summary

SALT VALLEY GREENWAY and PRAIRIE CORRIDOR



31 JULY 2012

EXECUTIVE SUMMARY

INTRODUCTION

Whether a greenway is more urban or rural, more passive recreation than active, more historical than developed, more wildlife than human, etc. it is apparent that greenways serve many purposes. Generally, greenways enhance the quality of life in our communities; promote conservation of the natural environment and instill a sense of connectivity with nature. These benefits are important particularly in the context of an urbanized community. It is practical to consider greenway benefits from two perspectives: the natural resource benefits and the human or community benefits.

The term greenway itself instills “green” imagery such as tree lines and masses, shrubbery, native grasslands, ornamental plantings, etc. These are important components to a greenway, not only because of the images they project, but also based on their functions. Trees, shrubs and grasses are important links providing food and cover for birds, mammals, reptiles and insects. Greenways that are streamside and/or watershed based provide flood protection functions, improve water clarity and quality, improve fish, amphibians and reptile habitat and provide the cross-benefit of improved water recreation.

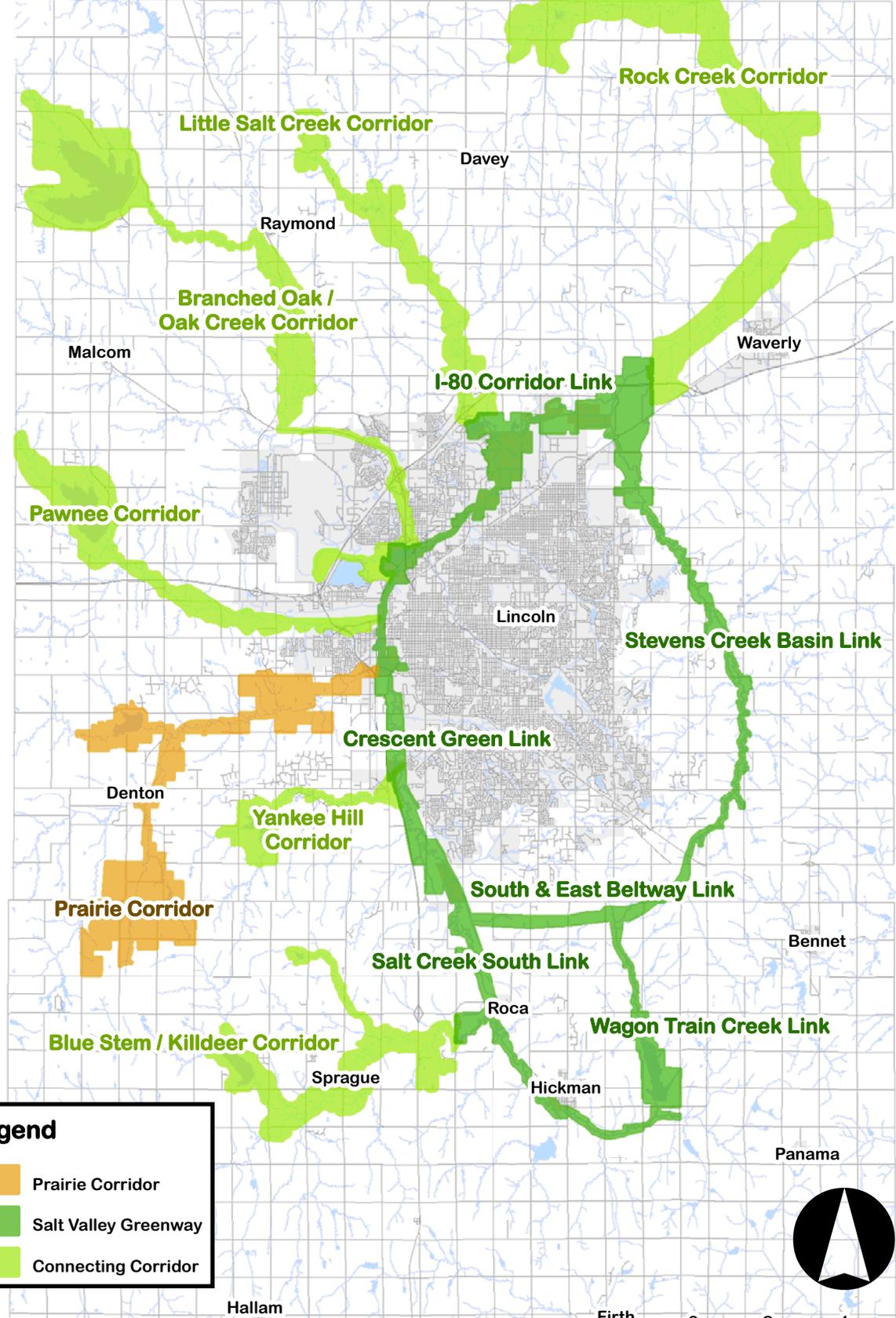
Historical and cultural resources are key elements in the establishment of the heritage of a community. These resources can be preserved and highlighted with greenway planning. Trails that are associated with cultural resources or provide a linkage to a known site or area may include informative kiosks, special signage generating a lively sense of pride in a community.

Elements of greenway planning for the City of Lincoln can be traced back to 1961, where a proposal for a linear park was included in the City’s Comprehensive plan. The “Crescent Green” name was given to the project in 1964 by Mr. Dale Gibbs, a University of Nebraska Architecture professor. The Crescent Green project identified various important elements such as bike trails, open spaces, playfields, and establishment and maintenance/enhancement of wetlands and forests. In 1966 the City purchased what is now Wilderness Park.

The 2040 Lincoln-Lancaster County Plan includes a vision for the Salt Valley Greenway, a ribbon of open space and greenway links within the Salt Valley drainage basin, and the Prairie Corridor on Haines Branch, one of the key connecting green corridors (see Map ES-1). This Master Plan represents that first step in implementation, providing a concept plan for the Salt Valley Greenway and a detailed inventory and plan for the Prairie Corridor. Together, the Greenway and Prairie Corridor embody the three core resource imperatives for Lincoln and Lancaster County identified by the Comprehensive Plan: Stream Corridors, Wetlands, and Native Prairies.



NW 140th St.
 NW 112th St.
 NW 84th St.
 NW 56th St.
 NW 27th St.
 1st St.
 27th St.
 56th St.
 84th St.
 112th St.
 148th St.
 176th St.



Ashland Rd.
 Agnew Rd.
 Davey Rd.
 Raymond Rd.
 Waverly Rd.
 McKelvie Rd.
 Fletcher Av.
 Adams St.
 "O" St.
 Van Dorn St.
 Old Cheney St.
 Yankee Hill Rd.
 Saltillo Rd.
 Wittstruck Rd.
 Martell Rd.
 Stagecoach Rd.
 Olive Creek Rd.
 Pella Rd.

Legend

- Prairie Corridor
- Salt Valley Greenway
- Connecting Corridor



Map ES-1 Salt Valley Greenway and Connecting Corridors

SALT VALLEY GREENWAY



Lancaster County lies almost entirely within the Salt Valley drainage basin, a 1,621 square-mile watershed drained by Salt Creek and numerous tributaries that form the landscape of the county and are an important part of the fabric of the natural and cultural history of Lincoln and Lancaster County. The Salt Valley Greenway wraps around the City of Lincoln and is fed by tributaries that radiate out into the surrounding rolling hills. The effect is that of a large loop primarily made up of Salt Creek and Stevens Creek, with connecting green corridors linking urban and rural areas. The Salt Valley Greenway provides two primary functions; protection of natural, cultural and scenic resources and a link between these resources and people.

The Salt Valley Greenway includes an abundance of natural resources. Of all these resource categories, three are distilled and identified as core resources: saline and freshwater wetlands, native prairies and stream corridors. The strength of the diversity of the resource categories further solidifies the goals set forth by the greenway plan. This diversity is evident in numerous factors: varying topography, unique interior saline soils and saline groundwater at the surface, freshwater wetlands, grasslands and virgin prairie and distinctive species of both plants and animals. One of the overall goals of the greenway plan, and a guiding principle of LPlan 2040, is to preserve and consider these resources while considering policy and development decisions. The natural resources within the Salt Valley drainage basin along with research on riparian buffer width guided the refinement of the greenway as defined by the Comprehensive Plan 2040. Map ES-2 shows these resources and highlights where they are predominant within the greenway and its connecting corridors.



Connecting corridors follow tributary streams and tie natural resource features and public areas outside the main loop of Salt Creek and Stevens Creek back to the Salt Valley Greenway. LPlan 2040 identifies the following connecting green corridors:

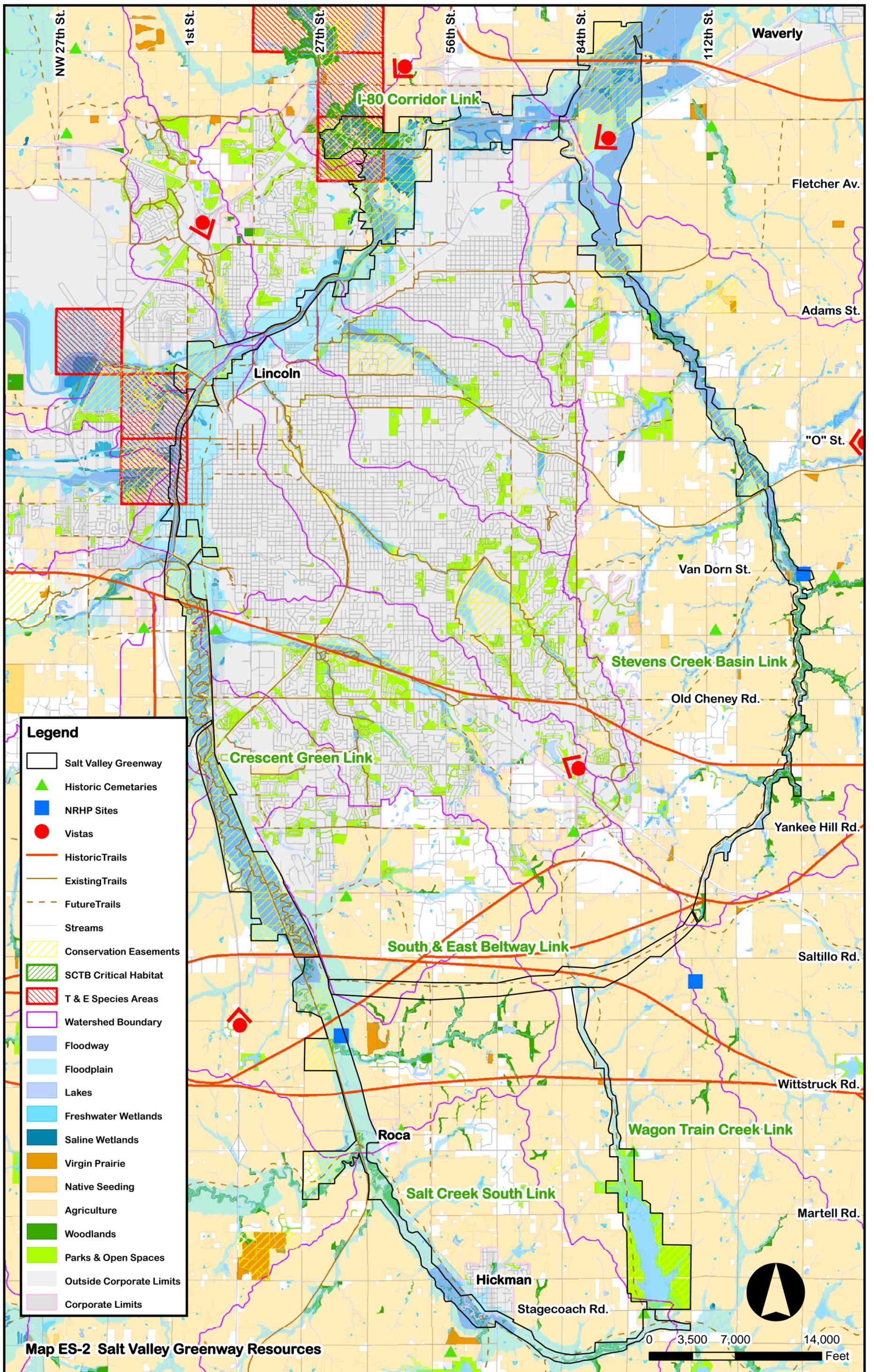
- **Prairie Corridor on Haines Branch corridor to Conestoga SRA and Spring Creek Prairie**
- **Cardwell Branch Corridor to Yankee Hill WMA**
- **Middle Creek Corridor to Pawnee SRA**
- **Salt Creek Corridor to Killdeer and Bluestem SRA**
- **Oak Creek Corridor to Branched Oak Lake**
- **Salt Creek Corridor East up the Little Salt Creek and Rock Creek Corridor.**

These key “corridors” to the Salt Valley Greenway will provide connectivity to existing natural resources including State Recreation Areas in the County.

This master plan refines the Salt Valley Greenway and connecting green corridors, broadly locating resources and opportunities. It also examines in greater detail the six “links” of the Greenway, which are segments of the Greenway loop, and evaluates the character, issues and challenges for each. These links are defined by separate basins and streams, developed or rural landscape and transportation corridors. The Salt Valley Greenway is comprised of six primary links:

- **Crescent Green**
- **I-80**
- **Stevens Creek**
- **South & East Beltway**
- **Wagon Train**
- **Salt Creek South**





Legend

- Salt Valley Greenway
- Historic Cemeteries
- NRHP Sites
- Vistas
- Historic Trails
- Existing Trails
- Future Trails
- Streams
- Conservation Easements
- SCTB Critical Habitat
- T & E Species Areas
- Watershed Boundary
- Floodway
- Floodplain
- Lakes
- Freshwater Wetlands
- Saline Wetlands
- Virgin Prairie
- Native Seeding
- Agriculture
- Woodlands
- Parks & Open Spaces
- Outside Corporate Limits
- Corporate Limits

Map ES-2 Salt Valley Greenway Resources



PRAIRIE CORRIDOR ON HAINES BRANCH

Overview and Corridor Resources

Lincoln and Lancaster County are located in the Tallgrass Prairie Ecoregion (as defined by the Nebraska Natural Legacy Project), which was historically covered by native tallgrass prairie that served as a home to species such as buffalo, antelope, grassland birds, and many other smaller species of plants and animals. The historic prairie contributed significantly to the fertile soils that resulted in such productive farming resources for this region. **Tallgrass prairie is a remarkable part of our natural heritage and a core resource imperative to the community. The Prairie Corridor is an opportunity to celebrate our natural heritage and to build on the unique sense of place and strengths of Lincoln and Lancaster County.**

The Prairie Corridor also offers important economic opportunities: the Nebraska Natural Legacy Project notes that several of the state's top tourist attractions are outdoors in nature and provide conservation, education and recreation opportunities. The Prairie Corridor links Pioneers Park and Spring Creek Prairie, two of Lancaster County's most valuable resources for tallgrass prairie and environmental education. It represents an opportunity to connect the urban and rural areas of the county between Lincoln and the village of Denton.

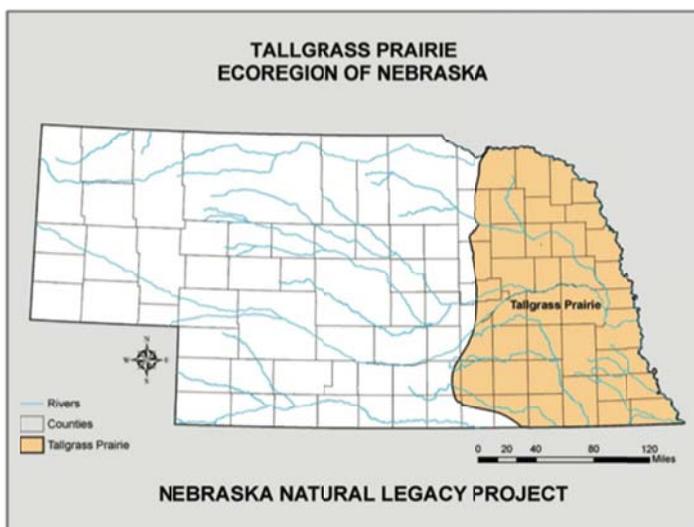


Image Source: Nebraska Game and Parks Commission

On the outskirts of west Lincoln along Haines Branch, the City of Lincoln owns and manages Pioneers Park. This park includes 1,130-acres and celebrates the prairie pioneers that settled in the county. On the west end of the park, over 500-acres of virgin and reseeded native prairie have been preserved at the Pioneers Park Nature Center. Established in 1963, this preserve offers over 8 miles of hiking trails and has had 246 species of birds identified that visit it and a variety of plants and wildlife available for viewing. Pioneers Park was listed on the National Register of Historic Places in 1993. Other resources in the park include a picnic area, recreational trails, winding roads and paths, and sculptural focal elements. This park is a significant natural resource asset to the City of Lincoln and Lancaster County.

About 6 miles upstream on Haines Branch from Pioneers Park, another expanse of virgin prairie exists at Spring Creek Prairie Audubon Center. Audubon established the prairie in 1998 on the former O'Brien ranch. The area includes 808-acres of tallgrass prairie with many acres of virgin prairie. This tallgrass nature preserve offers over three miles of walking trails, wetlands, wildflowers, and grasses. According to the Audubon Center, more than 210 bird species and 370 plant species have been recorded in addition to other wildlife. There are even 19th-century wagon ruts cut by pioneers that traversed the property.



Prairie Corridor Plan

The focus area plan for the Prairie Corridor on Haines Branch was developed by reviewing and supplementing a broad range of natural resources information with research and field work, using GIS data and input from experts and stakeholders. This plan includes a more detailed evaluation of the Prairie Corridor's



Spring Creek Prairie
Photo Credit: Nebraska Audubon

natural resources, opportunities for restoration and enhancement, trail and habitat connectivity, priorities for potential easements and acquisition, funding and land management strategies, and cost estimates. The Master Plan targets the Prairie Corridor on Haines Branch as a starting point for implementation to provide early protection and enhancement for this high priority area while serving as a model for implementation of the Salt Valley Greenway as a whole.

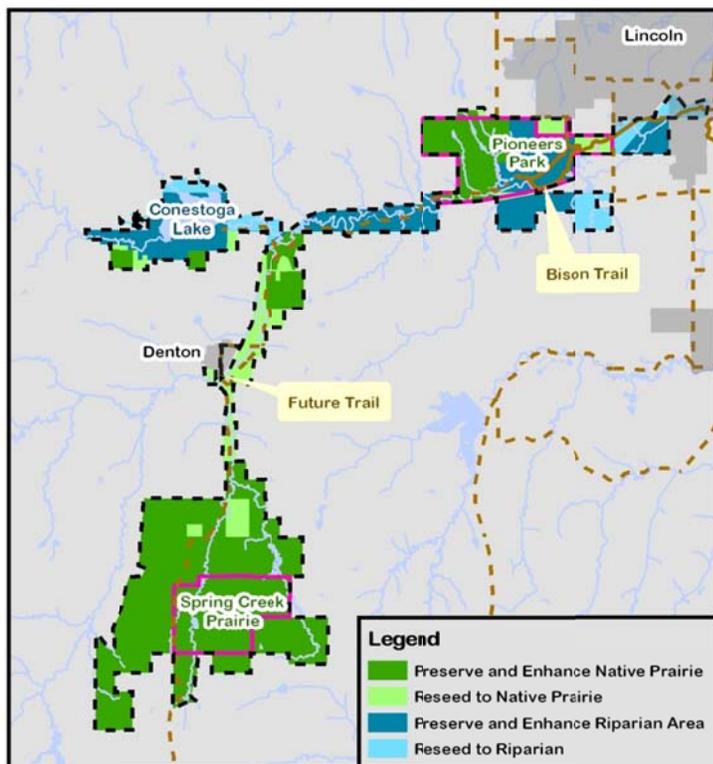


Figure ES-1: Prairie Corridor Strategy Areas

The Prairie Corridor boundary was defined by key features in the watershed (where Spring Creek drains into the Haines Branch): Haines Branch and Spring Creek stream centerlines, adjacent riparian areas, land ownership boundaries and conservation easements, virgin prairie areas and

In addition to expanding prairie, riparian and saline wetland habitat areas, the Prairie Corridor's vision seeks to build recreational and educational connections, and promote the enhancement and preservation of unique tallgrass prairie. While tallgrass prairie will be the primary feature of the corridor, it will be part of a collection of natural, open space and recreational land uses that will include riparian corridors, floodplains, woodlands, saline and freshwater wetlands, wildlife habitats, lowland and upland areas, trails and viewsheds. An overall conceptual approach to the Prairie Corridor is shown on Figure ES-1.

Spatial Analysis for Prairie Corridor Plan

The Prairie Corridor boundary was defined by key features in the watershed (where Spring Creek



wetlands. A number of the natural resources described above serve as a form of wildlife habitat. To further refine the corridor boundary and assist land managers in strategizing future natural resource preservation and enhancement techniques, spatial data analysis methods were developed. The results of the analysis comprise one tool that should be used together with other information in prioritizing and decision-making for the prairie corridor.

The goal of this analysis was to evaluate the natural resources in the Haines Branch Watershed and prioritize parcels based on existing habitat diversity and connectivity. Each parcel’s level of habitat diversity and connectivity was ranked 1 through 4, with 1 being the highest and 4 the lowest of each category. The detailed resources inventory of the Prairie Corridor is shown on Map ES-3.

For habitat diversity, natural resources such as virgin prairie, native prairie seeded areas, pasture, woodlands, saline and freshwater wetlands, and riparian vegetation were considered. Additionally, land use types were analyzed and categories include farmsteads, acreages, agricultural lands and urban development. These resources were prioritized for diversity of riparian and prairie areas with an emphasis on virgin prairie and saline wetlands (i.e. given a priority ranking of 1).

Habitat connectivity of riparian and prairie areas was evaluated for parcels based on management goals using two criteria. First, spatial relationships to the Haines Branch and Spring Creek stream centerlines were considered to evaluate an individual parcel. Second, adjacent parcels with existing prairie and riparian habitat, public ownership and easements were accounted for to place emphasis on existing protected parcels.

Through a matrix approach, the values assigned to habitat diversity and connectivity can be combined to assign an overall priority for each parcel. Through the matrix shown in Table ES-1, these two metrics were combined to determine the parcel priority rank. Parcel priority was ranked 1 through 5, with 1 being key parcels for acquisition and 5 being not considered for habitat in the Prairie Corridor.

TABLE ES-1: Parcel Priority Matrix

Habitat Connectivity		Habitat Diversity			
		Highest	→	Lowest	
		1	2	3	4
Highest	1	1	1	1	2
	2	1	2	3	4
↓	3	2	3	4	5
Lowest	4	3	4	5	5

The priority parcels were then flagged for different land management strategies based on existing habitat type, soil type related to re-establishment of native prairie, public ownership, conservation easements and proximity to key resources such as virgin prairie and saline wetlands. The breakdown of the different priority areas and land management strategies are shown in Table ES-2. The results of this matrix method throughout the Prairie Corridor will serve as a valuable tool for resource managers.



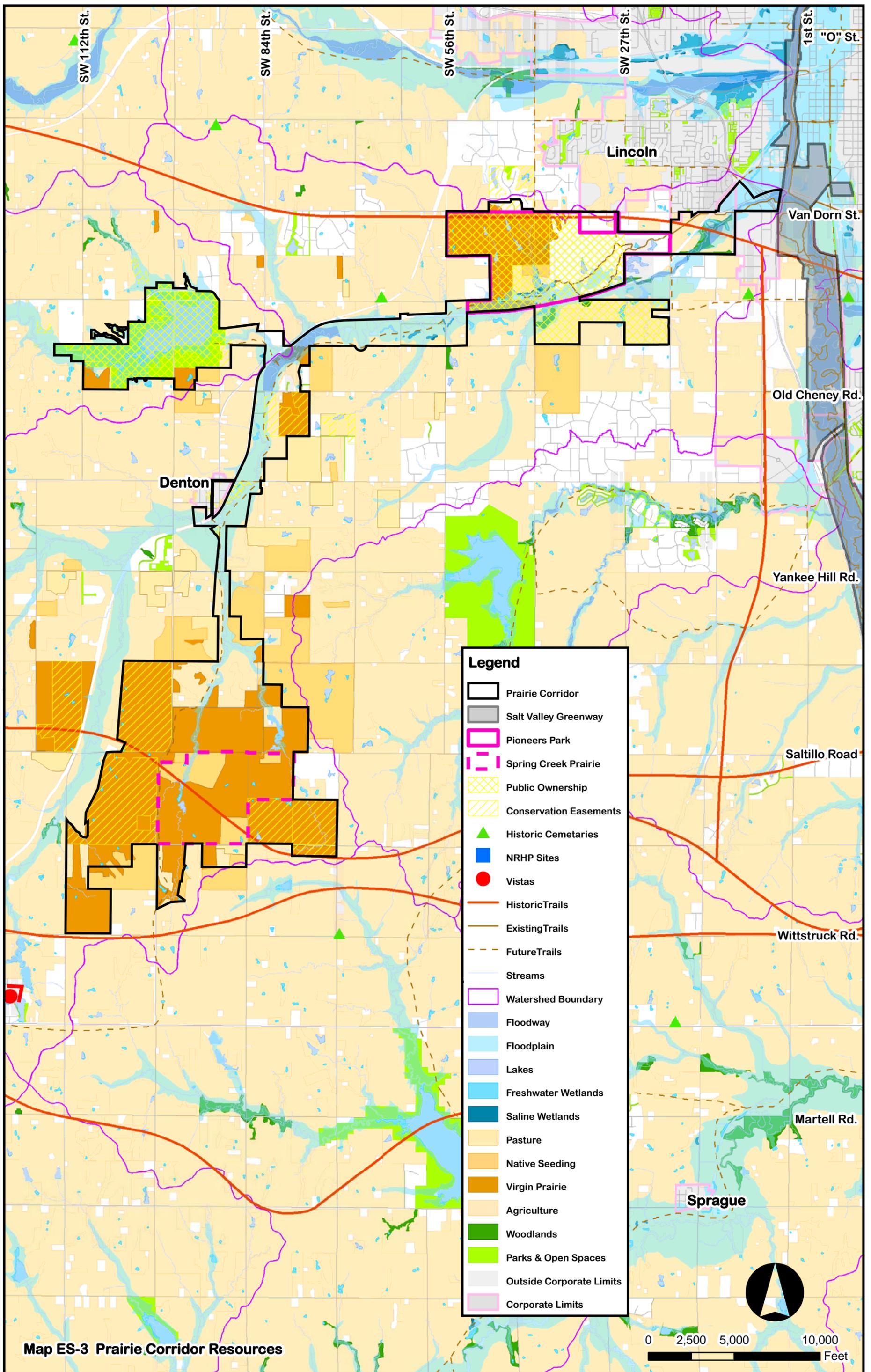


TABLE ES-2: Priority Areas and Land Management Strategies (acres)

Strategy	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Total
Preserve and Enhance Virgin Prairie	3,381 (1,790)	37	-	-	-	3,418 (1,790)
Enhance Existing Native Seeding	257 (60)	29	-	-	-	286 (60)
Reseed to Native Prairie	1,048 (496)	403 (36)	160 (20)	43	14	1,668 (552)
Preserve and Enhance Saline Wetlands	32 (9)	-	-	-	-	32 (9)
Enhance Existing Riparian Areas	354 (149)	778 (539)	109 (87)	-	-	1,242 (774)
Reseed to Riparian Area	-	87 (7)	316 (217)	63	8	474 (225)
Priority Total	5,072 (2,504)	1,333 (582)	585 (324)	106 (0.1)	22 -	7,119 (3,410)
Total of Private Ownership	2,568	751	261	106	22	3,709

Note: Values in Parentheses are Acres under Conservation Easement or Public Ownership. Total Prairie Corridor Area is 7,310ac, of which 191ac are Road and Railroad Right-Of-Way.

A Functioning Prairie System

The Minnesota Prairie Conservation Plan describes eight attributes of a functional prairie system. The Prairie Corridor contains large areas of native prairie on both ends but also contains unique saline wetland habitat in its middle as well as riparian and freshwater wetland habitat. As a whole unit, the Prairie Corridor fulfills all eight attributes and is anticipated to fulfill a ninth attribute by exhibiting ecosystem stability, adaptability, and resilience to environmental change over the long term.

Species Reliance on the Prairie Corridor

The Prairie Corridor has the opportunity to maintain and enhance ecological integrity, biological diversity, and high quality water resources. Spring Creek Prairie boasts 216 bird species, 30 mammal species, 53 butterfly species and more than 360 plant species. This constitutes a high diversity system. As shown above in Table ES-2, there are approximately 7,310-acres within the Prairie Corridor and approximately 3,700-acres are tallgrass prairie. Based on the American Bird Conservancy's "Partners in Flight Bird Conservation Plan for the Dissected Till Plains" this scale of native prairie habitat supports a core area for various species that have struggled for survival due to habitat fragmentation. Particularly, the scale of the Prairie Corridor begins to approach the overall management area goals to support the greater prairie chicken, short-eared owl and northern harrier bird species. These species rely on large, open, treeless grasslands. Numerous other species rely on the prairie corridor for habitat on the medium and small habitat dependence scales. In addition to prairie species, saline wetlands in the corridor provide unique habitat that supports a variety of plant and insect species.

Salt Valley Greenway and Prairie Corridor Master Plan Implementation

The following table (Table ES-3) presents planning level costs associated with various techniques that could likely be implemented within the Prairie Corridor. Land acquisition cost estimates are based on recent (April-June 2012) Lancaster County agricultural property sales. Conservation easement cost estimates are based on research that indicates easement costs are



in the range of 50-65 percent of that of acquisition. Trail development, wetland restoration and riparian zone restoration costs are based on recent projects in Lincoln and Lancaster County (projects completed for Lincoln Parks and Recreation and Lower Platte South NRD from 2008-2012) and include professional engineering design and construction costs. Acquisition costs are not included in the restoration/enhancement or development techniques described below.

TABLE ES-3: Planning Level Costs

Planning Level Cost Table	
Technique	Estimated Cost Range
Land Acquisition: Fee Simple	\$3,800 - \$4,500/acre
Conservation Easement on Existing Farmland: Permanent	\$2,400 - \$3,000/acre
Conservation Easement on Existing Grassland or Wetland	\$1,200 - \$2,000/acre
Reseeding to Native Prairie (includes site prep and establishment)	\$1,000 - \$3,000/acre
Prairie Management: Prescribed Burning	\$20 - \$120/acre
Wetland Restoration/Enhancement	\$5,000 - \$20,000/acre
Riparian Zone Restoration/Enhancement	\$60 - \$100/linear foot
Trail Development: Crushed Limestone	\$35 - \$40/linear foot
Trail Development: Concrete	\$75 - \$125/linear foot

Greenway Funding Strategies

There are a number of tools available to aid in the preservation and protection of land, both publically and privately held. There are cases (e.g. when public access is desired or when a property has high priority natural resources) when acquisition is the most appropriate mechanism to achieve the desired goal. General land preservation techniques and programs that are consistently used in greenway planning and that can be used for the Prairie Corridor, and larger Salt Valley Greenway are summarized and listed below.

- Fee Simple Acquisition
- Donation
- Right of First Refusal/Option
- Life Estate
- Conservation Easement
- Public Access Easement
- Transfer of Development Rights

Organizational Structure

An important consideration for the Salt Valley Greenway and the Prairie Corridor on Haines Branch will be the formation of a public-private partnership to realize the goals of this plan. It is critical to the success of this project that the full responsibility for implementation not fall on any one agency or private organization. On the contrary, a coalition should be formed that would work cooperatively to bring a range of strengths and resources to this project. By focusing on the Prairie Corridor as the first priority, the corridor will receive early protection and enhancement while serving as a model for implementation of the Salt Valley Greenway as a whole.

The City of Lincoln should be the lead agency for the initiation and early implementation of this plan, working cooperatively to develop and implement a public-private partnership. The best approach will be one that establishes a core coalition of partners to implement the overall vision



of the Salt Valley Greenway. Potential partners in this central group could include the City of Lincoln, the Lincoln Parks Foundation, Lancaster County, and the Lower Platte South Natural Resource District, but may include others as appropriate.

This core coalition should seek out additional partners to implement the various components of the Salt Valley Greenway, beginning with the Prairie Corridor on Haines Branch. It is envisioned that the partnership described above will come together with the Spring Creek Prairie Audubon Center, the Village of Denton and other potential partners for the application of an initial 3-year grant to the Nebraska Environmental Trust. The next step would be to formalize the partnership via an agreement to implement this Master Plan and any supplemental planning documents.

While the overall representation from varied groups will be essential to the planning process, a primary leadership role is highly recommended. A coordinator should oversee the project details and work with the partnership to promote and coordinate the plan, conduct public outreach and education and participate in and promote fundraising activities for the Prairie Corridor and Salt Valley Greenway projects.

