ADOPTED City-County Comprehensive Plan with Amendments

References to Floodplain Management

Mayor's Floodplain Task Force

July 23, 2002

ment. The proposed future service limit makes maximum use of existing and planned urban infrastructure. The community needs to pursue the timely development of additional infrastructure to support planned growth in the Comprehensive Plan.

The goal is to find the means to build 25 years worth of improvements over a 20 year period in order to ensure the well-timed delivery of urban infrastructure. The Plan Realization section further describes the mechanisms that will link urban infrastructure programming to local market and growth conditions. It is imperative that there be adequate funds for the maintenance of infrastructure and facilities in the existing urban area as future growth occurs.

Subarea Planning Process

Subarea planning — for neighborhoods or other small geographic areas – can address issues at a more refined scale than can be included in the Comprehensive Plan. Subarea plans may then become incorporated into the Comprehensive Plan through a formal adoption process. Subarea plans can serve as an official guide for elected decision makers, individuals and various City or County departments to promote improvements in the following areas such as: land use, housing, traffic, parks and recreation, public safety, infrastructure and the built and natural environments.

Subarea plans adopted as part of the Comprehensive Plan are discussed in the "Plan Realization" section.

Summary of Comprehensive Plan Assumptions

These assumptions represent the agreement of the Comprehensive Plan Committee which assisted in the development of the Comprehensive Plan. The following assumptions guide the planning process for Lincoln and Lancaster County

1. A City and County population growth rate of 1.5 percent per year was used for the 25 and 50 year planning periods. This adds approximately 113,000 persons to the County over the next twenty five years and approximately 277,000 over the next fifty years. The assumed County population distribution of would remain 90 percent in the City of Lincoln, 3 percent in other incorporated towns and villages, 6 percent on rural acreages, and 1 percent on farms. This would add approximately 42,560 dwelling units in the Lincoln urban area to support additional population of 103,000 persons.

2. Areas for future urban expansion were designated consistent with the growth projections, stated planning policies, and infrastructure objectives. Tier I provide 30 total square miles of which 23 square miles (14,720 acres) are "developable area" within the 25 year planning period. The net developable area includes land generally outside the 100 year floodplain and not presently developed with uses such as parks, golf courses, schools or commercial.

3. Projected levels of commercial and industrial expansion were accommodated throughout the planning area. An annual employment growth rate of 2 percent for projecting commercial space needs was assumed which equals 21.5 million square feet of new retail, office and service uses over the 25 year planning period (65 percent increase.) An annual employment growth rate of 2.5 percent for projecting industrial area needs was assumed which equals 2,392 acres of new industrial land within the 25 year planning period (86 percent increase.)

4. The working assumptions listed below were used in the modeling and analysis process for the development of this Comprehensive Plan, but do not take the place of the final policy or policies that are to emerge from the work of the Floodplain Task Force. The assumptions are subject to change, refinement, and reconsideration. The assumptions fall into three categories:

A. Where development exists in the floodplain, it was assumed that the uses would continue, that existing structures could be enlarged, and that existing individual businesses could expand within floodplain areas per adopted regulations and standards.

B. Where the 1994 Future Land Use Plan designated parks, open space, or agricultural land uses within the floodplain and floodway, it was assumed that such land uses would continue in the future and that any urban-style development would occur outside of the floodplain and floodway.

C. It was assumed that some new industrial and commercial development (between 10 and 20 percent of the total assumed growth in new industrial or commercial uses) could occur within areas already zoned or planned for industrial or commercial development in the delineated floodplain.

D. Nonetheless these assumptions reflect the intent and recommendation of the Comprehensive Plan Committee.

5. For transportation modeling purposes, an urban residential density factor of 3 dwelling units per acre was assumed for a majority of the designated future growth areas.

Groundwater Management Plan

In April 1995, the Lower Platte South Natural Resources District (LPSNRD) adopted a "Groundwater Management Plan." This Plan describes steps for managing the area's ground water to protect its future quality and quantity. The Plan has lead to the designation by the LPSNRD of a Groundwater Management Area. This designation provides the District with authority to regulate nonpoint sources in the urban and rural areas that might affect groundwater quality and quantity.

WATERSHED MANAGEMENT

Overview

Lincoln and the majority of Lancaster County fall within the Salt Creek Watershed. Salt Creek generally flows to the north and northeast where it ultimately drains into the Platte River near Ashland in Saunders County. Eleven creeks converge with Salt Creek in the vicinity of Lincoln: Little Salt Creek, Lynn Creek, Elk Creek, Oak Creek, Middle Creek, Haines Branch, Cardwell Branch, Stevens Creek, Deadmans Run, Antelope Creek, and Beal Slough. Over 1,000 square miles of land contribute runoff to Salt Creek.

Since Lincoln's founding in 1867, flooding along Salt Creek has been a major infrastructure concern. Over 100 floods were recorded in Lincoln during the twentieth century, with the floods of 1908 and 1950 the two worst in terms of damage. Flood loss potential has been reduced through the construction of levees along Salt Creek and dams along creek tributaries, as well as the creation of Wilderness Park. Channelization of Salt Creek, however, has increased the stream's water velocity, thus aggravating stormwater management efforts.

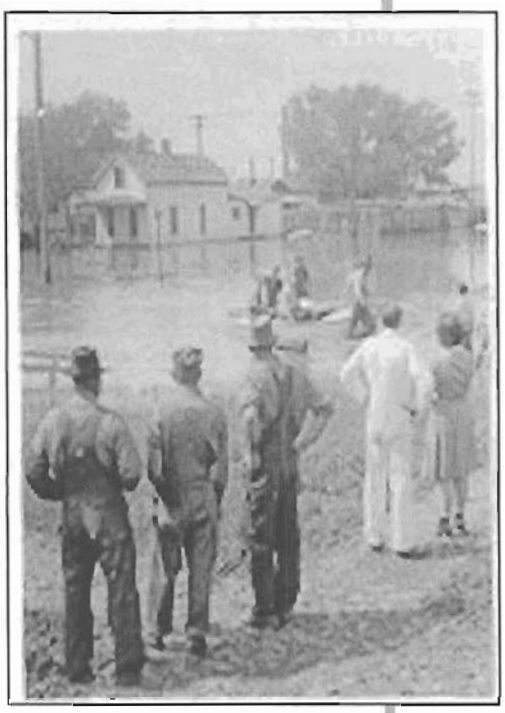
Significant industrial, commercial, and residential development exists in Lincoln's floodplain. This is especially the case in the older areas of the city. Much of this development occurred before the hazards from constructing in the floodplain were fully understood.

Floodplain and Stormwater Management

Local floodplain and stormwater management responsibility is shared by the City of Lincoln and the Lower Platte South Natural Resources District (LPSNRD). The LPSNRD has responsibility for maintaining the main stream channels while the City assumes care of the tributaries and storm drainage system. Both the City of Lincoln and Lancaster County also participate in the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA).

Water quality from stormwater is managed under the Federal Clean Water Act. The National Pollutant Discharge Elimination System (NPDES) program addresses non-agricultural sources of stormwater discharge. A permit system is used to control the

release of harmful pollutants into local water bodies. This program is administered in Nebraska by the State Department of Environmental Quality (NDEQ). The City's municipal stormwater system is regulated under this program, and a permit is likely to be issued in early 2002. This permit will stipulate discharge limits, as well as monitoring and reporting requirements concerning water quality. A similar element of the program for smaller municipal systems will affect Lancaster County. The County will be required to apply for NPDES permit coverage by March of 2003.



Updated erosion and sediment control standards were adopted by the City of Lincoln in the year 2000. Plans must be submitted and approved for any land disturbance proposed for areas greater than two acres. Even with these new standards in place, the City continues to experience severe problems with erosion and sediment control, most notably on sites under two acres. The absence of proper "best management practices" on construction sites has caused mud on sidewalks and streets, sedimentation in streams, water quality impacts, and stream stability problems.

Solid Waste

The City of Lincoln has entered into interlocal agreements with Lancaster County and all the villages and cities in Lancaster County, with the exception of Hallam, to serve as the lead agency for solid waste management in the County. The Public Works and Utilities Department, Solid Waste Operations in conjunction with the Lincoln-Lancaster County Health Department Environmental Division manages the City and County's solid waste management programs.

Collection

The City of Lincoln does not have a mandatory residential waste collection policy. A number of independent private companies are licensed to provide waste collection services to area residents. Residents may also haul their waste to a small vehicle transfer station located at 5101 North 48th Street.

Three villages in the county – Bennet, Davey and Panama – operate solid waste transfer stations. Residents transport their waste to these facilities. All other communities in the county offer residential waste collection.

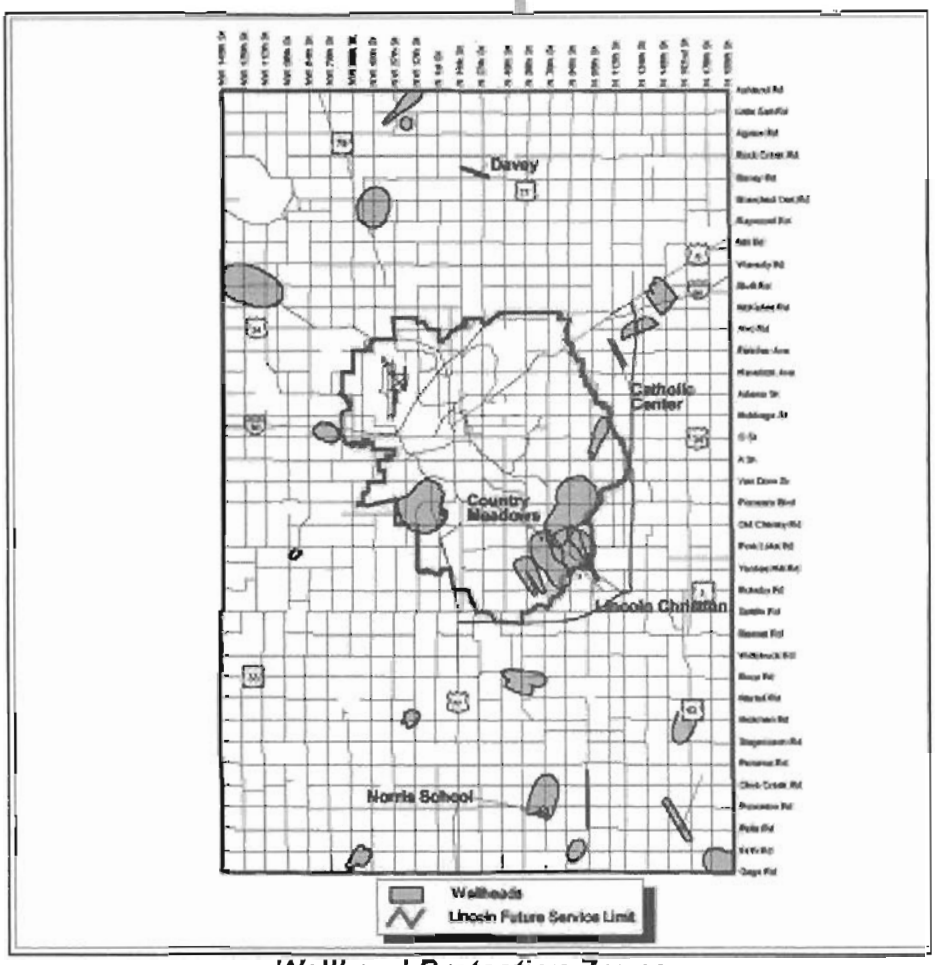
Disposal

The City of Lincoln's primary solid waste sanitary landfill is located at Nebraska Highway 77 and Bluff Road, just north of I-80. This facility began operating in the late 1980's. It accepts approximately 800 tons of waste each day. The facility is projected to reach capacity near the year 2025.

The City also operates a landfill for construction and demolition debris at 5101 North 48th Street. This facility is located on the site of the County's previous solid waste landfill. The construction and demolition debris landfill is projected to have

of the city on the Platte River, provides about three quarters of the county's total water usage.

Small areas of groundwater contamination from a variety of point sources of pollution are scattered across the county, mostly in or near urban areas. These localized sources of contamination can be from leaking underground storage tanks, grain handling facilities, "brownfields" or abandoned industrial sites, manufacturing facilities, fertilizer and pesticide storage, a variety of other types of spills, or past waste handling procedures among other causes.



Wellhead Protection Zones

FLOODPLAINS

Watersheds naturally drain surface water — that is, rain, snow melt, and human-produced runoff from such activities as lawn and farm irrigation – into streams, lakes, and wetlands by way of floodplains. For regulatory purposes, the floodplain is often divided into the floodway, composed of the stream chanel and adjacent overbank area, and the floodfringe, or outer portion of the floodplain.

Floodplains comprise over 10 percent of land area in Lancaster County and are home to almost all of the county's high value saline wetlands. Floodplains and wetlands — both freshwater and saline — filter sediments, reduce flood velocities and provide storage areas for water during storm events.

A discussion of stormwater and watershed management considerations is provided later in the Plan.

SURFACE WATER

The county's surface water resources are primarily contained in the area's many streams and lakes. There are about 400 miles of warm water streams in Lancaster County. These water features contribute to numerous ponds and lakes, including 16

Much of Lancaster County is not on a community wastewater system, but is served by private, on site, waste disposal through septic systems and lagoons. Lancaster County has adopted standards for on-site wastewater standards for on-site wastewater treatment systems that are enforced through the Lincoln-Lancaster County Health Department. Larger point sources and community systems are reviewed and approved by the State of Nebraska Department of Environmental Quality.

WATERSHED MANAGEMENT

Comprehensive Watershed Management

The City of Lincoln is in the process of developing an integrated watershed management program combining previously separate floodplain and stormwater management initiatives. This approach recognizes that floodplains, tributaries, and upland areas are all part of a comprehensive, integrated watershed system.

A comprehensive watershed management program will need to incorporate a range of strategies including land use planning, conservation efforts, appropriate standards for floodplains and stormwater, flood warning system development/expansion, stream stabilization, stormwater storage basins, and other structural flood control efforts.

As part of the overall watershed management program, the City is also developing a Master Watershed Management Plan. This plan will provide information and computer models to aid in analyzing stormwater management alternatives. A Beal Slough Stormwater Master Plan has already been prepared and adopted by the City. Similar management plans for other basins will be created and implemented by the City. Such plans are formulated in cooperation with other local, state and federal agencies.

A comprehensive approach to basin planning is crucial as development expands into new watersheds around the Lincoln city limits. Basin master plans ultimately need to be integrated into a unified watershed management master plan for the City of Lincoln and its projected growth areas. Ideally, a watershed master plan would be completed and adopted prior to urban development occurring within a new basin. This would allow projects and recommendations in the master plan to be considered during the review of specific development proposals.

Regional detention sites should be identified and sites reserved in early planning stages. Master planning and the performance and adequacy of stormwater storage basins to prevent increases in peak flows will require continued assessment with the growth of the City. Upstream detention is critical to preventing further increases to the floodplain. Detention facilities should be identified and developed in a manner that causes minimal adverse impact to existing residential, agricultural and other land uses.

Floodplain Management

The Mayor's Floodplain Task Force is charged with recommending revisions to the existing floodplain standards. These revisions should address the natural functions of floodplains and reduction of future flooding hazards in Lincoln and Lancaster County, while being sensitive to business, environmental and neighborhood interests. Such changes should also recognize the need to sustain long-term economic development opportunities. The Task Force is expected to complete their work by the summer of 2002.

There is an opportunity to reduce the risk of flood damages to life and property and to preserve the important functions of floodplains by designating areas for future urban development outside of floodplain and floodway areas. This would preserve the important natural and beneficial functions of floodplains, including flood storage and conveyance properties. Designating areas for development outside of floodplains and floodways would have the additional benefit of reducing the extension of public infrastructure to develop flood prone areas where future flood damages may occur.

Special consideration should also be given to the Salt Creek floodplain from Van Dorn Street to Superior Street where the FEMA Flood Insurance Study recommends preserving flood storage so as not to increase flood heights greater than one foot.

Guiding Principles

Watershed planning will continue in order to be proactive and integrate stewardship principles for land conservation, stream and wetland buffers, better site design, Best Management Practices (BMP), and erosion and sediment control. The natural drainage system can serve multiple benefits, including wildlife habitat and recreation.

Best Management Practices (BMP) are defined as measures that remove or prevent pollutants from entering stormwater. Examples of BMP include stabilizing all areas disturbed during construction and preserving natural drainageways. It is the City's policy to encourage the use of BMP in new development and redevelopment.

The community should encourage site designs that are compatible with the natural characteristics of the site, clustering development, minimizing grading and impervious cover, and preserving site hydrology to the maximum extent possible. Naturalized or bioengineered solutions to drainage issues should be used wherever possible.

Subject to the findings of the Mayor's Floodplain Task Force and the assumptions used in crafting this Plan, future urban development will be outside of the floodplain and floodway. This helps new development avoid potential flood risks and preserves the important functions of the floodplain. Keeping development outside of the floodplain preserves flood storage and other natural and beneficial functions of floodplains. It also avoids the long-term, cumulative impact of development in the floodplain.

Strategies

Create a stormwater utility, as a division of Public Works and Utilities Department, to provide for a steady revenue source as well as an organizational structure to

Environmental Resources

The quality of life for future generations will be reflected in the quality of the natural environment left to them by present generations.

This section considers the place of environmental resources in fulfilling the Comprehensive Plan's vision for the city and county's future. The section includes an outline of the guiding principles for this element of the Plan, a review of the key environmental resource features, a discussion of the element's "Core Resource Imperatives," and a long range environmental natural resources planning and implementation approach with associated strategies, entitled "The Greenprint Challenge."

Guiding Principles

In addressing the future of the community's environmental resources, the following guiding principles should be considered:

Maintain the Richness and Diversity of the County's Urban and Rural Environments

Lancaster County boasts a diverse set of environmental resources and landscape types that should be respected and maintained.

Lancaster County is home to a distinctive association of threatened and endangered species of plants and animals that represents a highly valued environmental legacy.

Environmental resources reside within a broad range of settings that should be considered as policy and development decisions are made.

Be Broadly Inclusive

The impact of the actions taken by the community extend beyond the borders of Lancaster County, and oftentimes influence the natural resource features of adjacent counties and states.

Urban and rural areas should receive equal priority in the planning process as the natural resources features are to be found throughout Lancaster County.

Public-private alliances and partnerships should be built upon, with an emphasis on the natural resources features rather than the patterns of ownership or land use on which the resources exist.

Environmental Stewardship

"Clean air, clean water, parks and open space, mature trees, signature habitats, and prime and productive farmlands are valuable assets. Conservation areas, floodplains, green spaces, and parks define, and help to create linkages between, neighborhoods and surrounding population centers. The Comprehensive Plan takes into consideration the effects of natural phenomena not only upon localized development, but also upon the community as a whole, upon private ownership issues, and upon recreational opportunities. The Plan thus commits Lincoln and Lancaster County to preserve unique and sensitive habitats and endorses creative integration of natural systems into developments."

Comprehensive Plan Vision

The community should capitalize upon both the environmental and economic benefits that the natural resources features provide.

Focus Attention on Unique Landscapes

Signature landscapes provide visual images of the community's natural and cultural history and serve as a reminder of the ecosystem that forms the community's urban and rural economic base.

Signature landscapes will require thoughtful management if their long term viability is to be ensured.

ENVIRONMENTAL RESOURCES FEATURES

Lancaster County lies within a large portion of the central plains of North America dominated by certain shared characteristics – e.g., topography, climate, soils, surface water, ground water, vegetation, and wildlife.

As a Comprehensive Plan land use category, "environmental resources features" represent an important part of today's urban and rural landscapes. Such features need to be valued and sustained as part of the overall planning process if they are to remain as vital parts of the natural heritage left for succeeding generations These features help to define the County's unique sense of place - geographically, culturally, and temporally. The Plan fully recognizes the harmony and connections that exist within and between these features.

Photo: Keith Johnson, Purdue Forage

Thirteen separate environmental resource features are recognized in the Plan. They can be viewed individually in order to understand their importance and function in the natural environment, and to determine how actions taken as part of the planning and development process may impact or influence their future viability. Conversely, each resource feature can be viewed as joined together with others to form a comprehensive, interconnected system. Decisions, plans, and policies that are made regarding one resource feature will undoubtably impact others – and it can often be hard to distinguish or understand these connections.

A brief description of each of the Plan's environmental resource features is provided below.

> **Native Prairie** – This feature refers to the tallgrass prairie areas that are dominated by big bluestem, little bluestem, indiangrass, and sideoats grama grass species. Numerous wildflowers and forbs are also found in these prairies, including purple coneflower, purple prairie clover, and black-eyed susan. Though historically they were the region's prevailing natural condition, native prairies are an increasing rare feature on the Nebraska landscape. Lancaster County is fortunate to have about 8,640 acres of native prairie remaining, although they are scattered throughout the county in patches of land that must remain whole if their integrity as a natural resource feature is

to continue. Nine Mile Prairie and Spring Creek Prairie are two of the larger massings of native grasslands in the county.

Saline Wetlands – This feature refers to those locations in the county where wetlands having a high salt content can be found. Saline wetlands have four distinguishing characteristics: a type of soil usually associated with damp or soggy areas; the presence of water during most of the year; a high occurrence of saline (otherwise know as salt); and plants that are adapted to wet, salty soils. Eastern Nebraska saline wetlands are rare, with perhaps 1,200 acres remaining in the county. They tend to be found along Little Salt Creek and Rock Creek to the north and northeast of Lincoln. They provide habitat to a number of threatened and endangered species of plants and animals – the Salt Creek Tiger Beetle and the Salt Wort in particular.

Parks, Trail Corridors and Other Recreational Areas – While the Comprehensive Plan recognized parks, trails, and recreational areas as a separate, distinctive land use category, they are an important part of the overall county's natural resource base. They include a diverse collection of sites and facilities owned, managed, and maintained by public entities and accessible to the general community. They accommodate a variety of recreation uses including passive and active recreation, hunting, fishing, and boating.

Floodplains - This feature refers to land that is susceptible to flooding or that has flood prone soils. Floodplains provide multiple benefits to both the natural (flood storage, habitat, water quality) and built (recreation, public health and safety, economic) environments.

Agricultural Lands – This feature refers to land - about 77 percent of the county — utilized for growing crops, raising livestock, or producing other agricultural produce. Though agricultural activity is identified as a separate land use category in the Comprehensive Plan, agricultural land does constitute a distinctive natural resource feature as well. These lands are an integral element in the natural landscape providing habitat as well as being a basic piece of the County's historic signature landscape.

Cultural and Historic Landscapes – This feature refers to places that are significant because of their unique character, because significant activities or events occurred at those sites, or because persons who have had a significant impact in culture are associated with the sites. As with several other natural resource features, Cultural and Historic Landscapes are also considered in other parts of the Comprehensive Plan. However, they individually and collectively add value to the community's sense of place and hold an important place in affirming memorable images of the County's heritage.

Freshwater Wetlands – This feature refers to areas that have hydric (i.e., water-bearing) soils, are frequently if not regularly moist, and are home to water tolerant plants. These types of wetlands are distinguished from "saline wetlands" by the lack of salt in the water that keep them wet. Freshwater wetlands are more prevalent in the county than are saline wetlands. This

does not make them a less worthwhile natural resource feature as they provide important water quality and habitat functions. The use of many freshwater and saline wetlands are regulated under Section 404 of the Federal Clean Water Act.

Riparian Areas – This feature refers to spaces immediately adjacent to water courses on each side of a stream. They are most often located in the floodplain. They frequently contain a large amount of woody vegetation. Riparian areas can serve as linear connections between natural and built areas, as well as serve as boundaries and edges to a variety of adjacent land uses. They offer numerous benefits including flood storage, storm water conveyance, habitat, recreation, visual appeal, and shaded areas.

Basins and Streams – This feature refers to the region's watersheds and the waterways they produce. These areas are demarcated by ridge lines that define the top of each basin. The primary basins and streams within Lancaster County include but are not limited to Salt Creek, Antelope Creek, Dead Man's Run, Lynn Creek, Middle Creek, Haines Branch, Oak Creek, Stevens Creek, Beal Slough, and the upper tributaries of the Nemaha River. Most of the county is within the Salt Creek basin.

Urban Forest – This feature refers to the trees and other woody plants that have been planted or grow naturally within the limits of the communities in Lancaster County. Though many may not consider the urban forest to be part of the "natural environment," it represents a significant community investment — exemplified in Lincoln being a "Tree City" - with its elimination or neglect having substantially detrimental consequences.

Threatened and Endangered Species – This feature refers to those plant and animal species who's continued existence have been identified by Federal and/or State officials as being threatened or endangered. In Lancaster County these include the Salt Creek Tiger Beetle (State Endangered), Western Prairie Fringed Orchid (State and Federal Threatened), Saltwort or Western Glasswort (State Endangered), Least Bittern (State Threatened), and the Massasauga Rattle Snake (State Threatened.) Other species having habitat or that have historically been found in Lancaster County include the Bald Eagle (State and Federal Threatened), River Otter (State Threatened), Small White Lady's Finger Orchid (State Threatened), Topeka Shiner (State and Federal Endangered), and American Burying Beetle (State and Federal Threatened.)

Views and Vistas – This feature refers to important or unique natural resources, places, structures, and landmarks. The views of these features can be from nearby or afar. Vistas refer to areas that afford significant views. Views and vistas provide key points of reference and help create the county's signature landscape, such as of the State Capitol.

Woodlands – This feature refers to the County's natural wooded areas, especially those exhibiting bur oak/hickory associations. Woodlands in this context excludes the numerous stands of tress dominated by elm species, red cedar, mulberry, etc. This feature is also distinct from the riparian areas discussed earlier in this chapter.

CORE RESOURCE IMPERATIVES

The thirteen resource features described above all represent greatly cherished elements of the city and county's natural environment. Based upon further assessment and review of these features, three "Core Resource Imperatives" were identified. These imperatives were selected as those that should receive the greatest consideration in the long range planning process. Their selection does not mean that the other features are unimportant, inconsequential, or expendable.

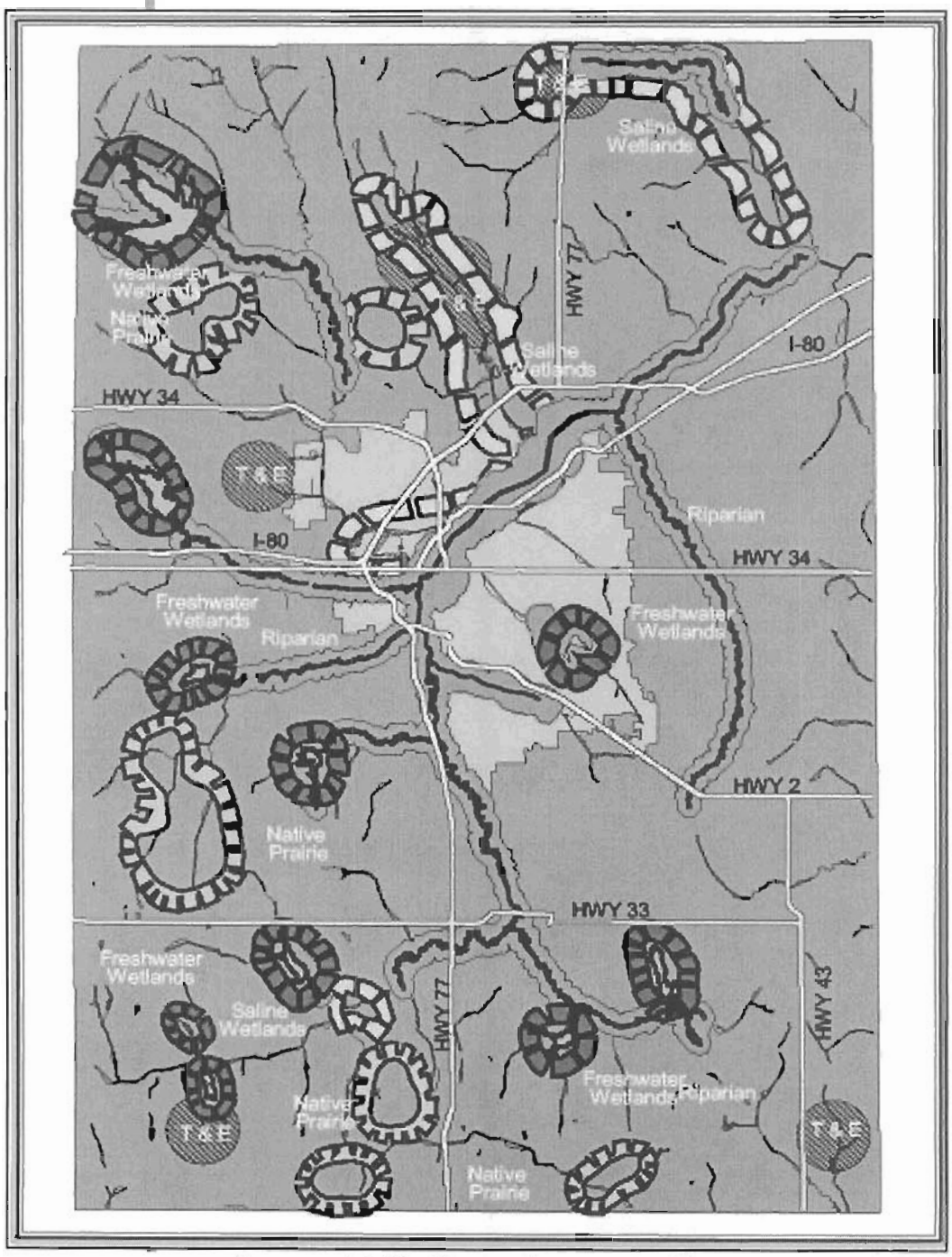
The "Core Resource Imperatives" uniquely contribute to the natural resource heritage of the region and whose safeguarding for future generations is indispensable. The other features remain important to the long term environmental and economic viability of the community and should not be inordinately discounted.

The three "Core Resource Imperatives" called for in the Comprehensive Plan are as follows:

Saline and Freshwater Wetlands – Wetlands provide distinctive habitat opportunities for various plants and animals, as well as offering flood control and water filtration benefits. Lancaster County is home to about 1,200 acres of very rare Eastern Nebraska Saline Wetlands. These wetlands offer a specialized habitat to several threatened and endangered species, including the Saltwort and Salt Creek Tiger Beetle. Lancaster County is the only place in the world where the Tiger Beetle exists. Owing to a dwindling Beetle population and the growth of the city, the National Fish and Wildlife Service is considering placing the Beetle on the Federal Threatened and Endangered Species list. The City and County are investigating ways to protect and preserve the unique habitat offered by the saline wetlands. This may include a blend of land uses stressing education, parks, floodplain, and low intensity development.

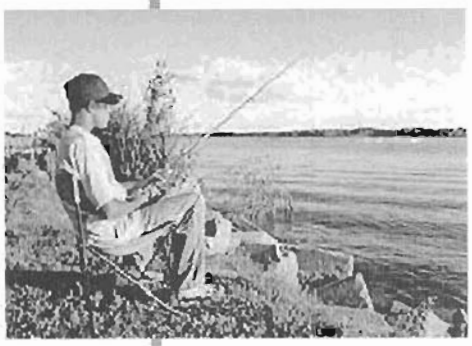
Native Prairies – Prior to the European settlement period, tallgrass prairies dominated the Nebraska landscape. Native prairie remnants remain scattered throughout the County, providing a home to numerous grasses, wildflowers and forbs. The remaining native prairies are becoming rarer and thus are increasing in value as an ecological amenity. The prairies are a key component of the signature landscape the first Europeans encountered when they settled in Nebraska and remain a visual clue to Lincoln and Lancaster County's "sense of place."

Riparian, Floodplains, and Stream Corridors – Streams and their adjoining corridors snake their way through much of Lancaster County. Throughout the region, surface water runoff flows into these stream corridors that typically consist of floodplains and riparian areas. These are instrumental in providing habitat and water infiltration benefits, along with serving as connectors to natural areas.



Greenprint Challenge Composite Map

THE GREENPRINT CHALLENGE: OVERVIEW



The purpose of the Comprehensive Plan's Greenprint Challenge is to assure the long term health and integrity of the ecosystem upon which Lancaster County is superimposed, and to capture the community-wide quality of life and economic benefits that can be derived from the area's environmental resource features.

Proper land use planning and plan implementation can aid in maintaining a healthy natural environment. While ultimately focusing on three "Core Resource Imperatives," the Greenprint Challenge offers a basis within which crucial planning decisions concerning the wide range of environmental resource features can be effectively pursued.

Five levels of green space comprise the basic structure within which to view the Greenprint Challenge. All five levels play an important role in helping the community experience and understand the benefits of environment resources, and in advancing the value placed on these resources by the community today and into the future. The five Greenprint Challenge levels are as follows:

1. *"Kitchen Window"*

   Every home and place of work is surrounded by some sort of green space. This includes planted vegetation, birds, animals, etc. At the lowest level, green space is the view from each and every window. That view should be an enjoyable one.

2. *Parks, recreation areas, and green partitions*

   Parks, recreation areas, and green partitions between communities provide a diverse landscape important to a comfortable and acceptable community.

3. *Urban forest*

   In its totality, the urban forest consists all vegetation, insects, animal life, etc., in the city. The urban forest plays an important ecological as well as an aesthetic role.

4. *Natural recreation areas*

   Disconnected or shielded from the community, these areas are set aside for the enjoyment of the natural environment. Hiker/biker trails and the Salt Valley Lakes are examples of such spaces.

5. *Preserve ecological protection* areas

   Protected areas that are biologically interconnected to support bird, animal, and insect migration and protect supporting vegetation. Examples are stream beds and wooded corridors, prairie land, and saline wetlands.

The Greenprint Challenge: Implementation Principles

The true challenge of the Greenprint Challenge will ultimately be its implementation. The principles to be followed in implementing the Greenprint Challenge are:

Seek early identification of areas to be preserved – While planning for future growth is integral to this Comprehensive Plan, it is equally important that environmental resource features be accorded similar attention. The community should invest planning resources into the early identification of those areas most valued as part of the Greenprint Challenge. This principle supports the notion of "getting ahead of the game" by knowing what resources are most valued, where they are located, and what actions should be made within the broader planning process to secure their future for the community.

"Section 404" of the Federal Clean Water Act established a national program to regulate the dredging and filling of wetlands. The program's objective is to maintain and restore the quality of waters of the United States. It is jointly administered through the U.S. Army Corp of Engineers and the Environmental Protection Agency. A "Section 404 permit" allowing for a wetland to be dredged or filled can be issued if certain conditions are met. A land owner must show that steps have been taken to avoid wetland impacts where practical.

Obtain reasonably constrained regulations – Maintaining a balance between the natural and human built environment is always a delicate one. Planning policy and regulatory approaches employed in achieving the Plan's Vision and Greenprint Challenge should strive to be effective, tempered, pragmatic, and circumscribed, and respectful of private property rights.

Provide biological interconnection – Plants and animals do not exist in isolation. They interact with each other and reside within a integrated habitat. Implementation of the Comprehensive Plan needs to respect biological connections that exist today and provide responsive means for maintaining those associations.

Promote diversity of vegetation – Plants are a basic environmental building block. They provide habitat and food for animals, as well as aid in sustaining other vegetation that holds the soil and protects the water quality. Maintaining a diverse range of plants ultimately supports a healthier environment for all plants and animals.

Make "green space" an integral part of all environments – "Green space" can come in a wide variety of forms. The policies of the Comprehensive Plan should strive to incorporate such uses in the full range of urban and rural landscapes.

Prevent the creation of a "wall-to-wall city" through the use of green space partitions – As cities and villages expand, establishing corridors and districts of green should be part of the growth process. This often requires the advance delineation of these areas and the means for securing their on going maintenance.

Establish effective incentives for natural resource feature preservation – Securing the long term permanence of green space is a basic dilemma in natural resources planning. The use of "green space devel-

opment incentives" (e.g., setting aside non-buildable areas, creating green space preserves, density bonuses) should be a primary consideration in implementing this Plan.

THE GREENPRINT CHALLENGE: IMPLEMENTATION STRATEGIES

Strategies for implementing the Greenprint Challenge are presented below within five major groupings:

- Environmental Resource Features
- Comprehensive Planning
- Current Planning and Development
- Program Implementation and Funding
- Public Agency Administration

Environmental Resource Features

Wetlands: Saline and Fresh Water

Provide appropriate incentives — in addition to regulatory mechanisms such as the Federal Section 404 process — to encourage landowners to preserve saline and freshwater wetlands. Incentives to be used or considered further include: (a) fast track approval of developments that preserve and protect this resource; (b) special density credits or bonuses within a Community Unit Plan for wetland conservation; (c) special allowances under provisions of contract zoning; (d) transfer of development rights; (e) wetland bank mitigation; (f) technical assistance for wetland preservation and enhancement; and conservation easements with tax incentives.

Research and seek implementation of procedures for managing lands containing and that are located near saline wetlands. Desirably this research would be conducted at the watershed level to provide a broad perspective of how area-wide development will interact with this natural resource. A special treatment buffer along the perimeter of saline wetlands could reduce the impact of increased runoff, sedimentation, and other pollutants. Such buffers could also serve to provide support for the preservation of habitat areas for the county's threatened and endangered species.

Pursue stormwater management practices that consider both water quality and quantity approaches near fresh water wetlands. Buffer areas should be encouraged at their perimeters to decrease the effects of adjacent future uses.

Salt Creek Tiger Beetle

In conjunction with research into saline wetland preservation, determine measures that could be taken to enhance and maintain these areas as Salt Creek Tiger Beetle habitat. This may include authorizing or soliciting funding for hydrology or hydrogeology research of the habitat area, determining basin-wide impacts of land use and human activities on the wetlands, characterizing the Tiger Beetle's biology and habitat, and assessing the economic impacts of potential management efforts. A

management plan for the Salt Creek Watershed and Tiger Beetle habitat should be prepared by December, 2002.

Identify specifically targeted saline wetlands and accompanying 500 foot buffer zones in the Comprehensive Plan until additional baseline research can be completed. This can be a first step in initiating on-going formal partnerships between the City and other entities to address saline wetland protection. Landowners in the area should be offered assistance concerning existing programs to preserve wetlands and transition lands occurring on private property.

Crescent Green – The concept of a linear greenway along Salt Creek as it runs through the Lincoln urban area has been in the City's Comprehensive Plan since 1961. The name "Crescent Green" was first used in 1964 as part of an architectural design class. A plan formally describing a "Crescent Green Park" was prepared by the firm of Clark & Enersen in 1977. This plan called for a park to be created along Salt Creek from Wilderness Park north to the city's former landfill near North 56th and Fletcher Avenue. This park would also extend to the west along Middle Creek and Haines Branch.

Prioritize land acquisition in the Salt Creek Watershed that protects Tiger Beetle habitat. Also investigate incentives allowing land owners to pursue voluntary purchases, conservation easements, or other similar preservation options.

Explore grant opportunities for saline wetland preservation and enhancement.

Coordinate planning for Tiger Beetle and saline wetland protection with the Mayor's Floodplain Task Force.

Seek better coordination (or centralization) of development and construction permits so a more effective assessment can be made of any development plans that might negatively impact Tiger Beetle habitat.

Initiate a public education effort to raise awareness of the Salt Creek Tiger Beetle and its unique habitat.

Native Prairies and Grasslands

Develop planning guidelines, management techniques and supporting policies for preserving native prairies and grassland. For example, these areas remain healthiest when periodic burning is done to support plant regeneration. Smoke buffers of one quarter mile around these sites are desirable. Notification to adjacent property owners of possible burnings and smoke occurrences must occur as title to property changes. Research into such issues should examine how the implementation of necessary management guidelines can best occur; particularly options for balancing the inherent needs of natural resources features (such as grasslands) with surrounding properties.

Investigate means for encouraging nature prairie restoration by private entities.

Utilize the University of Nebraska Center for Grassland Studies in assessing alternatives for grassland preservation and restoration.

Greenways and Open Spaces: General

Develop a county-wide parks and open space plan. (Also see the strategies discussed below under Public Agency Administration.)

Continue development of the "Crescent Green" concept to provide a continuous greenway and open space corridor around the west and northern part of Lincoln.

Encourage linear connection of green spaces where possible. Efforts should be made to preserve small stream corridors throughout future developments. When the new crossings of riparian ways are proposed or existing ones expanded, care should be given to ensure that the connectivity is not diminished.

Pursue Greenways connecting urban and rural areas. Such corridors should follow stream courses (particularly along floodplains) and connect valuable resource areas (such as the Salt Valley Lakes, points of with special vistas or views, prairie grasslands, cultural and historic sites, and the county's towns and villages.)

Ensure that as greenways and open space corridors are identified and created, provisions are made for possible future access points across these areas. This may include, but not be limited to, access for new road alignments, road widenings, utilities, and other similar services.

Buffer areas should be sought, as ecologically appropriate, along Greenway stream corridors with significant natural values worthy of continued preservation, and/or to decrease impacts from adjacent future land uses; such impacts may include natural areas protection strategies and/or stormwater management considerations.

Further the continued development of the urban forest through design standards and other current planning mechanisms.

Preserve existing tree masses as much as possible by integrating them into future development plans.

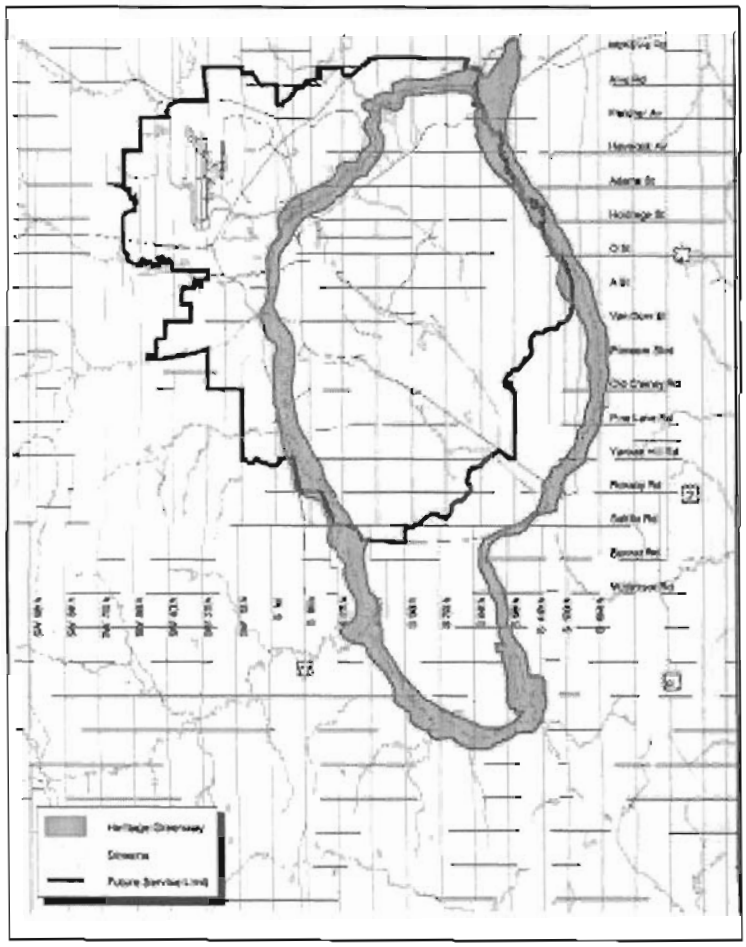
Greenways and Open Space: Salt Creek South /Wilderness Park

Pursue the acquisition of additional greenway south from Saltillo Road along Salt Creek. This future greenway should generally follow the 100-year floodplain along Salt Creek, and incorporate the right-of-way of the abandoned Union Pacific rail line. This area could eventually connect a network of trails that would extend into northern Kansas. This extension may be accomplished through a combination of land purchases, conservation easements, donations, and other options. (Also see the Homestead Trail extension in the Future Conditions: Transportation section.)

Work with other incorporated communities within the county — notably Roca and Hickman – to coordinate the Park's extension.

Greenways and Open Space: Salt Valley Heritage Greenway

The Salt Valley Heritage Greenway is a proposed continuous open space "loop" around Lincoln providing a connection with both the urban and rural communities. The Greenway is envisioned to be comprised of conservation easements and fee simple acquisition of selected sites with unique environmental features or recreational opportunities. It would include parks and open space, trails, both active and resource-based recreation, riparian and stream corridors, floodplains, saline and freshwater wetlands, agricultural land, signature landscapes, wildlife corridors, lakes and streams, abandoned rail lines, and transportation corridors. It could be as



Salt Valley Heritage Greenway

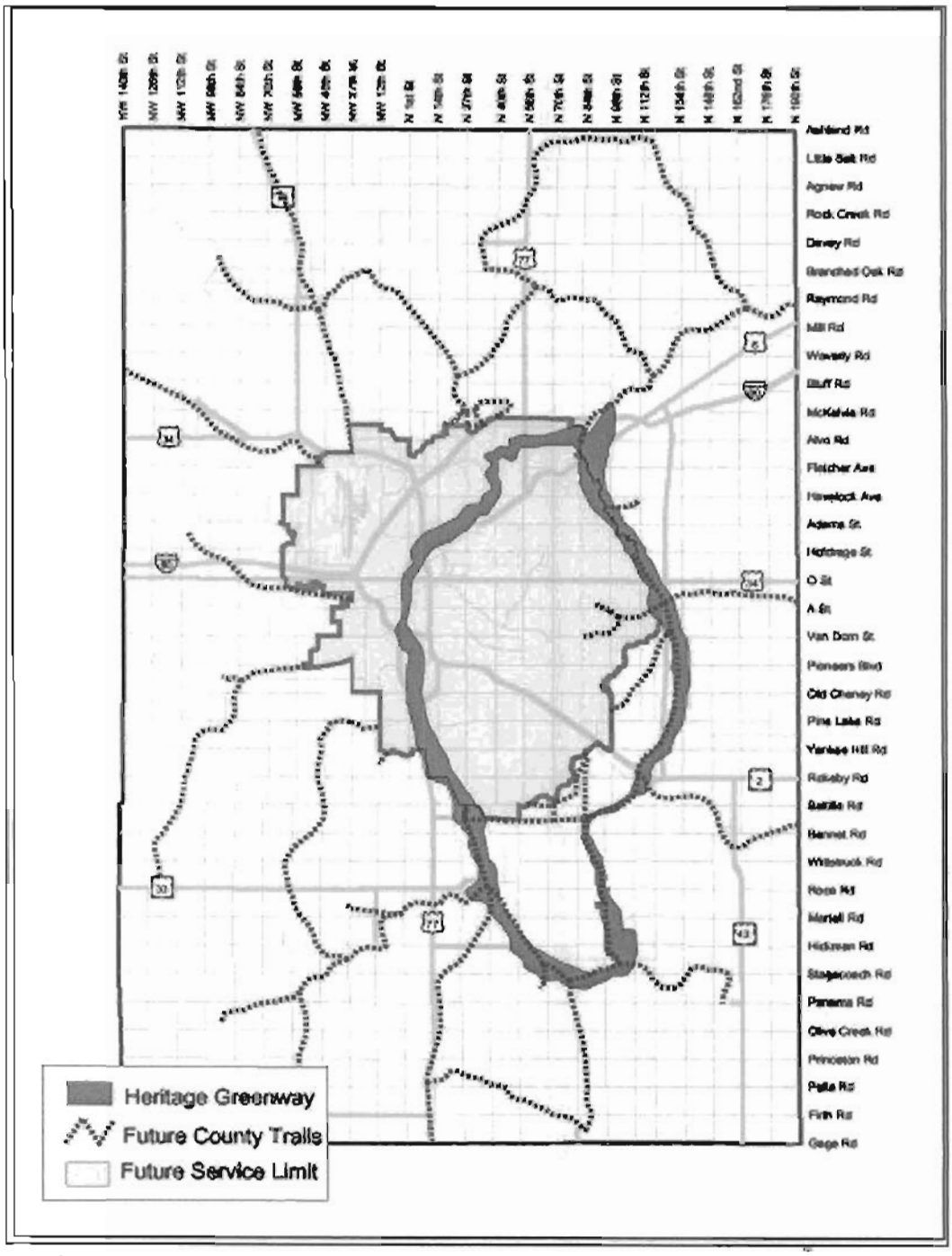
narrow as a few hundred feet in some places to as wide as a mile around state recreation areas.

This corridor would include the Crescent Green linear greenway along Salt Creek beginning on the north and then proceeding along Salt Creek along the west and including Wilderness Park. It would proceed south of Wilderness Park along the Salt Creek floodplain connecting with the community of Roca. It would follow the Hickman Branch south of Roca and proceed east connecting with the community of Hickman. From Hickman, the corridor would proceed easterly connecting with Wagon Train Lake tributary to the south beltway. Following linear open space along the south beltway east and then north along the east beltway to the Stevens Creek connection near Walton. The Greenway would follow the Stevens Creek corridor to the north and connect back in with Salt Creek including saline wetlands and Salt Creek Tiger Beetle habitat and the Crescent Green Corridor on the north, forming a continuous open space system.

The Salt Valley Heritage Greenway would provide connectivity with current and future green corridors that extend out from Lincoln such as the MoPac Trail corridor, Murdock Trail corridor, Antelope Valley, Dietrich Bikeway, and Antelope Creek Trail Corridor. It would provide a destination for additional trails as Lincoln continues to grow. The Greenway would also provide access to green corridors that then would extend from it out into the county to State Recreation Areas (SRA) and matural resource areas and beyond including the following:

- Cardwell Branch corridor to Yankee Hill SRA
- Middle Creek corridor to Pawnee SRA
- Haines Branch corridor to Conestoga SRA
- Salt Creek corridor to Killdeer and Bluestem SRA
- Oak Creek corridor to Branched Oak Lake
- Salt Creek corridor east and up the Rock Creek corridor

The Salt Valley Heritage Greenway would also provide connectivity with the Homestead Trail that goes to Beatrice and south to Kansas. It would connect with additional rail lines that are acquired for trails in the future.



Salt Valley Heritage Greenway and Countywide Trails Framework

Use the Salt Valley Heritage Greenway concept to embody the Comprehensive Plan's Vision and environmental resource guiding principles, including:

- Conserve flood-prone areas for storm water management
- Preserve signature landscapes
- Create a continuos commuter and recreation trail loop
- Connect urban neighborhoods, as well as urban and rural areas with unbroken corridors of open space
- Provide links of wildlife habitat and movement areas
- Enhance the value of properties adjacent to and served by the Greenway

Develop a strategic plan for acquiring and conserving lands within the Salt Valley Heritage Greenway corridor through cooperative efforts of public agencies, private organizations, and individuals.

Prepare and distribute information to community residents regarding the functions and value of the Salt Valley Heritage Greenway, and of the plans for its creation.

Identify and pursue funding sources for the acquisition of significant properties forming the Greenway.

Coordinate the planning of the Salt Valley Heritage Greenway with county-wide trails planning and any other relevant on-going planning activities.

Greenways and Open Space: South and East Beltways

Explore alternatives for creating a greenway corridor along the South and East Beltways. This work would occur as the more detailed planning of those facilities takes place. The activities could range from park-like areas existing today along Interstate 180 and Highway 2 in Lincoln, to more riparian settings as are found in Wilderness Park and the Crescent Green areas. The corridor could connect with historic and cultural assets, regional and community parks, lakes, and other recreational areas. It could also provide potential habitat and corridors for animal movement.

Greenway and Open Space: I-80 Corridor (N. 27th to Waverly)

Continue the advancement of the greenway corridor along Interstate 80, between North 27th Street and the City of Waverly. This corridor already includes a number of wetland areas (both saline and fresh water) that are under public ownership - City of Lincoln and the Lower Platte South Natural Resources District in particular. The corridor contains the Warner Wetlands and City's wetlands mitigation bank. The area is a major entryway into the City of Lincoln and provides associated trail and open space opportunities.

Greenways and Open Space: Stevens Creek Basin

Seek the early acquisition (or the application of other management techniques) of land along Stevens Creek and within the Stevens Creek Basin for future greenways, open space and park uses. Examine possible park and open space potential around Walton where the MoPac and future Stevens Creek Trails will connect.

Greenways and Open Space: Haines Branch Corridor

Enhance the Haines Branch Corridor extending from the city to Pioneers Park, and then to Conestoga Lake. This includes accenting the visual appeal from and of the Bison Trail. From Conestoga, there is the opportunity to connect with the Village of Denton, and then south along the riparian corridor to the Spring Creek Nature Center.

Greenways and Open Space: Trails in General

Pursue the active coordination of all future trail network extensions and enhancements. The urban network of trails should connect employment centers, shopping areas, schools, and residential neighborhoods. Trails should be an integral part of the community's green spaces and corridors. (See Transportation: Future section of the Plan.)

Seek establishment of trails easements or comparable options along selected county roads. (See Transportation: Future section of the Plan.)

Endeavor to acquire abandoned rail lines for trails as part of an overall open space and recreation system for the county. These may include the Union Pacific line running north- northwest out of Lincoln to Valparaiso and Wahoo, the Lincoln to Nebraska City Burlington Northern line, and the Union Pacific line north of the Jamaica junction and running north toward the Haymarket area in Downtown Lincoln.

Floodplains

Manage floodplain development in a manner consistent with the findings of the Mayor's Floodplain Task Force.

Seek the routine use of "Best Management Practices" in implementing stormwater management policy so that the potential for sedimentation problems are minimized.

Further discussion of floodplain and stormwater management considerations and strategies is provided within the Utilities section.

Views and Vistas

Investigate the availability of several locations in the county that offer distinguished views and vistas. These could be acquired through fee simple title or easements. Many of these locations may be appropriate for public ownership as future parks or open space. Efforts should be made to acquire these parcels should they become available.

Unique Features

Inventory and pursue the preservation of unique features to provide special educational and interpretive opportunities. These include quarries and areas of geological significance, remnants of historic trails, unique bluffs near Bennet, the sandstone prairies, a small waterfall south of Denton, and historic pits and grasslands around of Hickman and Roca.

Comprehensive Planning

Integrate the "Core Resource Imperatives" and natural resource feature concepts into future city and county studies that implement the Comprehensive Plan.

Examples of such studies would be watershed master plans, subareas plans, transportation planning studies, utility master plans, wetland bank development analysis, and floodplain management studies.

Incorporate scientific data on flora, fauna, geology and other natural resources features into the Planning Department's "Natural Resources-Geographic Information Systems" (NR-GIS) database. This may include the targeted collection of pertinent baseline data on plants and wildlife.

Document historic, cultural and archeological sites throughout the city and county.

Research the long term land value effects of natural areas and parks on adjacent uses.

Current Planning and Development

Include the consideration of the "Core Resource Imperatives" and other natural resource features in the plan review process — i.e., subdivision plats, changes of zone, use permits, etc. This may involve preparing written guidelines for looking at site vulnerability, habitat fragmentation, long term land manageability, green space connectedness, and other elements that implement the Plan's natural resources concepts.

Update City and County zoning and subdivision regulations to encourage the application of concepts identified in the environmental resources section of the Comprehensive Plan Vision.

Develop and adopt planning policies and procedures for acreage developments that are consistent with the environmental resources Vision of the Comprehensive Plan.

Where setback and buffer provisions are provided for, the Planning Commission will consider requests for exception only if no economically viable use allowed within the designated area could occur as a result of the application of the setback and buffer provision, and that this circumstance is not purposefully brought about by any deliberate action of the owner or developer of the property.

Program Implementation and Funding

Investigate the possible use of easements (e.g., conservation, preservation, public access, etc.), incentives (e.g., density bonuses, conservation overlay zones, buffer/transition zones), purchases (e.g., development rights, land acquisition), and impact fees to manage land with environmental resource interest.

Investigate the establishment of a land trust to enable donations of land and funding to occur on a systematic basis. This may include encouraging estate planning to

support further expansion of environmental resource areas in the county.

Conduct outreach efforts bringing together private land owners, environmental interests, and the development community to seek a common understanding and approach regarding natural resource features and the vision described in this Plan.

Develop a capital improvements programming approach providing for further acquisition of park property and natural areas to ensure the preservation and protection of sensitive environmental features.

Pursue a variety of grant funding sources on a continuing basis. These may include Land and Water Conservation Fund, various floodplain and water quality funding programs, and the Nebraska Environmental Trust.

Cooperatively plan for the long term preservation of existing and future public and private conservation areas.

Lend policy support to Federal and State programs retaining land in agricultural production.

PUBLIC AGENCY ADMINISTRATION

Determine the appropriate agency or agencies to manage and/or hold title to resources obtained through the Greenprint Challenge implementation process. Although it is envisioned that many of these resources will remain in private ownership with special protections, public acquisition of property and/or easements will also need to be employed.

Identify a governmental entity with specific authority to maintain and operate a parks, recreation program, and natural areas at the county level. This structure may involve existing agencies, reflecting a modification in current responsibilities and authorities. The entity should have clear responsibility to act both inside and outside the City of Lincoln and its extra-territorial limits.

Original Amend #	Draft Plan Page #	Brief Description of Amendment Request (See Request for more specific details.)	Source of Original Request
26	F 64	In Greenprint Challenge section, delete text as follows: "Develop planning guidelines, management techniques and supporting policies for preserving native prairies and grassland. For example, these areas remain healthiest when periodic burning is done to support plant regeneration. ~~Smoke buffers of one quarter mile around these sites are desirable.~~ Notification to adjacent property owners of possible burnings and smoke occurrences must occur as title to property changes. Research into such issues should examine how the implementation of the inherent needs of natural resources features (such as grasslands) with surrounding properties."	County Board
27	F 65	Delete one sentence: ~~(Also see the Homestead Trail extension in the Future Conditions: transportation section.)~~	Mary Roseberry Brown for Friends of Wilderness Park
28	F 69	Change the first "Floodplains" strategy to read as follows: ~~Manage floodplain development in a manner consistent with the findings of the Mayor's Floodplain Task Force.~~ "The Mayor's Floodplain Task Force is currently developing policy standards for floodplains that consider the natural functions played by these areas. Once the Task Force concludes its work, their policy recommendations should be considered for incorporation into the Comprehensive Plan."	Allan Abbott, Public Works & Utilities
		Future Conditions - Residential	