CENTER FOR RESEARCH, INC.
UNIVERSITY OF KANSAS

ERTS DETAILED IMAGE INTERPRETATION REPORT

CRINC DIIR No. 2264-7

Date Prepared April 13, 1973

Subject:

Urban Street Patterns Detectable From ERTS-1

Subject Geographic Coordinates 40-23N/097-51W

NASA Test Site No. NA

NASA Image Descriptors:

Urban, transport, mapping

Report Summary:

The major street patterns in Lincoln, Nebraska, are detectable on the January 24, 1973 ERTS-MSS-4 image. To further study and identify the street patterns, a 3x Polaroid enlargement was made of the city from the image. An overlay of the enlargement was used to map the street patterns, with reference to the original image for clarity. The technique seems to be adaptable for updating standard road maps.

Imagery References

CRINC Image No.	NASA Image ID Block	Subject Image Coordinates X	Y	Cloud Cover	Image Quality
MP00795	E-1185-16452-4	22	186	0%	Good

Map References:

Nebraska road map by the H.M. Gousha Company

Digital Data Used Yes ___ No X

Image Analyst Bonnie Barker

Principal Investigator Donald L Williams for Stan A. Morain

NASA Contract No. NAS 5 21822
MMC #060 IV

User ID No. U664

A distinctive pattern, identified as the major streets of the transport network in Lincoln, Nebraska, is apparent in the January 24, 1973 ERTS-1 image. MSS Band 4 was used for the detailed analysis of this street pattern because of the slightly greater contrast between tones than was found in other MSS bands. Bands 5, 6 & 7 revealed the pattern, but it was not as readily distinguishable in these bands.

A 3x polaroid enlargement of the city was made from the image to facilitate the interpretation process and to act as a map base. An overlay of the enlargement was used to map the streets and other recognizable patterns, with reference to the image and an existing road map of Lincoln was also referenced. The outline of the city, as recorded in 1971, was taken from the road map and reduced to the size of the Polaroid enlargement. The two overlays were then enlarged to page size, and the final map was drawn (Figure 1).

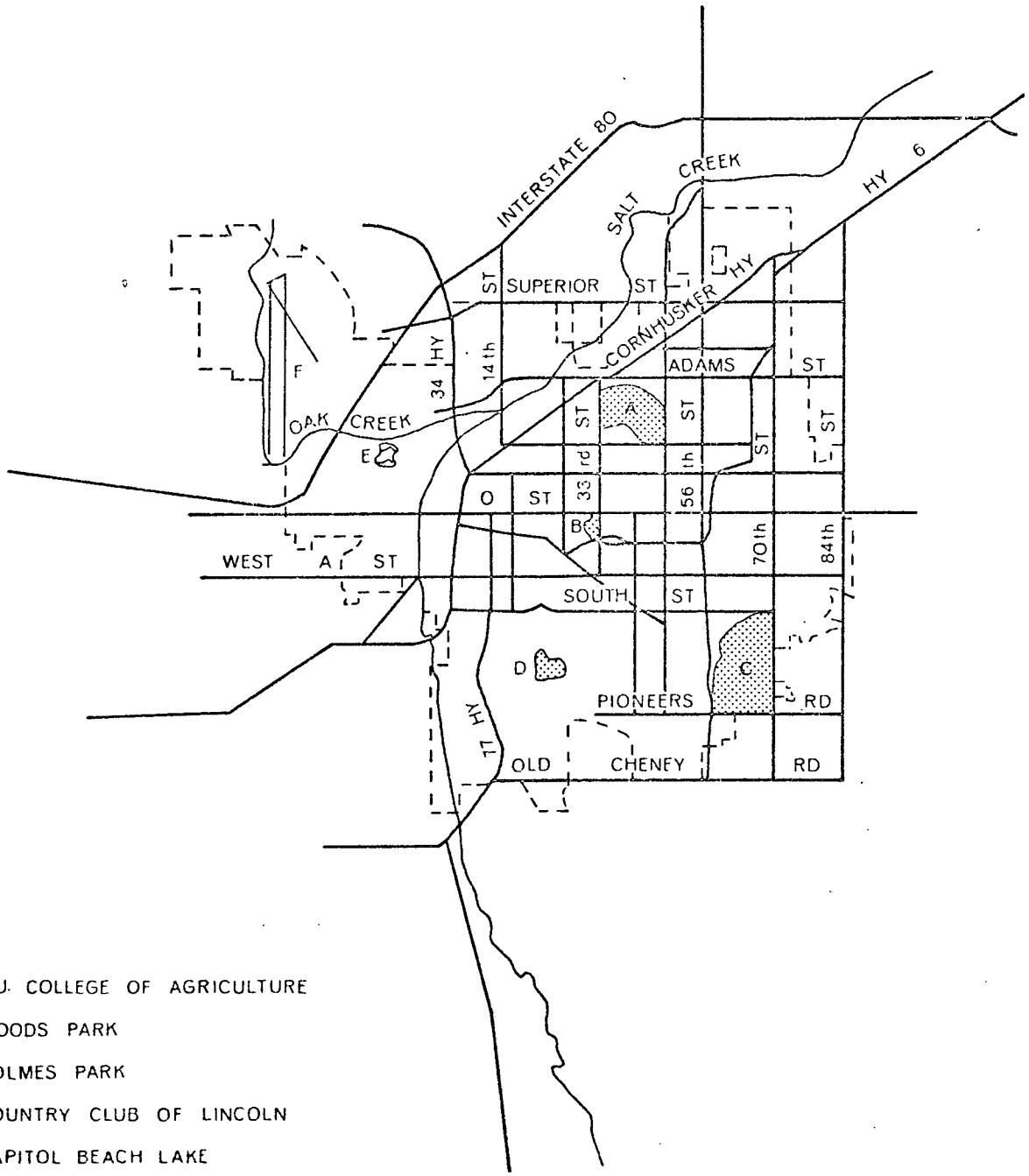
The areas A, B, C, & D on the map imaged as patches of mottled white or light gray. These areas probably had extensive unbroken snow covering which enable the distinction between them and surrounding regions of the city where the snow ground coverage was apparently less than in these areas.

The map compiled from information on the ERTS-1 image shows basically the same data as contained on the road map. Thus, it may be concluded that road maps can be constructed, and updated by use of ERTS-1 imagery, particularly if the area being mapped is snow covered.

Interpretation of street patterns - 4 manhours
Map construction - 8 manhours
Expendable materials - $4.00

Figure 1.

MAJOR STREET PATTERNS IN LINCOLN, NEBRASKA, DETECTABLE FROM ERTS-1 IMAGERY



A N.U. COLLEGE OF AGRICULTURE

B WOODS PARK

C HOLMES PARK

D COUNTRY CLUB OF LINCOLN

E CAPITOL BEACH LAKE

F LINCOLN MUNICIPAL AIRPORT

SOURCE: NASA ERTS E-1185-16452-4