

S1-S2 SUBAREA PLAN

FOR SOUTH LINCOLN

PREPARED BY THE
LINCOLN/LANCASTER COUNTY PLANNING DEPARTMENT

FEBRUARY 1, 1999

Introduction

A. History of S1-S2 Subarea

1977, 1985, 1994

1977 Comprehensive Plan designates sub-basins S1 and S2 as “Urban Reserve” in the Land Use Plan. This area continues to be shown as “Urban Reserve” in the 1985 Comprehensive Plan, but is designated “Agricultural” in the 1994 Comprehensive Plan.

January 8, 1998

Release of Comprehensive Plan Annual Review. The “South Lincoln Subarea Plan” is included as proposed amendment #6A. Additions to commercial and residential uses from approximately 14th to 40th along Yankee Hill Road are included as proposed amendment #6B by Kent Seacrest. Staff recommends the subarea plan be deferred for further review and discussion due to the number of unresolved issues regarding land use, infrastructure and services.

January 28, 1998

After further discussion regarding the proposed S1 and S2 planning zones, staff recommends that these two areas be included in the future service limit with the entire area designated as Phase III, (areas “lacking most of the infrastructure required to support development”). Staff continues to recommend that the proposed land uses and phasing in Amendment #6B by Kent Seacrest be deferred.

March 1998

Adoption of revised Amendment #6A, “South Lincoln Subarea” showing the addition of urban Planning Zones S1 and S2, totaling 2,876 acres, to the “Future Urban Service Limit” and designating the land as “Urban Residential.”

Adoption of subarea planning strategy for Wilderness Park, including provisions to “address land use, stormwater, transportation and park use issues in and around the park...” and to “encourage mitigating measures to respect the sensitivity of the natural environment.”

August 1998

Submittal of modified Comprehensive Plan amendment proposal by Kent Seacrest to revise land uses showing a mix of commercial, office and residential from approximately 14th to 40th along Yankee Hill Road. Proposal accompanied by two change of zone requests and an annexation request.

December 1998

Public hearing on the S1-S2 Subarea Plan incorporates the proposed Comprehensive Plan amendment by Kent Seacrest.

B. General Character of the Area

Areas S1 and S2 are sub-basins within a larger drainage basin that flows to Salt Creek. Current zoning and land use in the S1-S2 Subarea is agricultural. Urban residential and commercial development exists to the north of the area along Pine Lake Road; the commercial center at 27th and Pine Lake Road is one of 10 large mixed use centers identified by the Comprehensive Plan. To the east is a low-density residential area with existing acreages and to the south is agricultural land. The western boundary of the S1-S2 Subarea generally abuts Wilderness Park, an area identified as “Natural/ Environmentally Sensitive” in the City-County Land Use Plan and currently under study.

Major streets that transect the area include Yankee Hill, Rokeby and Saltillo Roads running east-west, and 27th and 40th Streets running north-south. Earlier land use studies for the S1-S2 Subarea have emphasized the importance of utilizing the “Urban Village” concept, with a mix of uses incorporating neighborhood business centers and central public spaces designed at a “human scale.”

C. Subarea Planning Process

Format

One of the most important planning tools that has been incorporated into the Lincoln City-Lancaster County Comprehensive Plan is the subarea planning process. The Comprehensive Plan states that the purpose of subarea planning is to identify and address issues at a scale that is much more refined and responsive to local needs than can be attained under the broader scope of the Comprehensive Plan. Strategies include the use of subarea plans to “identify opportunities and constraints within developing areas of the community and to establish a unified vision of the area’s future including needs for infrastructure, community facilities and public services.”

Increasing development pressures in the City and County have emphasized the need to examine these issues during the subarea planning process in greater detail than is accommodated by a simple land use plan. The growing complexity of development issues requires a format that can address issues in the detail intended for subarea plans. The S1-S2 Subarea Plan, therefore, is distinguished by the fact that it incorporates text with supporting maps and graphics to augment the land use plan. The complete set of information is intended to be adopted and utilized as an integrated plan, and to set a precedence for subarea plans in the future.

Content

The need for a more refined analysis within the body of the subarea plan is particularly evident in the South Lincoln area, where there remain a substantial number of unresolved issues. Subarea plans in the past have not been adopted until fundamental land use and

infrastructure needs were settled. This includes a determination of the full impact upon parks, trails, natural resources, schools, water, sewer, other utilities and roads.

While the timely adoption of a subarea plan for this area is critical to guide the rapid development of S1 and S2, the S1-S2 Subarea Plan is atypical in that it outlines a number of important issues that are as of yet unresolved. These issues are clearly identified under the heading *"Issues Yet to Address."*

D. Use of the Subarea Plan

The S1-S2 Subarea Plan is proposed for inclusion in the Comprehensive Plan as an "Approved Subarea Plan." The Comprehensive Plan includes the following definition of a subarea plan:

- ! *"Subarea plans are officially approved documents intended to add detail to this Comprehensive Plan and to guide public and private programs and actions in specific geographic regions."*

The S1-S2 Subarea Plan identifies issues and details that will need to be addressed in the future. The plan also offers specific guidance as to how development and services should be accomplished within the area. The subarea plan should be used in the following circumstances:

1. *To assist in the review of preliminary plats, change of zones, special permits or other development proposals in the area.* The subarea plan will serve as a guide to private individuals who prepare development proposals and to public officials in the review of those propositions. The subarea plan is a tool intended to be used in concert with the regulations of the zoning and subdivision ordinances to guide development. While the subarea plan serves as an official guide for growth in an area, it does not have the same standing as adopted ordinances.
2. *To assist city and county agencies as they prepare infrastructure and service planning for the subarea.*
3. *To assist in future subarea and land use planning.*

I. Relationship to Wilderness Park Study

A. Subarea Plan Background

"Urban planning zones" S1 and S2 were formally incorporated into the Comprehensive Plan earlier this year as part of the Annual Review process. At that same time, the Lincoln City Council and Lancaster County Board had before them three affiliated, proposed Comprehensive Plan amendments:

- (1) **Wilderness Park Study** -- This amendment proposed the development of a subarea plan for Wilderness Park that would "address land use, stormwater, transportation, and park use issues."
- (2) **Revised Land Uses Near 14th and Pine Lake Road** -- This amendment would have modified previously approved changes to the long range land use plan; i.e., in general converting an "employment center" area (i.e., industrial) to "low density residential" and "parks and open space." This action would have effectively reversed earlier land use amendments approved by the elected officials.
- (3) **Prohibited Land Uses Near Wilderness Park** -- This amendment would have prohibited "urban residential, low density residential, commercial or industrial development along the current borders" of the Park.

Upon completing the public hearing process, the City Council and County Board voted to approve the preparation of a Wilderness Park Study (Item No. 1 from above), but turned down both the land use changes (Item No. 2) and prohibitions on uses near the Park (Item No. 3.) In taking these actions, the Council and Board recognized that various development proposals for the S1 and S2 areas would likely be ushered forth prior to the completion of the Wilderness Park Subarea Study -- a study which was to take from 18 to 24 months to complete.

B. Wilderness Park Study Process

Following the adoption of the Annual Review Plan and related budget actions, City and County staff initiated work on the Wilderness Park Study. The Study includes five main elements:

- ! Ecosystem -- This element entails an inventory of the ecological condition of the Park. This task is nearing completion, with the results of the study to be used as the environmental baseline for other elements of the Park Study.
- ! Stormwater Management -- This element will examine the potential impact

further urbanization may have on Salt Creek and the Park. Opportunities for increasing flood storage capacity through detention and retention basins and wetlands will be considered. Targeted completion is set for early summer of 1999.

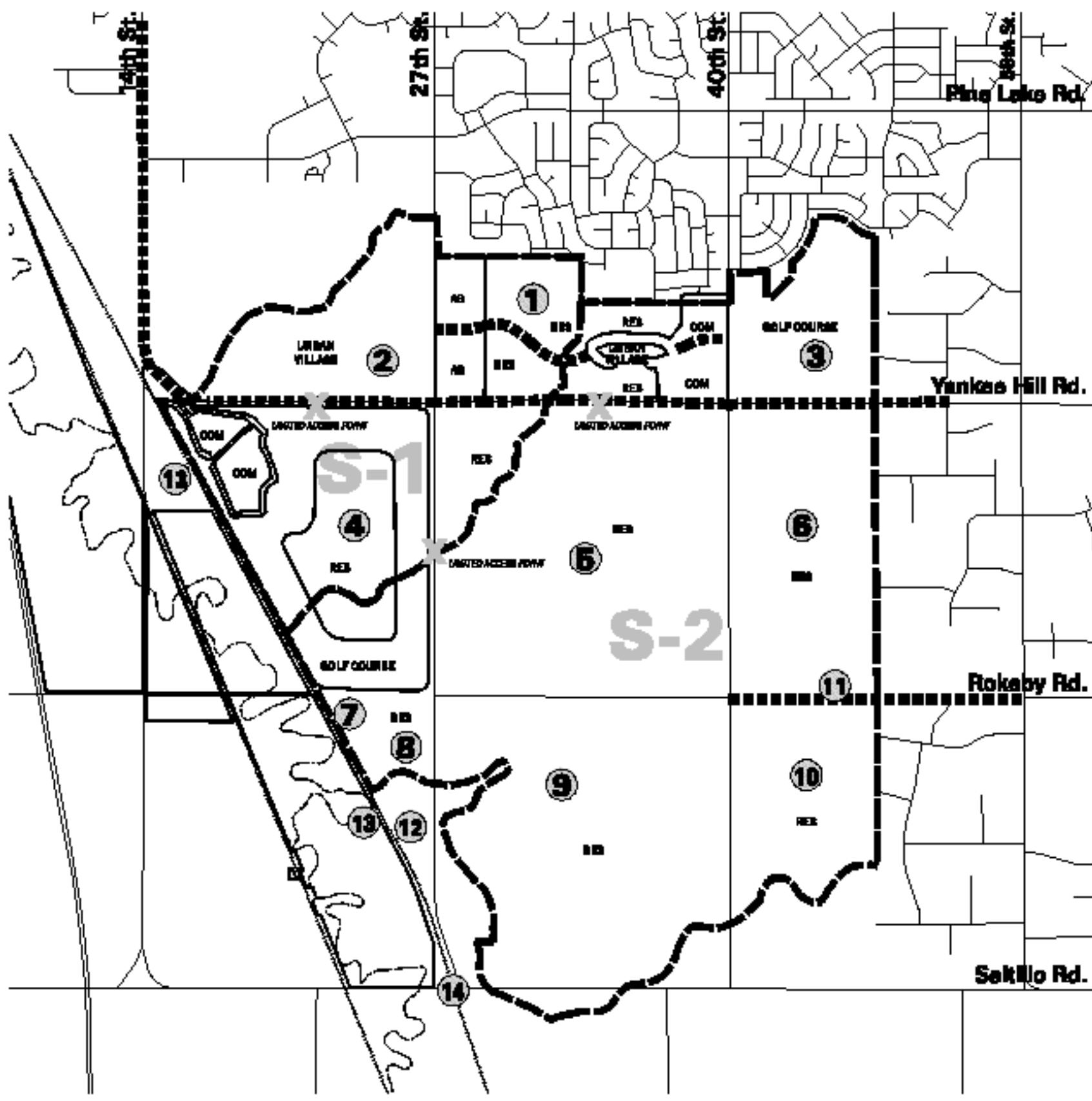
- ! Transportation -- This element will review issues relating to internal Park transportation, traffic facility alternatives for serving areas S1 and S2 and adjacent areas, and lastly, the impact such facility alternatives may have on the Park. Conclusion of this element is set for the summer of 1999.
- ! Public Involvement -- This element will seek to define a consensus among the various Park stakeholders. The "issues identification" portion of the element is complete, with the formulation of a working study group underway.
- ! Plan Integration -- This last element will focus the results of the previous four elements into a single working document. This report will serve as the basis for the formal public review process to occur during the later part of 1999.

C. Subarea Planning Challenges

In connection with the Wilderness Park Study, the challenges posed by this draft Subarea Plan envelop issues of both **process** and **substance**. Related underlying tenets of this draft Plan which are associated with these two conditions include:

1. Recognize the existence of a community-wide planning effort whose task is to explore the continuing role of Wilderness Park as an ecological and recreational asset.
2. Integrate information, findings, and conclusions from the Wilderness Park Study as they emerge from the consensus building actions of the Park Study.
3. Mitigate acknowledged potential Park impacts where and when possible as part of the continuing development process in S1 and S2.
4. Seek expeditious completion of the Wilderness Park Study so as to bring focus and clarity to both the issues and solutions of the interrelationships between the Park and the surrounding areas.

5. Undertake creative and judicious long range infrastructure planning that acknowledges the interests of the Park, the subarea and the community as a whole.



South Lincoln Urban Planning Zones S-1 and S-2

- ② See Map Key
- ▬▬▬▬▬ New Streets
- ▬▬▬▬▬ Urban Planning Zone



II. S1-S2 Subarea Plan Map Key

PLAN NOTES:

1. **Current Development Proposal:** 270.7 acres. An application that consists of:

"P" Public	3.5 acres
"R3" Residential	124.8 acres
"R4" Residential	58.9 acres
"B2" Commercial	55.4 acres
"03" Commercial	28.1 acres

2. **Urban Village Proposed:** 200.92 acres. No specifics given at this point. Under approach employed in "Directional Growth Analysis", for transportation planning purposes this is assigned: (based on 1996 Occupied Square Footage, City Wide)

70.34%	Residential
4.33%	Commercial
3.55%	Industrial
3.15%	School Development
1.97%	Park Development
16.66%	Contingency and Growth Accommodation

No arrangement of land uses will be assigned until land owners have been contacted, and their development objectives determined, if any.

3. **Yankee Hill Golf Course.** 165.76 Acres (In sub basin).

4. **Current Development Proposal Submitted:** 434.36 acres. An application that consists of:

"R3" Residential 392.37 acres, proposed to be developed with a Golf Course, residential located interior on the course.

"03" Office 41.99 acres, located at the northwestern corner.

5. **No Development Proposal Submitted:** 640 acres. Under approach employed in "Directional Growth Analysis", for transportation planning purposes this is assigned: (based on 1996 Occupied Square Footage, City Wide)

70.34%	Residential
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4.33%	Commercial
3.55%	Industrial
3.15%	School Development
1.97%	Park Development
16.66%	Contingency and Growth Accommodation

No arrangement of land uses will be assigned until land owners have been contacted, and their development objectives determined, if any.

- 6. No Development Proposal Submitted:** 323.62 acres. Under approach employed in “Directional Growth Analysis”, for transportation planning purposes this is assigned: (based on 1996 Occupied Square Footage, City Wide)

70.34%	Residential
4.33%	Commercial
3.55%	Industrial
3.15%	School Development
1.97%	Park Development
16.66%	Contingency and Growth Accommodation

No arrangement of land uses will be assigned until land owners have been contacted, and their development objectives determined, if any.

- 7. Construct Rokeby Road:** This presently unbuilt portion of Rokeby Road would be addressed as part of the platting of the golf course.

- 8. No Development Proposal Submitted:** 57.75 acres. Under approach employed in “Directional Growth Analysis”, for transportation planning purposes this is assigned: (based on 1996 Occupied Square Footage, City Wide)

70.34%	Residential
4.33%	Commercial
3.55%	Industrial
3.15%	School Development
1.97%	Park Development
16.66%	Contingency and Growth Accommodation

No arrangement of land uses will be assigned until land owners have been contacted, and their development objectives determined, if any.

- 9. No Development Proposal Submitted:** 572.24 acres. Under approach employed in “Directional Growth Analysis”, for transportation planning purposes this is assigned: (based on 1996 Occupied Square Footage, City Wide)

70.34%	Residential
4.33%	Commercial
3.55%	Industrial
3.15%	School Development
1.97%	Park Development
16.66%	Contingency and Growth Accommodation

No arrangement of land uses will be assigned until land owners have been contacted, and their development objectives determined, if any.

- 10. No Development Proposal Submitted:** 208.60 acres. Under approach employed in “Directional Growth Analysis”, for transportation planning purposes this is assigned: (based on 1996 Occupied Square Footage, City Wide)

70.34%	Residential
4.33%	Commercial
3.55%	Industrial
3.15%	School Development
1.97%	Park Development
16.66%	Contingency and Growth Accommodation

No arrangement of land uses will be assigned until land owners have been contacted, and their development objectives determined, if any.

- 11. Unbuilt Portion of Rokeby Road:** To be addressed as future development proposals emerge.
- 12. Floodplain avoided in definition of the subarea.**
- 13. Wilderness Park.** All development contributing stormwater to Wilderness Park/Salt Creek shall reflect Best Management practices and Subregional Environmental Design.
- 14. Saltillo Road viaduct over the railroad tracks.** Proposed by County Engineer in the County Road and Bridge Construction Program.

III. Environment/Natural Resources

Introduction

One of the goals of the Comprehensive Plan is to make the preservation, protection and enhancement of our natural resources and open space an integral part of the current and long range planning process. Our Community Vision states that “as Lincoln and community grows, it will respect its important environmental resources and use them to enhance the quality of urban and rural development. Land use policies will encourage development which conserves resources for future generations.”

The subarea planning phase is the logical level at which to accomplish this. Environmental issues and natural resources are addressed in this section of the S1-S2 Subarea Plan just as infrastructure, community facilities, and public services are examined in other sections to identify opportunities and constraints and to establish a unified vision of the area’s future. Environmental issues may take on a special degree of sensitivity in this area because of the area’s proximity to Wilderness Park, which is identified as a “Natural/Environmentally Sensitive” area in the Lincoln/Lancaster County Land Use Plan and is currently under study.

Other important goals of the Comprehensive Plan related to natural resources and the environment include:

- ! *Assure that economic development is accomplished with respect for environmental quality.*

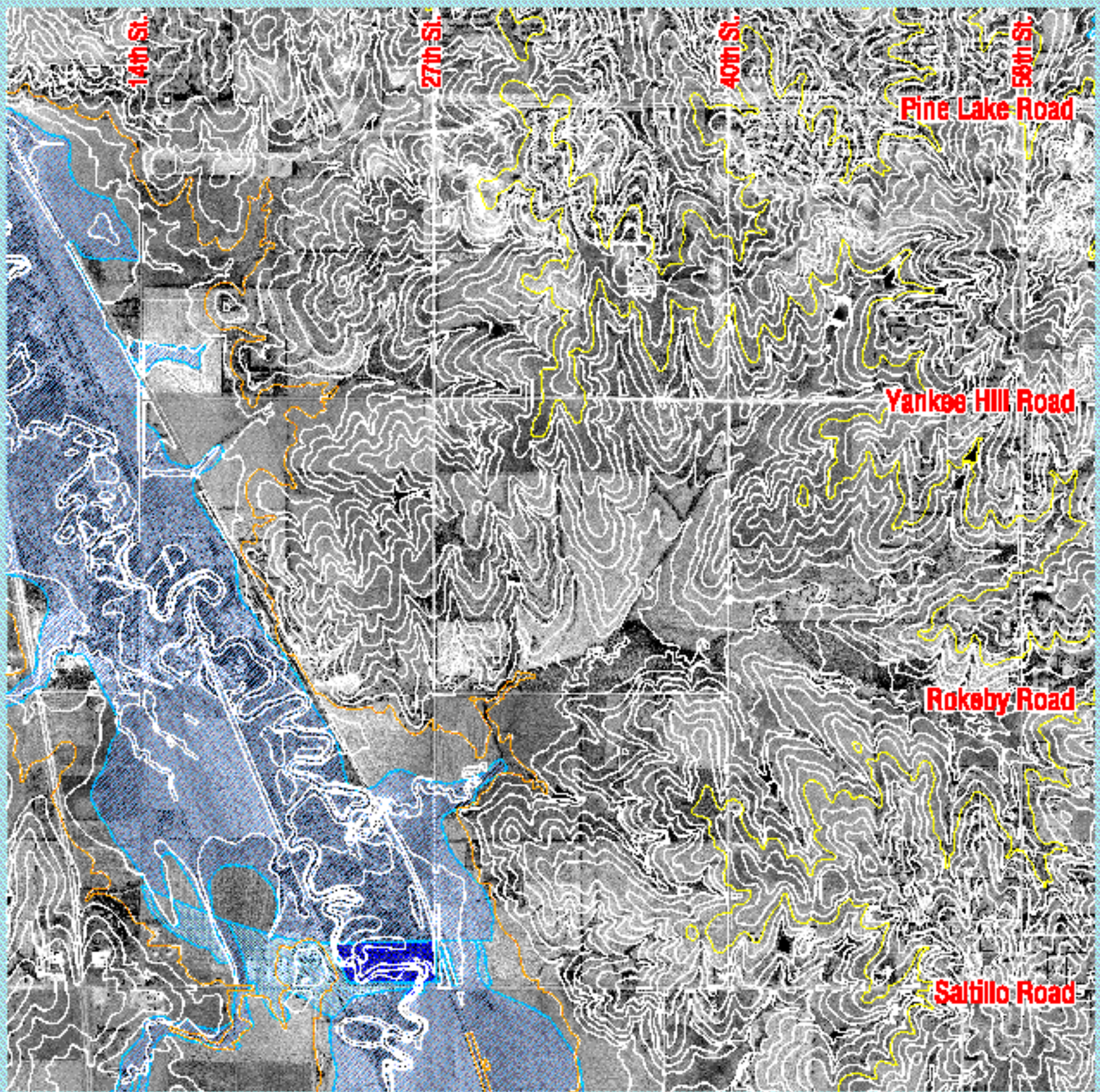
- ! *Ensure the preservation and proper utilization of environmental resources (e.g., prime agricultural land, soils, water, clean air, absence of noise, native prairie and woods.)*

- ! *Respect the natural character of areas by incorporating natural features into new developments and adjacent existing projects.*




A. Topography

Existing Conditions

- ! The figure “*Urban Planning Zones S1 & S2: Aerial View with Floodplain and Contours,*” on the following page shows 10-foot contour intervals defining the topography in this area, which is gently undulating and generally sloping from northeast to southwest.



Urban Planning Zones S-1 & S-2: Aerial View with Flood Plain and Contours

-  10 ft. Elevation Contour Line
-  200 ft. Elevation
-  250 ft. Elevation

Floodplain

-  500 Yr. Flood Plain
-  100 Yr. Flood Plain
-  Roadway



- ! Basins S1 and S2 are each bisected by a major tributary of Salt Creek and further dissected by several secondary drainageways.

Future Needs

- ! Development in this area should respect the natural contours of the landscape. Grading should be kept to a minimum to reduce erosion, maintain the natural drainage system and vegetation, and to keep disturbance of the natural soil layers to a minimum.

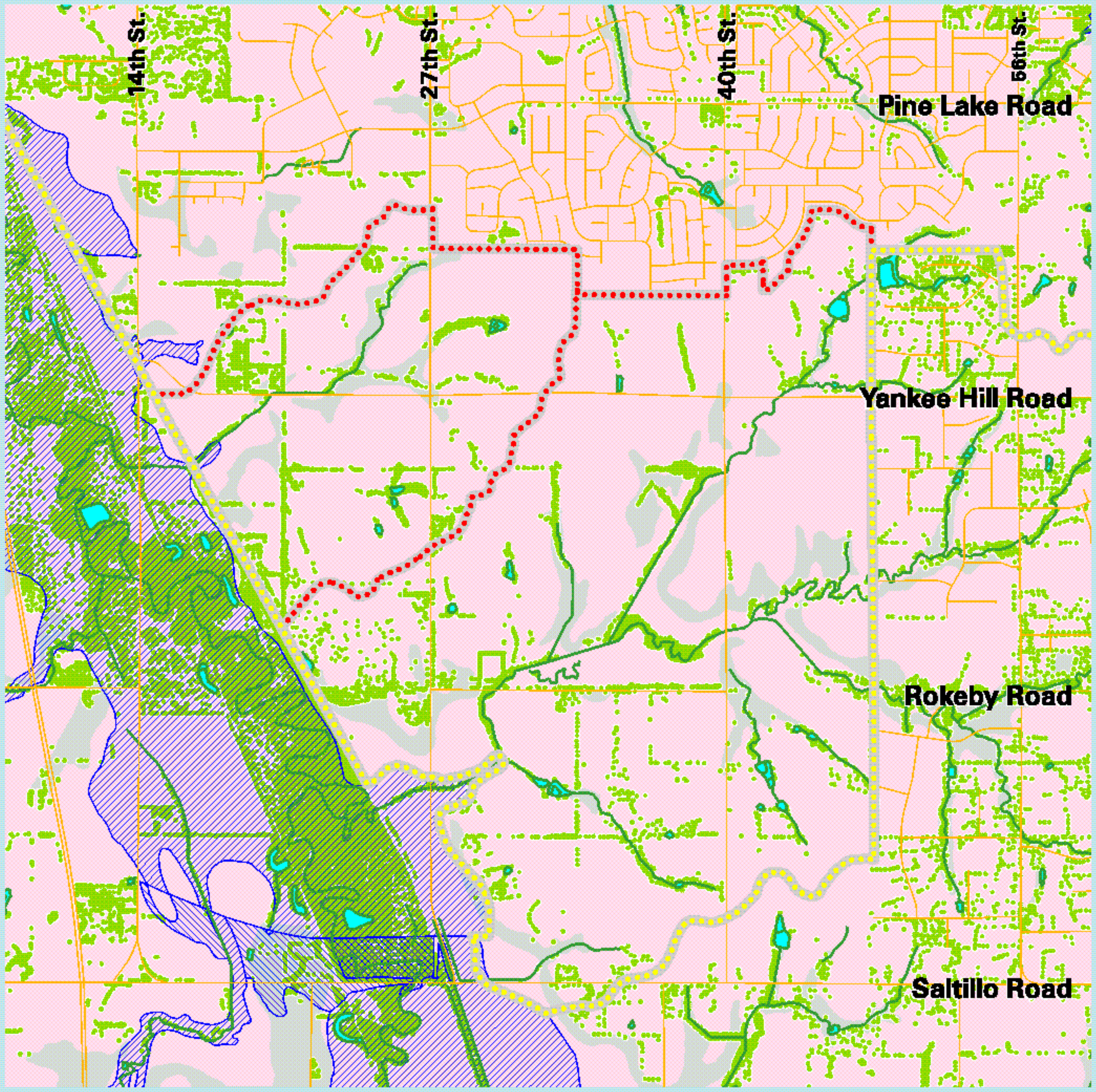
B. Soils

Existing Conditions

- ! Alluvial Soils and other soils subject to flooding are generally associated with the drainageways in this area and are shown on the following page in *"Urban Planning Zones S1 & S2: Natural Resources."* These soils are of particular importance due to the fact that no floodplains are mapped along the drainageways in the S1-S2 Subarea.
- ! Soils subject to flooding range from those on frequently flooded bottom lands and occasionally flooded stream terraces, to those along drainageways of uplands and those associated with wetlands.
- ! Other soils in the area range in degree of slope, moisture content and ability to drain water, erodibility, texture, suitability for cultivated crops, and appropriateness for engineering and building.






Future Needs

- ! The Soil Survey of Lancaster County, Nebraska, published by the USDA Soil Conservation Service should be carefully referenced prior to development in this area to address issues regarding soil characteristics.
- ! Future development in this area should show great sensitivity to floodprone soils. Development should strive to conserve a large portion of these areas within an unbuilt, vegetated buffer along the drainageways.
- ! Other soil characteristics should be considered carefully during the platting and design phase, such as erodibility, suitability for building, and soils associated with steep slopes. Soils connected with a high water table could suggest wetland areas that ought to be preserved.



Urban Planning Zones S-1 & S-2: Natural Resources

Floodplain, Alluvial Soils, Wetlands & Water Bodies and Tree Masses

-  Tree Masses
-  Wetland & Water Bodies
-  Alluvial Soils
-  Future Service Limit
-  Urban Planning Zone
- Floodplain**
-  500 Yr. Flood Plain
-  100 Yr. Flood Plain
-  Floodway



C. Floodplain

Existing Conditions

- ! The S1-S2 Subarea includes small areas of FEMA-mapped 100-year floodplain associated with Salt Creek which is shown on the previous two figures.
- ! Nearly the entire reach of the Salt Creek floodplain associated with this area has no designated floodway.
- ! There is no FEMA-mapped floodplain for Salt Creek tributaries that flow throughout this area. Alluvial soils may be a good general indicator of the 100-year floodplain.

Future Needs

- ! Due to the lack of a designated floodway throughout the majority of the Salt Creek floodplain in this area, most grading or construction in the 100-year floodplain of Salt Creek will require a hydrological study demonstrating no increase greater than 1 foot in the base flood elevation of the 100-year flood.
- ! Recently, concerns have been raised regarding the loss of storage capacity of the floodplains in Lincoln as they are developed, and there has been an exploration of the concept of 'No Net Rise'.
- ! The National Flood Insurance Program (NFIP) Community Rating System program encourages communities to consider that the minimum requirements of the NFIP do "not account for the loss of floodplain storage caused by allowing the fringe to be filled" and that filling in the flood fringe "means more water will be sent downstream and increased flood heights will result."
- ! Comprehensive Plan specifications include:

Text: "Maintaining the capacity of our flood ways and flood plains to contain and carry flood waters and prevent damage should be an important consideration in all planning and development."

Text: "...the current regulations which allow the placing of fill in a floodplain may not be adequate and the issue of compensatory stormwater storage should be considered."

- ! Development in the S1-S2 Subarea should strive to compensate for any fill in the 100-year floodplain - ideally to achieve "No Net Rise" - both in the mapped floodplain of Salt Creek and the unmapped floodplains of the tributaries.

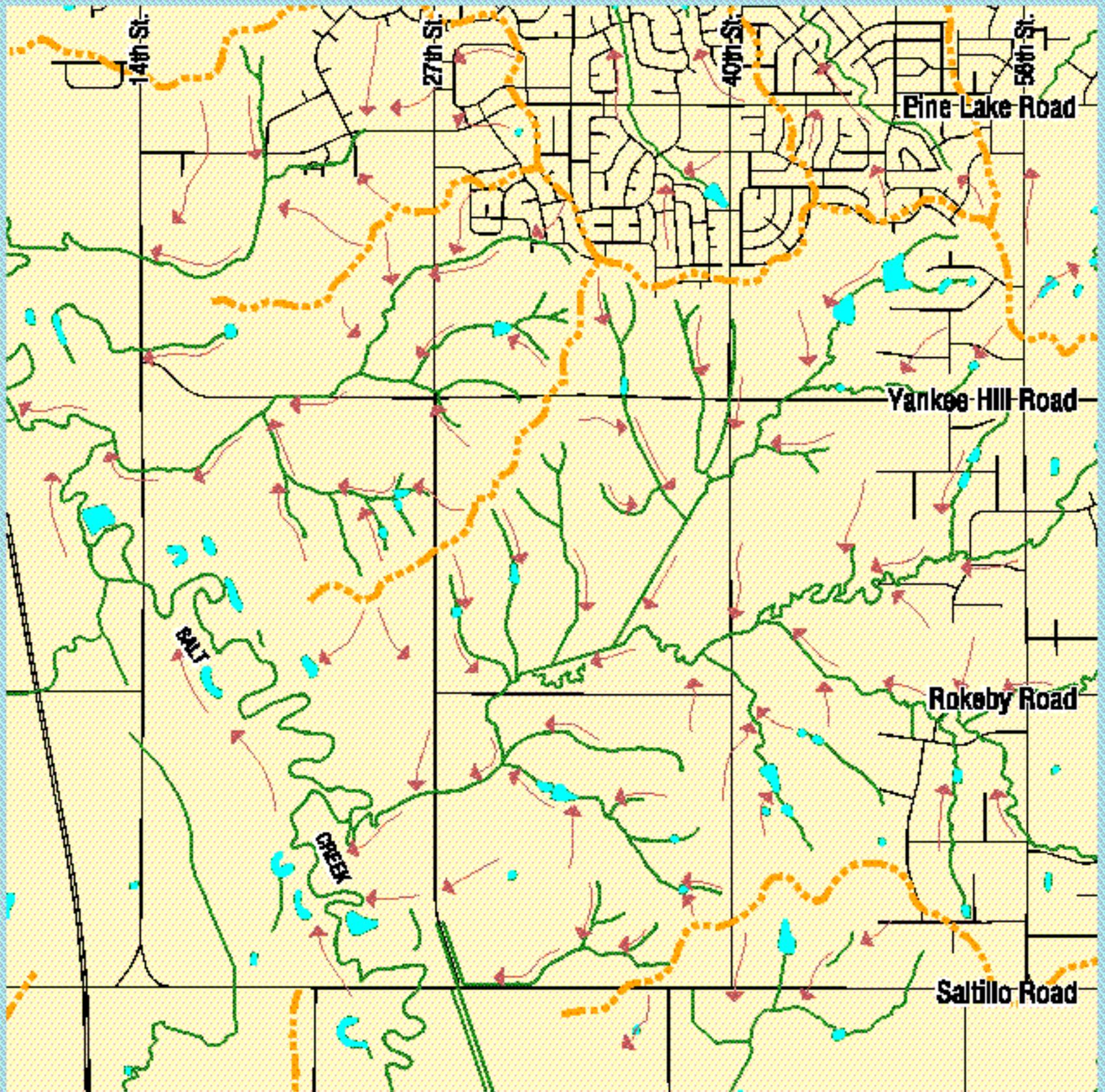
Issues Yet to Address

- ! Specific details related to the floodplain will be addressed in greatest detail at the time of subdivision, but the issues should be given attention from the outset so that they may be taken into consideration throughout the process of developing more detailed designs.
- ! The S1-S2 Subarea will be the next sub-basin studied and mapped for the Stormwater Basin Planning Project. The Lower Platte South Natural Resources District (LPSNRD) has noted that important information relating to stormwater and drainage will be developed in the near future which should be considered as the development of this area is designed.
- ! The LPSNRD has indicated that there appears to be an opportunity for a regional stormwater retention facility in this area. Potential sites will be further investigated with the Stormwater Planning Project. Until such a facility is identified, on-site detention must be provided.





D. Drainageways/Buffers

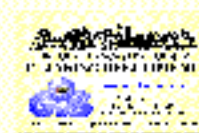
Existing Conditions

- ! Drainageways and directional flow are shown on the following page in "*Urban Planning Zones S1 & S2: Drainage and Stream Corridors.*" All water in this area flows downstream into Salt Creek through Wilderness Park.
- ! Many of the drainageways have associated natural vegetation or "buffers" such as tree masses (*Natural Resources*) and understory plant material.
- ! Vegetated buffers along drainageways can act as "greenways," important terrestrial habitat and movement corridors for wildlife, and serve as natural links to larger natural areas or parks.
- ! Understory vegetation associated with drainageways is beneficial because it acts as a natural filtration system for pollutants and improves water quality. The meanders, leaf litter and groundcover associated with natural wooded streams can also slow stormwater runoff and reduce soil



Urban Planning Zones S-1 & S-2: Drainage & Stream Corridors

-  Wetlands and Water Bodies
-  Natural Stream Corridors
-  Ridgelines
-  Direction of flow



erosion and stream sedimentation.

Future Needs

- ! Comprehensive Plan specifications include the following:

Text: "The preservation and improvement of natural landscapes maintains or increases the useful attenuation characteristics of the drainage regime. Natural drainage ways also provide an excellent opportunity for the development of trails, and floodplains may be beneficially used for open space, parks and recreation or parking."

Strategy: "Develop project approaches which view stormwater as an asset, utilizing natural drainage patterns, retention and detention facilities, wetlands, and drainage corridors as natural ways to manage run-off."

Goal: "Protect natural stream corridors and enhance man-made open channels for the purpose of improving water quality and reducing flood damage and erosion while retaining open space. "

- ! There is a great opportunity in the S1-S2 Subarea for conservation design concepts which protect and enhance natural corridors. Developments in this subarea should make every effort to preserve natural drainageways and to protect and enhance natural vegetative buffers along them. This approach is recommended by the Lower Platte South Natural Resources District (LPSNRD).
- ! "Greenway" corridors associated with the drainageways in this area could accommodate trail systems and serve as natural links to Wilderness Park for both people and wildlife.
- ! As the area develops, protecting and enhancing understory vegetation will be an important component of vegetated buffers along drainageways to trap pollutants, sediment, or excessive nutrients dissolved or suspended in stormwater runoff and to keep them from flowing downstream into Salt Creek. The LPSNRD recommends enhancing natural drainageways with additional buffers planted with native grasses and trees.

Issues Yet to Address

- ! The minimum effective drainageway buffer width depends on a number of

factors such as size of the drainage, permeability of soils, steepness of slopes, and the amount and type of plant material.

- ! The City and County will work to establish more specific guidelines regarding buffer width and vegetative composition, based on an examination of guidelines established by other resource agencies. Until further review is possible, information regarding buffers available from the Lower Platte South Natural Resources District (LPSNRD), the Natural Resources Conservation Service (NRCS), and the U.S. Army Corps of Engineers will be used as a general guideline for review.
- ! Until more specific guidelines are established, buffer width should as a minimum be determined according to the U.S. Army Corps of Engineers formula which has been incorporated into the draft recommendations for the Stormwater Basin Planning Project: minimum buffer width equals the channel bottom width plus 60 feet plus six times the channel depth.
- ! The Corps of Engineers formula appears to suggest the need for buffers from approximately 80 to 100 feet in width along drainageways in this area.

E. Wetlands and Water Bodies

Existing Conditions

- ! The *Natural Resources and Drainage* figures show those 'Wetlands and Water Bodies' in the area indicated by the National Wetlands Inventory (NWI). Some of these may be farm ponds, while others may be wetlands. The NWI is not a complete, site-specific inventory, and it is always possible that additional wetlands are present.
- ! Comprehensive Plan specifications include:

Text: "Wetlands and water bodies provide a number of functions which are important to the health and welfare of the community: they provide storage for stormwater and help to control flooding, they provide habitat for threatened and endangered species, they improve water quality, they provide fish and wildlife habitat, they provide recreational opportunities and they are aesthetically pleasing."

Goal: "Maintain, preserve, and enhance existing wetlands and restore degraded wetlands. "

Future Needs

- ! As this area develops, it will be important to complete an analysis specific to each site that delineates any wetlands present.
- ! Future development should strive to protect wetlands and water bodies in the S1-S2 Subarea.
- ! Restoration or creation of wetlands in this area is also encouraged to maintain and enhance the quality of stormwater runoff as the area develops.

F. Tree Masses

Existing Conditions

- ! Existing tree masses are shown on the *Natural Resources* figure. Generally, a mix of hardwood trees are found in masses along the drainageways and in some field rows. Eastern red cedar occurs in scattered patches throughout some of the open fields. A few evergreen trees have been planted as windbreaks around farm residences.
- ! Tree masses are valuable natural resources in that they provide shade and reduce reflective heat gain, help to prevent soil erosion, slow stormwater through interception, provide habitat for wildlife and contribute aesthetic quality to an area.

Future Needs

- ! To the maximum extent possible, future development should preserve and enhance existing tree masses, with particular attention to the protection of mixed hardwood stands associated with the natural drainageways.

G. Best Management Practices (BMP's)

Existing Conditions

- ! Existing landuse in the S1-S2 Subarea is agricultural. Current best management practices for this land use include:
 - # Terraces along contours of the landscape to slow stormwater runoff, reduce erosion, and retain runoff for groundwater recharge.
 - # Farm pond reservoirs which help to reduce flooding by holding back

peak flows of stormwater runoff.

- # Preservation of natural drainageways and tree masses.
- # Contour buffer strips and filter strips along waterways to slow runoff and to trap sediment and other pollutants.

Future Needs

- ! Development of this area will alter the landscape by adding rooftops, parking lots, roads, etc., all of which will expand the total amount of impervious surface area and increase stormwater runoff. Preservation of natural meandering drainageways, tree masses, wetlands and water bodies, and the use of vegetative buffers and porous paving material wherever possible will be important elements to effectively manage runoff as the area grows.
- ! The use of buffer strips and the preservation of natural drainages and tree masses will be essential in addressing water quality concerns related to pollutants and sedimentation as the area urbanizes, such as the potential for herbicides and excessive nutrients from residential lawns and the golf course, and oils and sediments from roadways and parking lots.
- ! The Lower Platte South Natural Resources District recommends that retention facilities be considered in lieu of detention to take advantage of the water quality benefits provided.
- ! The practice of specific BMP's during grading and construction is critical. Use of silt fences to trap sediment, proper location and protection of soil stockpiles, early seeding and mulching of soil, sensitivity to drainageways and the preservation of existing vegetation should be implemented to the maximum extent possible.

IV. Community Services

A. Schools

Existing Conditions

District Boundaries:

- ! Rokeby District #152 serves most of the area, although about 400 acres between 27th and 40th Streets, just north of Rokeby Road is already in the Lincoln Public School District (LPS).
- ! Cheney District #153 serves the area east of 40th Street, with a small portion along the southern end of the subarea is in Norris District #160.

School Facilities within Subarea:

- ! Elementary: Cavett Elementary, at 37th and San Mateo Lane (half a mile north of Yankee Hill Road.)
- ! Middle School: Scott Middle School, at 22nd and Pine Lake Road.

Future Needs

- ! With annexation into the City of Lincoln, the subarea will fall under the jurisdiction of Lincoln Public Schools.
- ! LPS Staff have not undertaken a study of future school needs for this subarea. However, preliminary indications from LPS staff suggest the need for the following additional facilities:
 - # Two elementary schools
 - # One middle school
 - # One high school
- ! Potential school sites already acquired by LPS:
 - # 30th Street and south side of Yankee Hill.
 - # 70 acre high school site on west side of 14th and Pine Lake Rd.

Issues Yet to Address:

Financing

- ! LPS has not yet addressed how it will build and operate two new elementary schools and a middle school in addition to operating the high school on a yearly basis. The Rokeby school district was contacted about annexation proposals in this area, but has yet to comment.

B. Fire Protection Services

Existing Conditions

District Boundaries:

- ! Currently the subarea is served by the Southwest and Southeast Rural Fire Districts.

Fire Protection Facilities In or Near Subarea:

- ! The Lincoln Fire Department currently has a station at 27th and Old Cheney Road.
- ! Neither rural fire district has any facilities in this area.

Future Needs

- ! Upon annexation, the City of Lincoln is responsible for serving this area and for the potential reimbursement of the rural fire districts for the loss of revenue, particularly for districts with bond issues.
- ! At this time, the Lincoln Fire Department has not yet undertaken a complete study of future fire protection needs of this entire subarea.. Staff anticipates to adequately serve this area with a three minute response time the following additional facility will be necessary:
 - # One new fire station in the vicinity of 40th and Yankee Hill Road.

Issues Yet to Address:

- ! The Lincoln Fire Department will need to complete its study of the fire protection needs so the City can obtain land in an area to adequately serve this area. It will be important for the fire station to be properly sited so that it

can maintain a three minute response time.

C. Parks & Recreation

Existing Conditions

Park Study:

- ! The Wilderness Park Study is currently underway.

Park Facilities In or Near Subarea:

- ! Neighborhood Parks: Porter Park on S. 27th Street, ½ mile south of Pine Lake Road is on the edge of the subarea and is undeveloped at this time. An undeveloped neighborhood park is also approved in Country View Estates at approximately 50th Street, ½ mile south of Pine Lake Road.
- ! Community Parks: The citizens of Lincoln recently approved a bond issue to provide four ball fields and two soccer fields in Densmore Park on S. 14th Street, north of Pine Lake Road.
- ! Regional Parks: Wilderness Park runs along the entire western edge of the subarea.
- ! Recreation Centers: The City is in the process of selling land in Densmore Park to the YMCA for the construction of an indoor recreation center.
- ! Golf Courses: The Yankee Hill private country club and golf course has recently opened on the northeast corner of 40th and Yankee Hill Road. The Wilderness Ridge golf course, a private course open to the public, has been approved on the southwest corner of 27th and Yankee Hill Road. The Knolls golf course is outside the subarea on Old Cheney Road.

Future Needs

- ! Preliminary indications from the Parks and Recreation staff suggest the need for the following additional facilities:
 - # Four neighborhood parks (8 to 10 acres each)
 - # One small neighborhood park in the area of the proposed Wilderness

Ridge golf course and subdivision

Issues Yet to Address:

- ! The Parks and Recreation Department has not obtained any land for the additional neighborhood parks that are needed. The Parks Department has in the past noted its financial difficulty in adequately maintaining the existing parks and recreation facilities.
- ! Issues related to the completion of the Wilderness Park Study.

D. Lincoln City Libraries

Existing Conditions

Library Facilities within Subarea:

- ! The citizens of Lincoln approved a bond issue in November 1998 to permit the construction of a 30,000 square foot library in Densmore Park on S. 14th Street, north of Pine Lake Road.

Future Needs

- ! The Lincoln City Library staff have stated that the future branch library in Densmore Park will be adequate to serve to serve this entire subarea. The Comprehensive Plan states a “consolidated library system will eventually consist of a main Bennet Martin Public Library and four branch libraries, one to serve each quadrant of the City.” (Page 167 of the Plan.)

Issues Yet to Address:

Financing:

- ! The Lincoln City Library will have to provide for the annual operating expenses of the new branch library once it opens.

IV. Public Utilities

A. Water

Existing Conditions

District Boundaries:

- ! The area from approximately east of S. 40th Street is in the Lancaster County Rural Water District #1.
- ! The subarea to be served be split between service from the City's High Duty Pressure District and Southeast Pressure District.

Water Facilities within Subarea:

- ! A 24 inch water main is located in Pine Lake Road from 14th to 84th Street.
- ! A reservoir is located on 56th Street, ½ mile south of Pine Lake Road.

Future Needs

- ! The Water Department Staff have not undertaken a study of future needs for this subarea. Currently staff anticipate the water master plan will be updated in a few years, which will include the information and modeling necessary on how to serve this subarea. However, preliminary indications from staff suggest the need for the following additional facilities:
 - # At least nine miles of water mains
 - # Additional storage capacity at the 56th and Pine Lake Road reservoir site
- ! The impact of the City's expansion on the Rural Water District should be slight since only a small area of the district will be impacted.

Issues Yet to Address:

Financing:

- ! The Lincoln Water System has not yet addressed how it will build the necessary improvements for this area. These water mains are not yet in the City's Capital Improvement Program (CIP). As part of the proposal for extending services to the Wilderness Ridge golf course and development along Yankee Hill Road, an amendment to the CIP will be necessary to show a few mains in the upcoming years.
- ! According to an estimate that was prepared by the Public Works and Utilities Department in August 1998, it will cost over \$7.8 million to provide city water service to this area. This does not include the cost of water mains within any subdivision.

B. Sanitary Sewer

Existing Conditions

Sewer Facilities within Subarea:

- ! Currently, the City's 48 inch sanitary sewer trunk line ends to the west of 14th Street, ½ mile outside of this subarea.

Future Needs

- ! The sanitary sewer needs for this subarea have already been determined as part of the City's Wastewater Master Plan, which shows the need for the following additional facilities:
 - # The Salt Creek Basin Relief sewer line from the Theresa Street treatment plant to approximately Old Cheney Road. This is a multi phase project. The first phase is complete. Phase II and III are shown in the Comprehensive Plan which would extend the relief sewer line from near the Devaney Center at 14th & Military to approximately N Street. The remaining four mile long extension is not in the CIP. The Public Works Department has determined that there is capacity in the existing sewer trunk line so that development may proceed in this area prior to the relief sewer line being completed. Previous studies conducted by Olsson Associates had concluded that there was not enough capacity in the existing sanitary sewer line to serve the S1 and S2 subarea. The entire sewer relief project is identified in the

Comprehensive Plan as sewer extension #12 and as "Future Sewer Improvements Approved by Comprehensive Plan."

- # An extension of the 48 inch trunk sewer line from near 14th and Pine Lake Road south of Rokeby Road. This sewer line is currently shown in the Comprehensive Plan as "Potential Sewer Improvements Beyond The Plan." As part of the proposal for extending services to the Wilderness Ridge golf course and development along Yankee Hill Road, an amendment to the CIP has been proposed to show construction in 1999 of the sewer line to serve the S1 sub-basin and a small portion of the S2 basin.

Issues Yet to Address:

Financing

- ! Public Works has not yet addressed how it will build the necessary improvements for this area. The later phases of relief sewer line and trunk line extension to the S2 sub-basin are not yet in the City's Capital Improvement Program (CIP).
- ! According to an estimate that was prepared by the Public Works and Utilities Department in August 1998, it will cost over \$14.1 million to provide city sewer service to the S1 and S2 subarea. This does not include the cost of mains within any subdivision.

C. Lincoln Electric System

Existing Conditions

District Boundaries:

- ! The area generally a 1/4 mile south of Rokeby Road is in the Norris Public Power District Service Area. LES serves the area to the north of Rokeby.

Electrical Facilities within Subarea:

- ! A 345 kV line was recently constructed from 27th to 84th Street, north of Yankee Hill Road.
- ! Substations are located on 27th and 56th, both approximately 1/2 mile south of Pine Lake Road.

Future Needs

! LES preliminary indications from staff suggest the need for the following additional facilities:

- # Additional substations
- # Additional transmission lines

Issues Yet to Address:

Financing

- ! LES has not yet addressed how it will build the necessary improvements for this area. These improvements are not yet in the City's Capital Improvement Program (CIP). As part of the proposal for extending services the proposed development along Yankee Hill Road does not address any of the future needs of LES.
- ! LES notes that the proposed urban development is outside the existing LES service area and states that "as the city limits expand, LES cannot provide service to the development outside of our service area. This presents a planning dilemma to the electric utilities. Should LES plan to expand our infrastructure to serve these areas....or should Norris PPD develop a new infrastructure to provide service? LES agrees with the Comprehensive Plan statement that the City of Lincoln should be served by one electric utility. (Page 149 of the Plan) This jurisdictional issue needs to be resolved before LES can develop detailed plans on how to best serve these areas."

V. Transportation

A. Roadways

Existing Conditions

The roadway network within the South Lincoln Urban Planning Zones S1/S2 is a county road system that is an extension of the existing urban area "mile-line" or "section-line" roadway system. The north-south roads serving this area form a consistent one-mile interval system which is continuous from Saltillo Road to Pine Lake Road. The east-west roads system is incomplete at the second-mile interval (Rokeby Road) with continuous running at Yankee Hill and Saltillo Road. One connection is made to US-77 by Saltillo Road. Rokeby Road completes a single one-mile connection between 27th Street to 40th Street.

EXISTING ROAD NETWORK

<u>Road</u>	<u>Segment</u>	<u>Surface</u>	<u>Right-of-Way</u>
Yankee Hill Road	14 th -91 st St/Hwy 2	gravel	66' to 100'
Rokeby Road	27 th -40 th Street	gravel	66'
Saltillo Road	US77-84 th Street	paved	66' to 80'
14 th Street	Pine Lake-Saltillo Rd	paved	66' to 100'
27 th Street	Pine Lake-Saltillo Rd	paved	66' to 100'
40 th Street	Pine Lake-Saltillo Rd	gravel	66' to 100'

Lancaster County Road and Bridge Construction Program

The Lancaster County Road and Bridge Construction Program, Fiscal Year 1998, identifies county road improvements for a six year period with the first year funded for construction and the remaining five years designated as future year projects. The five year element of this program contains three rural road construction projects within the south Lincoln S1-S2 Subarea.

LANCASTER COUNTY ROAD AND BRIDGE PROGRAM FIVE YEAR ELEMENT: FY 2000-2004

<u>Road</u>	<u>Segment</u>	<u>Improvement</u>
Yankee Hill Road	27 th -84 th Street	Paving
Saltillo Road	BN & UP R.R. Crossings	Viaduct
40 th Street	City Limits-Saltillo Rd	Paving

Future Needs

- ! *Planned Road Network in Transportation Plan.* The Future County Road Plan identifies improvements for the existing county road network in this area. These are along the “mile-line” or “section-line” alignments with the exception of Rokeby Road which is not identified in the plan to be extended (14th-27th or 40th-56th) or to be upgraded. Improvements are for county road designs to include paving within a 100-foot right of way.

Issues Yet to Address

- ! *Future Urban Transportation (Road) Network.* A transportation (road) network for this urbanizing area has not been identified. This will be developed within the Wilderness Park and South Lincoln Subarea Study. When the transportation (road) needs are identified, they will need to be amended to the Transportation element of the Comprehensive Plan.
- ! *Long-Range Transportation Plan.* The Long-Range Transportation Plan is a fiscally constrained plan that extends 20 years into the future. The plan is scheduled to be updated in mid-1999.
- ! *Roadway Design Concepts and Right of Way.* A roadway design and system concept will also need to be developed in order to determine future right of way needs and access controls. The roadway design concept for the fringe roadways such as Pine Lake Road and 84th Street are shown in the Transportation Plan within 100 feet of right of way and 120 feet at the intersections. A design concept to identify additional right of way needs for an arterial system and for intersection turn lanes is needed.
- ! *Dominant Arterial Concept.* The “Dominant Arterial” concept, now referred to as “Super Arterial,” was introduced in the 1998 Annual Review and was recommended to the Metropolitan Planning Organization (MPO) Technical Committee for further discussion and review. This concept is to be addressed within the Wilderness Park traffic analysis.

B. Railroads

Existing Conditions

- ! *Active Railroads.* There are two active railroad lines passing through the study area and separating this area from Wilderness Park. Both lines have at-grade crossings at 14th Street near Yankee Hill Road and at Saltillo Road near 27th Street.

Future Needs

- ! *Safety improvements.* The *Lancaster County Road and Bridge Construction Program, Fiscal Year 1998*, identifies the construction of a viaduct along Saltillo Road at the Burlington Northern and Union Pacific tracks in the five-year element of the program.

Issues Yet to Address

- ! *Safety Issues.* Roadway and pedestrian planning for the S1-S2 Subarea will need to focus on the safety issues where both vehicles and pedestrians come in contact with the rail lines. Grade separations will need to be considered at the railroad crossings to reduce conflicts.
- ! *Traffic Delay.* There is potential for travel delays along highly traveled arterials where they cross railroads which may present negative impacts in terms of increased travel times and air pollution.
- ! *Buffer Zone.* A buffer corridor may be desirable to separate the railroads from the developing areas and the pedestrian corridors.

C. Trails

Existing Conditions

- ! *Hiking and Biking Trails.* A hiking/biking trail and an equestrian trail extend the length of Wilderness Park, which lies to the west of the S1-S2 Subarea and to the west of the railroad tracks. Existing hiker and biker trails within the current Urban Trails System extend only as far south as Pine Lake Road, which is the north edge of the study area.

Future Needs

- ! *Trails Plan.* The Trails Plan shows a single trail corridor crossing the study area and completing a connection to the Wilderness Park Trail. The details of this alignment are not identified and will need to be addressed in the subarea plan.

Issues Yet to Address

- ! *Trails Network.* The trails component of the South Lincoln Subarea Plan will need to address the future trail connections required to serve the future urbanizing area and to link this network to the existing trails system. A single trail corridor crossing this large of an area may not adequately serve the demand. The trails and pedestrian system will need to focus on connecting the residential areas with the commercial areas, new school

sites, and recreational areas.

D. Beltway

Existing Conditions

- ! *South and East Beltway Study.* The *South and East Beltway Study* is an existing study project and is identified in the Comprehensive Plan as encompassing the entire S1-S2 Subarea. A single south corridor is under consideration for the current phase of this study which narrows the focus of the work program to a recommended Beltway corridor alignment located one-half mile south of Saltillo Road.

- ! *Common.* On December 15, 1998, the Common is to review and give their recommendation as to the preferred alignments to be continued in the next phase of the Beltway Study. The schedule is to complete all local and federal reviews of the draft EIS and amend the transportation element of Comprehensive Plan by the end of 1999.

Issues Yet to Address

- ! *Beltway Interchanges.* A primary issue for the S1-S2 area is the identification of the access points or interchanges for the beltway. The location of the beltway access points will effect future north-south travel on the roadway network with traffic focusing on the arterial corridors radiating to and from the beltway access points.

- ! *Saltillo Road.* The closure of the Saltillo Road as it connects US 77 is under consideration but not specifically addressed in this phase of the Beltway Study. This intersection may be eliminated if the beltway interchange design at US 77 is found to conflict with Saltillo Road.

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