

Strategic Regional Arterial

***U.S. 41
Illinois 120 to I-94***



**Operation
GreenLight**

**Illinois Department of Transportation
June 1994**

#20

Foreword

U.S. 41 is a Strategic Regional Arterial (SRA) from Illinois 120 (Belvidere Road) to the interchange with the Edens Expressway (I-94). CH2M HILL, Inc., has prepared this SRA report for U.S. 41 for the Illinois Department of Transportation and the Strategic Regional Arterial Subcommittee of the Work Program Committee of the Chicago Area Transportation Study.

As a SRA route, U.S. 41 is intended to function as part of a regional arterial system, carrying long-distance as well as local traffic in conjunction with other SRA routes and the regional expressway and transit systems. This report is one element of a long-range plan for all routes in the SRA network. Together, the route studies constitute a comprehensive, coordinated plan for the entire SRA network.

This report includes a description of the SRA study objectives and process, a detailed exposition and analysis of the existing route conditions, recommendations for ultimate and basic improvements, and documentation of the public involvement process including citizen comments.

U.S. 41 SRA

**Summary of
Recommendations**

Summary of Recommendations

For study purposes, the U.S. 41 Strategic Regional Arterial (SRA) was divided into three segments (see Exhibit S-1, following this section). The following is a summary of the major recommendations for each segment.

SRA Segment I: Illinois 120 to Illinois 176—5.6 Miles

- From Illinois 120 to south of Illinois 176, provide three through lanes in each direction of travel with a closed 24- to 30-foot barrier median; generally within 170 to 180 feet of existing right-of-way, requiring acquisition of up to 20 feet of additional right-of-way
- At major intersections such as Illinois 137 and Martin Luther King Drive, improve intersection capacity, channelization, and signalization; interchange to be considered at Illinois 137 as a possible “Post 2010” alternative
- Remove northbound weaving section between Waveland Avenue and the Illinois 120 interchange; reconstruct Waveland Avenue to merge with northbound exit ramp to Illinois 120
- Consolidate access and develop an access management plan along U.S. 41, south of Illinois 137 and north of the Elgin Joliet and Eastern Railway; access management improvements would include future access roads to the east and west of U.S. 41
- Provide new potential signalized intersection at future access road south of Illinois 137
- Reconstruct Elgin Joliet and Eastern Railway over U.S. 41 to accommodate proposed six-lane cross section and full vertical clearance
- Construct new interchange at Illinois 176; reconstruct Illinois 176 over U.S. 41; reconstruct bicycle/pedestrian path along Illinois 176 over U.S. 41

SRA Segment II: Illinois 176 to South of West Park Road—6.5 Miles

- From south of Illinois 176 to north of Deerpath Avenue, provide three through lanes in each direction of travel with a closed 24-foot barrier median, 10-foot right and left shoulders with curb and gutter along southbound U.S. 41; existing right-of-way ranges would be sufficient to accommodate the proposed cross section
- Through the Deerpath Avenue interchange, provide three through lanes in each direction of travel with an 8- to 10-foot closed median, 2- to 4-foot left shoulders, 6- to 8-foot right shoulders, and closed drainage
- South of Deerpath Avenue to north of Westleigh Road, provide three through lanes in each direction of travel with a closed 24-foot barrier median, 10-foot right and left shoulders; existing right-of-way is 160 feet, the proposed cross section would require 170 feet
- North of Westleigh Road to south of Old Elm Road, provide three through lanes in each direction of travel with a closed 24-foot barrier median, 10-foot right and left shoulders with curb and gutter along northbound U.S. 41; existing right-of-way ranges from 120 to 220 feet, requiring the acquisition of 5 to 10 feet of additional right-of-way
- South of Old Elm Road to south of West Park Avenue, provide three through lanes in each direction of travel, with a closed 24-foot barrier median, 10-foot right and left shoulders with curb and gutter along both sides of U.S. 41, existing right-of-way equals 100 feet, requiring the acquisition of 30 feet of additional right-of-way
- Realign and improve the horizontal alignment of U.S. 41 from south of Illinois 60 to Westleigh Road, increase sight distance to the Illinois 60 intersection

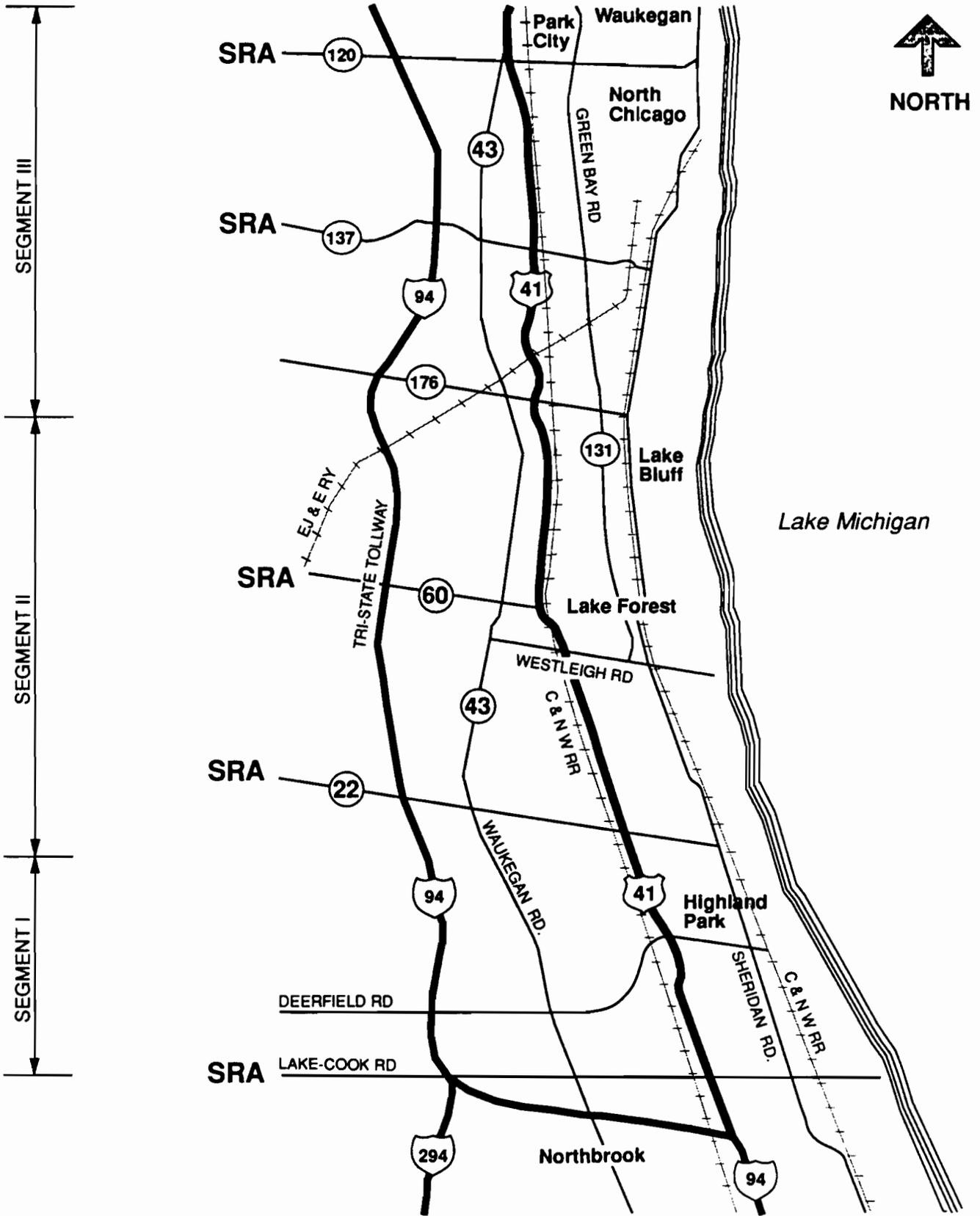
- Reconstruct compressed diamond interchanges at Deerpath Avenue, widen U.S. 41 structures over Deerpath Avenue and reconstruct retaining walls as necessary
- At major intersections such as Illinois 60 and Illinois 22 (Half Day Road), improve intersection capacity, channelization, and signalization
- Remove at-grade ramps at intersections with Illinois 22 and West Park Avenue and develop conventional four-leg intersections
- Provide new potential signalized intersection proposed at Parkside Drive and U.S. 41 to serve potential future access road west of U.S. 41 parallel to Chicago & Northwestern Railroad; signal should only be implemented in conjunction with development of future access road
- Develop continuous right-turn lane southbound along U.S. 41 from Old Mill Road to West Park Avenue

SRA Segment III: South of West Park Avenue to I-94—3.9 Miles

- From south of West Park Avenue to south of Deerfield Road, provide three through lanes in each direction of travel with a closed 24-foot barrier median, full 10-foot left shoulders, full 10-foot right shoulders within 170 feet of right-of-way, requiring the acquisition of no additional right-of-way
- South of Deerfield Road to Clavey Road, provide three through lanes in each direction of travel with a closed 6- to 8-foot barrier median, 2-foot left shoulders, 6- to 8-foot right shoulders, and closed drainage; maintain northbound edge of pavement; future right-of-way equals 170 feet, requiring the acquisition of 10 feet of additional right-of-way along the west side of U.S. 41
- South of Clavey Road to I-94, provide three through lanes in each direction of travel with a closed 19-foot barrier, median 8-foot left shoulders, full 10-foot right shoulders, and closed drainage; existing right-of-way of 300

feet is sufficient to accommodate the proposed cross sections, requiring the acquisition of no additional right-of-way

- Rehabilitate/reconstruct the Deerfield Road interchange
- Reconstruct or relocate pedestrian overpass south of Deerfield Road in conjunction with rehabilitation of Deerfield Road interchange
- Modify the existing ramp terminals at the Clavey Road interchange to accommodate a third through lane in each direction of travel



LOCATION MAP U.S. 41

Strategic Regional Arterial Study U.S. 41

Contents

<i>Chapter</i>	<i>Page</i>
Summary of Recommendations	S-1
I. Introduction	I-1
SRA Planning Objectives	I-3
SRA Design Concept	I-4
Organization of the Report	I-4
Timeframe	I-5
II. Existing Conditions	II-1
Corridor Overview	II-4
Current Planning, Design, and Construction Activity	II-10
Summary of Findings	II-12
Segment I—“North Chicago”	II-12
Segment II—“Lake Forest”	II-23
Segment III—“Highland Park”	II-35
Summary	II-44
III. U.S. 41 SRA Planning Framework	III-1
Functional Classification	III-2
Route Design Considerations	III-2
The 2010 Transportation Network	III-5
Year 2010 and Existing Traffic	III-7
Other Corridor Planning Activities	III-9
Future Land Use and Development	III-13
Existing Environmental Constraints, Unique Conditions, and Areas of Concern	III-14
Community Concerns, Interests, and Attitudes	III-15
Recommended SRA Corridor Concept for U.S. 41	III-17
IV. Recommended U.S. 41 SRA Plan	IV-1
Segment I—“North Chicago”	IV-2
Segment II—“Lake Forest”	IV-14
Segment III—“Highland Park”	IV-27
U.S. 41 Corridor Summary	IV-38
Operational Analysis of the U.S. 41 Corridor	IV-38
Suburban Arterial Portion of U.S. 41	IV-39
Full Access Control Portion of U.S. 41	IV-40
Implementation Costs	IV-42

Contents (continued)

	<u>Page</u>
Project Prioritization	IV-42
V. Public Involvement	V-1
Advisory Panel Meeting Minutes	V-2
Community Comments and Correspondence	V-16
Bimonthly Newsletters	V-29
Public Hearing Meeting Responses	V-56

Appendix

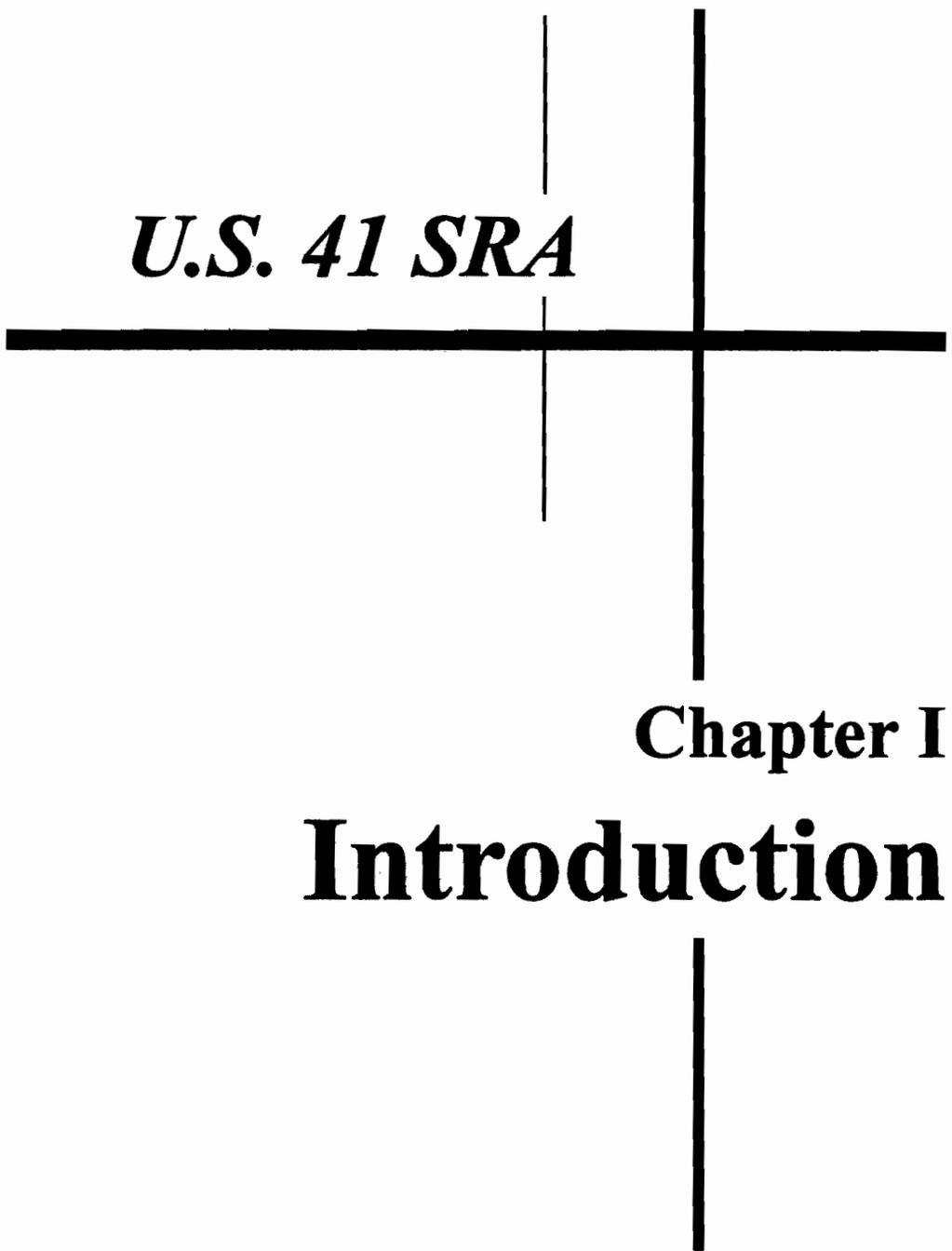
- A. Year 2010 Intersection Planning Capacity Analysis and Arterial Analysis
- B. U.S. 41 and Illinois 176 Interchange/Intersection Alternative

<i>Exhibit</i>	<i>Page</i>
S-1 Location Map—U.S. 41	S-5
1 Route Types on the Strategic Regional Arterial System	I-2
2 Corridor Map—U.S. 41	II-2
A-1 Existing Conditions—U.S. 41—Illinois 120 to South of Casimer Pulaski Drive	II-17
A-2 Existing Conditions—U.S. 41—North of Amhurst Parkway to South of Brompton Avenue	II-18
A-3 Existing Conditions—U.S. 41—North of the EJ&E Railway to South of Sherwood Drive	II-19
B-1 Planning Focus Areas—U.S. 41—Illinois 120 to South of Casimer Pulaski Drive	II-20
B-2 Planning Focus Areas—U.S. 41—North of Amhurst Parkway to South of Brompton Avenue	II-21
B-3 Planning Focus Areas—U.S. 41—North of the EJ&E Railway to South of Sherwood Drive	II-22
A-4 Existing Conditions—U.S. 41—North of Gage Lane to Illinois 60	II-29
A-5 Existing Conditions—U.S. 41—South of Illinois 60 to Old Mill Road	II-30
A-6 Existing Conditions—U.S. 41—Old Mill Road to South of West Park Avenue	II-31
B-4 Planning Focus Areas—U.S. 41—North of Gage Lane to Illinois 60	II-32
B-5 Planning Focus Areas—U.S. 41—South of Illinois 60 to Old Mill Road	II-33
B-6 Planning Focus Areas—U.S. 41—Old Mill Road to South of West Park Avenue	II-34
A-7 Existing Conditions—U.S. 41—North of Deerfield Road to South of Clavey Road	II-40
A-8 Existing Conditions—U.S. 41—South of Clavey Road to I-94	II-41
B-7 Planning Focus Areas—U.S. 41—North of Deerfield Road to South of Clavey Road	II-42
B-8 Planning Focus Areas—U.S. 41—South of Clavey Road to I-93	II-42
3 Desirable Suburban SRA Cross Section	III-3

<i>Exhibit</i>	<i>Page</i>
4	Future Transportation Network in the Vicinity of U.S. 41 III-6
5	Proposed SRA Corridor Concept—U.S. 41 III-18
C-1	U.S. 41 Recommended Plan—Illinois 120 to South of Casimer Pulaski Drive IV-10
C-2	U.S. 41 Recommended Plan—North of Amhurst Parkway to South of Brompton Road IV-11
C-3	U.S. 41 Recommended Plan—North of the EJ&E Railway to South of Sherwood Drive IV-12
D-1	U.S. 41 and Illinois 137 Intersection Detail IV-13
C-4	U.S. 41 Recommended Plan—North of Gage Lane to Illinois 60 IV-22
C-5	U.S. 41 Recommended Plan—South of Illinois 60 to Old Mill Road IV-23
C-6	U.S. 41 Recommended Plan—Old Mill Road to South of West Park Avenue IV-24
D-2	U.S. 41 and Illinois 60 Intersection Detail IV-25
D-3	U.S. 41 and Illinois 22 Intersection Detail IV-26
C-7	U.S. 41 Recommended Plan—North of Deerfield Road to South of Clavey Road IV-33
C-8	U.S. 41 Recommended Plan—South of Clavey Road to I-94 IV-34
D-4	U.S. 41 and Deerfield Road Intersection Detail IV-35
D-5	U.S. 41 and Deerfield Road Intersection Detail IV-36
D-6	U.S. 41 and Deerfield Road Intersection Detail IV-37
Ap. B1	Alternative I—IL 176 and U.S. 41
Ap. B2	Alternative II—IL 176 and U.S. 41
Ap. B3	Alternative III—IL 176 and U.S. 41
Ap. B4	Alternative IV—IL 176 and U.S. 41

<i>Table</i>	<i>Page</i>
1 Sources of Data Describing Traffic and Transportation Characteristics of U.S. 41 in 1991/1992	II-3
2 Average Daily Traffic Volumes Along U.S. 41 in 1986/1988	II-5
3 Existing Transit Facilities and Operation Along U.S. 41	II-7
4 Sources of Environmental and Land Use Data Along U.S. 41	II-11
5 Existing Major Structures Along Segment I of U.S. 41	II-13
6 Summary of Environmentally Sensitive Land Uses and Sites Along Segment I of U.S. 41	II-16
7 Existing Major Structures Along Segment II of U.S. 41	II-24
8 Summary of Environmentally Sensitive Land Uses and Sites Along Segment II of U.S. 41	II-27
9 Existing Major Structures Along Segment III of U.S. 41	II-36
10 Summary of Environmentally Sensitive Land Uses and Sites Along Segment III of U.S. 41	II-39
11 Year 2010 Desirable Route Characteristics for Suburban SRAs	III-4
12 Year 2010 ADT Forecast for Strategic Route Arterial for U.S. 41	III-8
13 Summary of Previous and Concurrent Planning Studies Relevant to U.S. 41	III-10
14 Future Transit Facilities and Operations Proposed and/or Planned by Others for U.S. 41	III-11
15 Evaluation of Signalized Intersection Operations Along Segment I of U.S. 41	IV-7
16 Opinions of Construction and Right-of-Way Cost for Segment I of U.S. 41	IV-9
17 Evaluation of Signalized Intersection Operations Along Segment II of U.S. 41	IV-19

<i>Table</i>	<i>Page</i>
18 Opinions of Construction and Right-of-Way Cost for Segment II of U.S. 41	IV-21
19 Opinions of Construction and Right-of-Way Cost for Segment II of U.S. 41	IV-32
20 Summary of U.S. 41 Suburban Arterial Analysis	IV-39
21 U.S. 41 Operational Analysis-Controlled Access Segments	IV-41
22 Opinions of Construction and Right-of-Way Costs for SRA Improvements Along U.S. 41	IV-42
23 U.S. 41 SRA Implementation Plan	IV-43



U.S. 41 SRA

Chapter I

Introduction

Chapter I

Introduction

The 2010 Transportation System Development Plan adopted by the Chicago Area Transportation Study (CATS) and the Northeastern Illinois Planning Commission (NIPC) recognizes that not all long-distance highway travel can be handled by the expressway system. Realizing that the arterial system will have to carry some long-distance trips, the 2010 Plan designated a system of Strategic Regional Arterials (SRAs) to supplement the expressway system.

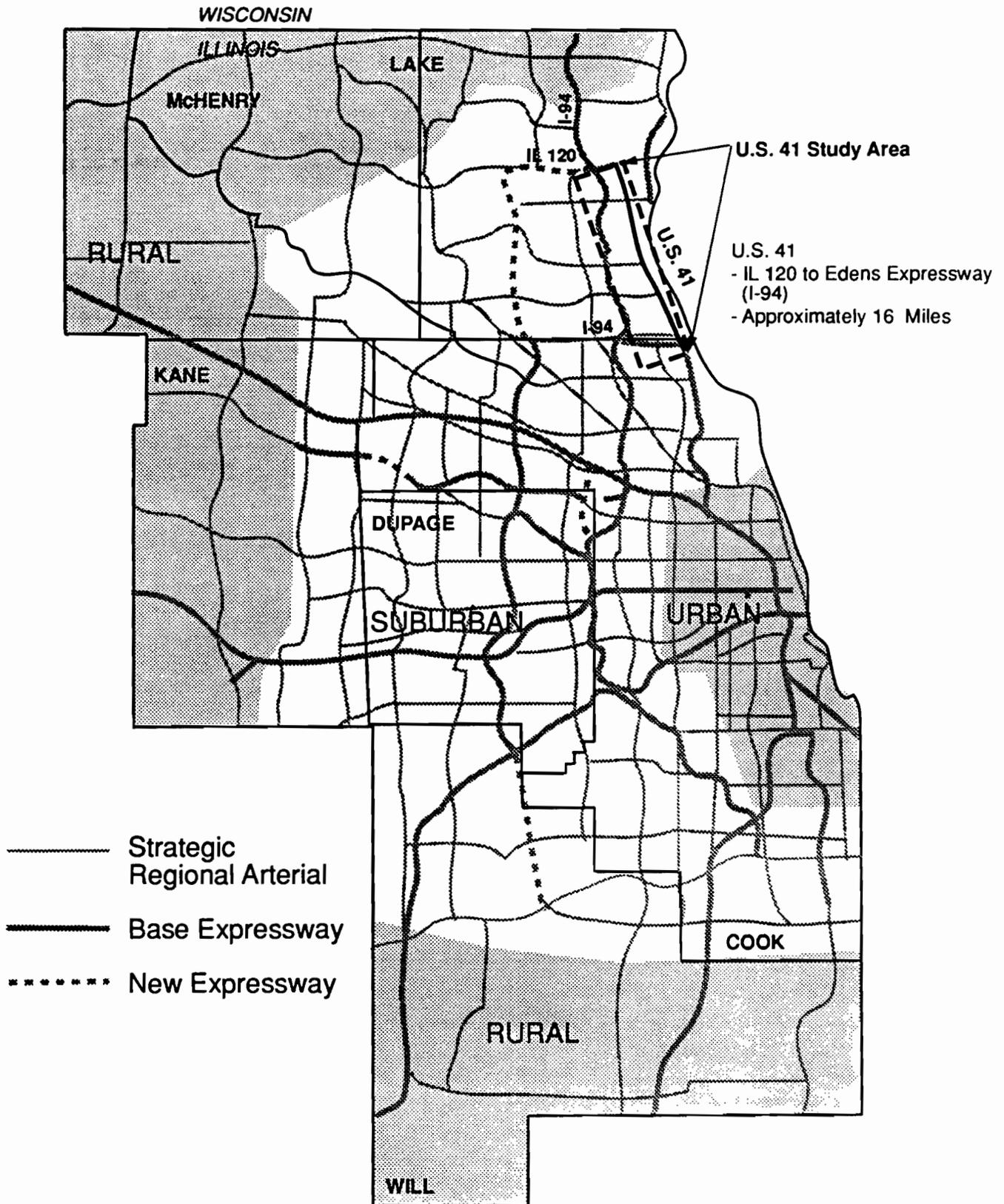
The SRA system is a 1,340-mile network of existing roads in the northeastern Illinois region. They create a network of 66 routes intended to serve as a second tier to the expressway system. The regional highway system, consisting of existing and planned expressways and SRAs, is shown in Exhibit 1.

Identification of routes that comprise the SRA system was determined based upon the projected levels of future travel demand within different parts of the region, with spacing ranging from about 3 miles apart in the more densely developed areas to about 8 miles apart in predominantly rural areas. Within this network, there are significant differences in the roadway environment that determines how various types of routes may function in the system. Three different types of SRA routes have been designated, corresponding to three different types of roadway environment:

- Urban routes
- Suburban routes
- Rural routes

The designation of route types within the overall SRA system reflects the expected density of long-range development within the different portions of the region.

This report is concerned with U.S. 41 (Skokie Highway), which has been designated a SRA corridor from Illinois 120 (Belvidere Road) south to the interchange with the Edens Expressway (I-94). The corridor is highlighted in Exhibit 1. The U.S. 41 SRA, which



ROUTE TYPES ON THE STRATEGIC REGIONAL ARTERIAL SYSTEM

traverses Lake and southern Cook Counties, has been classified as a suburban SRA along its entire length.

SRA Planning Objectives

The SRA system is intended to accomplish certain specific objectives within the overall regional transportation system:

- Supplement an expanded expressway system by:
 - Improving access to expressways
 - Providing alternatives for some portions of expressway travel
 - Providing a lower cost substitute for expressways in some corridors
- Enhance public transportation and personal mobility by:
 - Improving access to rail transit stations
 - Improving operating conditions for buses and other transit vehicles
 - Identifying opportunities for future transit facilities
 - Maintaining pedestrian accessibility
- Accommodate commercial vehicle traffic by:
 - Improving structural clearances
 - Maximizing through traffic movement

SRA Design Concept

A report on design concepts for the SRA system, prepared by Harland Bartholomew & Associates, Inc., was endorsed by the CATS Policy Committee. These concepts have been used as a guide, but not as a policy, in developing the improvement plan for U.S. 41 that is described in this report.

Organization of the Report

This report presents a summary of the SRA planning study for the U.S. 41 corridor. It is organized as follows:

- **Existing Conditions (Chapter II)**
 - This section describes the existing physical characteristics, traffic operation, safety, transit operations, environmental concerns, and land uses in the U.S. 41 corridor.

- **Planning Framework (Chapter III)**
 - This section describes the framework within which the recommended SRA plan will be developed. This chapter includes a description of route design characteristics, design criteria, travel forecasts, future land use zoning and development, future roadway and transit planning, future areas of concern, and a summary of the roadway recommendations.

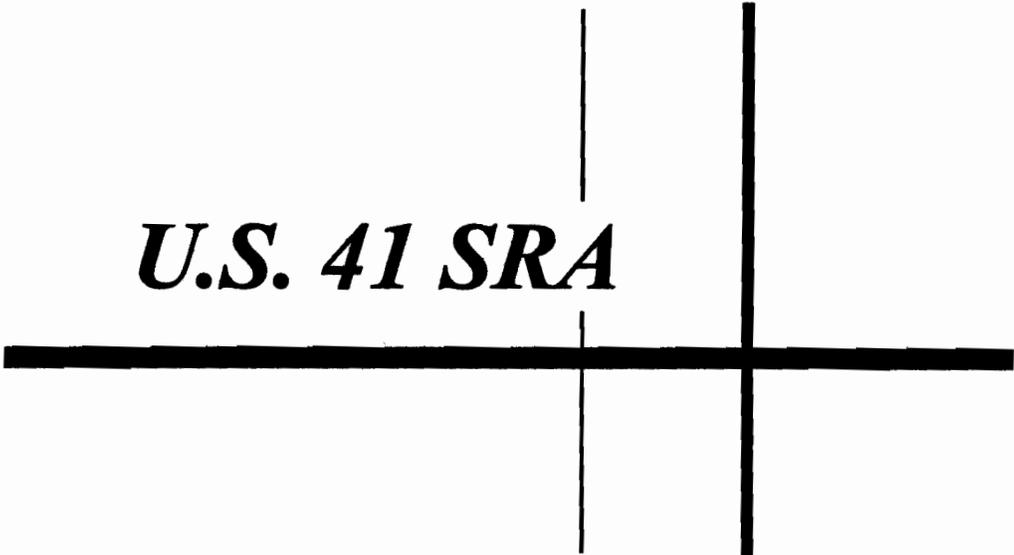
- **Recommended SRA Plan (Chapter IV)**
 - This section describes the recommended SRA corridor plan including lane arrangement, right-of-way, an arterial operations and level of service summary, intersection capacity planning analysis, transit improvements, construction and right-of-way costs, and a prioritization of recommendations.

- **Public Involvement (Chapter V)**
 - This section describes the public involvement process undertaken for the SRA study of U.S. 41. It is divided into three major sections: Panel Advisory Meetings, Newsletters, and the Public Hearing. These three opportunities for participation allowed the general public or their elected officials to voice opinions concerning U.S. 41.

Timeframe

The SRA study of the U.S. 41 corridor began in May 1991 and has continued to the production of this Final Report in June 1994. Conclusions and recommendations are based on conditions existing during the study period as well as known developments and plans by others that were current at this time.

SRA planning for U.S. 41 involved both the Illinois Department of Transportation (IDOT), as well as the many communities served and/or affected by the route. Input was received through a series of three meetings with a SRA Advisory Panel and a public hearing held on December 1, 1993, to present the draft recommendations.



U.S. 41 SRA

Chapter II

Existing Conditions



Chapter II

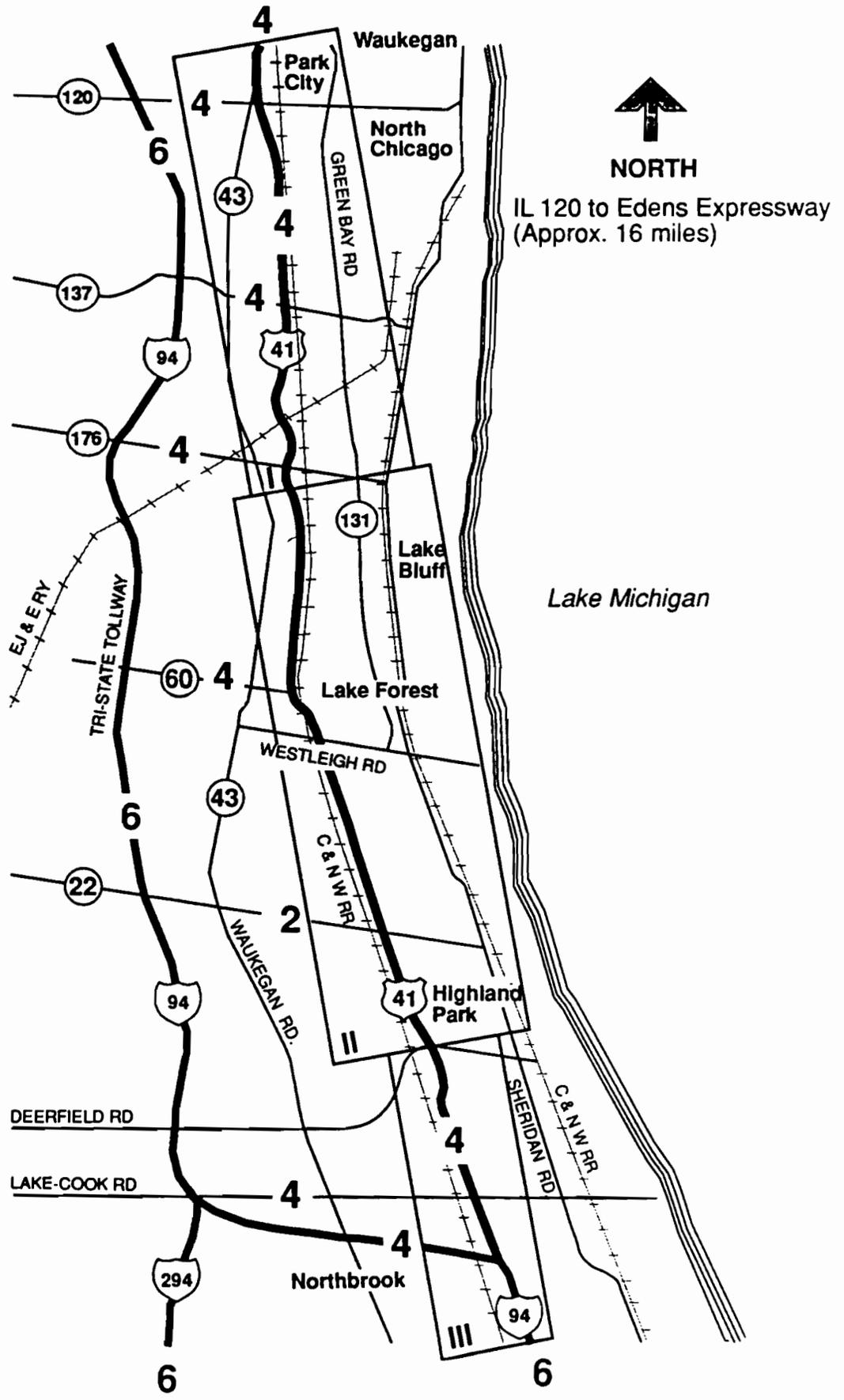
Existing Conditions

The U.S. 41 SRA corridor study area extends from Illinois 120 (Belvidere Road) to the interchange with I-94 (Edens Expressway) through Lake County and a portion of southern Cook County (a distance of approximately 16 miles). As shown in Exhibit 2, the corridor has been divided into three segments for analysis and planning purposes:

- Segment I—North Chicago (Illinois 120 to south of Illinois 176)
- Segment II—Lake Forest (South of Illinois 176 to south of West Park Avenue)
- Segment III—Highland Park (South of West Park Avenue to I-94)

U.S. 41 serves as an alternate route to I-94 (Tri-State Tollway) for traffic between the north suburbs and southeastern Wisconsin. In addition, it also serves traffic traveling from the north suburbs to I-94 and downtown Chicago. Locally, U.S. 41 serves as a major north-south arterial for traffic between Illinois 120 and Lake-Cook Road. The regional importance of U.S. 41 is emphasized by its classification as a U.S. Highway and the fact that it is crossed by five other SRA routes (Illinois 120, Illinois 137, Illinois 60, Illinois 22, and Lake-Cook Road), and other state and interstate routes, including I-94 and Illinois 176.

Existing physical characteristics, safety, traffic, and transit data for each of the analysis segments was collected from numerous sources (see Table 1). Information also was obtained from field reconnaissance, as well as discussions with state, county, village, and city officials at the Advisory Panel meetings.



CORRIDOR MAP U.S. 41

Table 1
Sources of Data Describing Traffic and Transportation Characteristics of
U.S. 41 in 1991/1992

Item	Data Source
Traffic Volumes <ul style="list-style-type: none"> • Average Daily Traffic • Intersection Turning • Movement Counts • Truck Classification 	<ul style="list-style-type: none"> - 1988 Lake County Traffic Map, Map, and 1986 Cook County Traffic Map - IDOT Files - Illinois Department of Transportation, Office of Planning & Programming (OPP)
Accidents	- Illinois Department of Transportation, Division of Traffic Safety, Collision Diagram Information (1987, 1988, January to October 1989)
Transit <ul style="list-style-type: none"> • Routes • Ridership 	<ul style="list-style-type: none"> - Regional Transportation Authority - Chicago Transit Authority - Metra - Pace
Traffic Control <ul style="list-style-type: none"> • Signalized Intersection Locations • Other Traffic Control 	- Field Reconnaissance
Cross Section <ul style="list-style-type: none"> • Lane Widths and Arrangements • Shoulder Widths • Type of Section 	<ul style="list-style-type: none"> - As-Built Plans, Field Reconnaissance - Illinois Department of Transportation, Scope Report OPP—Planning Services Section - Reconnaissance
Right-of-Way	<ul style="list-style-type: none"> - Illinois Department of Transportation, Scope Report OPP—Planning Services Section - As-Built Plans, Sidwell Maps
Curb/Roadside Use <ul style="list-style-type: none"> • Parking • Bus and Loading Zones 	- Field Reconnaissance
Structures	- Illinois Department of Transportation, Scope Report OPP—Planning Services Section
Other Features	- Illinois Department of Transportation, Scope Report OPP—Planning Services Section

Corridor Overview

Generally, the U.S. 41 corridor is characterized as a four-lane (two lanes in each direction of travel) divided expressway. The existing cross section consists of a variable width median (with and without median barrier), left and right shoulders, and predominantly open ditch drainage. The characteristics of the median as well as the outside roadside design varies throughout the corridor. The median varies not only in width but also type, including open grass medians and closed drainage barrier medians. Similarly, the roadside design has sections of open ditches, but in critical locations where right-of-way is limited, curb and gutter sections are used outside of the right shoulders. There is one exception to the four-lane cross section. South of Clavey Road to the southern terminus at the I-94 interchange, a six-lane (three lanes in each direction of travel) cross section is provided.

Right-of-way varies along the corridor from 100 to 460 feet. From Illinois 120 to Westleigh Road, the right-of-way ranges from 160 to 210 feet. South of Westleigh Road to approximately Chantilly Boulevard, the right-of-way narrows, ranging from 100 to 120 feet (except a small section north of Old Elm Road where right-of-way is 220 feet). South of Chantilly Boulevard to I-94, the right-of-way ranges from 250 to 460 feet.

The degree of access control also varies along the corridor. South from Illinois 120 to West Park Avenue, the corridor is a partially access-controlled facility with at-grade signalized intersections, grade separations, and grade-separated interchanges. South from West Park Avenue to the I-94 interchange, the corridor is fully access controlled with access provided only at interchanges.

On a regional basis, U.S. 41 is paralleled by three major north-south routes. I-94 (Tri-State Tollway) runs parallel between 2.0 to 3.5 miles to the west, Illinois 43 (Waukegan Road) lies approximately 0.5 to 2.0 miles to the west, and Illinois 131 (Green Bay Road) is roughly 1 mile to the east of U.S. 41. A number of nearby lower class roads parallel U.S. 41, but none has the necessary continuity or functional classification to act as an alternative route for the regional trips the U.S. 41 SRA is intended to serve.

Table 2 summarizes existing traffic demand in terms of average daily traffic (ADT) counts from 1986 to 1988. For this segment of U.S. 41 under study, ADT ranges from

Table 2
Average Daily Traffic Volumes Along U.S. 41 in 1986/1988

Location	ADT (vpd)
Illinois 120 to Martin Luther King Drive	23,900
Martin Luther King Drive to Illinois 137	32,500
Illinois 137 to Illinois 176	37,800
Illinois 176 to Deerpath Avenue	34,800
Deerpath Avenue to Illinois 60	31,200
Illinois 60 to Westleigh Road	34,900
Westleigh Road to Old Elm Road	38,500
Old Elm Road to Illinois 22	44,600
Illinois 22 to West Park Avenue	53,600
West Park Avenue to Deerfield Road	N/A
Deerfield Road to Clavey Road	52,300
Clavey Road to Lake Cook Road	47,200
Lake Cook Road to I-94 Interchange	62,800

23,900 to 62,800 vehicles per day (vpd). In general, traffic volume increases from north to south. The lowest ADT, between 23,900 and 32,500 vpd, occurs north of Illinois 137 (a SRA). Between Illinois 137 and Illinois 22, traffic volumes range from 31,200 and 44,600 vpd. The highest volumes occur south of Illinois 22 to I-94, where ADT ranges from between 52,300 and 62,800 vpd.

Under current traffic conditions, peak period congestion is evident along most of U.S. 41. Congestion is most notable in the more developed areas south of Old Elm Road to the I-94 interchange. A number of the existing at-grade intersections along U.S. 41 also experience poor traffic operations during peak periods. In addition, truck traffic along U.S. 41 represents a significant portion of total traffic, which further reduces the quality of traffic operations.

Table 3 lists other, non-roadway, transportation facilities that cross or are adjacent to U.S. 41. The principal commuter transit line that serves regional trips in the vicinity of the U.S. 41 corridor is the Chicago & Northwestern (C&NW)/Metra-North Line located east of U.S. 41. Two freight lines also serve the corridor, including the C&NW railroad. The C&NW railroad operates parallel to U.S. 41 along the east side of U.S. 41 from Illinois 120 to Illinois 60 and parallel to the west side of U.S. 41 south of Illinois 60. The Elgin, Joliet, and Eastern (EJ&E) Railway crosses U.S. 41 north of Illinois 176. Pace suburban busses serve only the northern and southern portions of the study area. Pace routes 567 and 568 cross the corridor at Illinois 120 and Pace routes 564 and 567 cross the corridor just to the north at Casimir Pulaski Drive. Pace routes 471 and 473 travel along a portion of U.S. 41 between West Park Avenue and Deerfield Road. Pace route 473 continues to the south along Skokie Valley Road as part of a longer north-south route. Pace route 214 crosses U.S. 41 at Lake-Cook Road, providing east-west service along the Lake-Cook SRA.

Several existing physical and environmental concerns exist along U.S. 41. Limited right-of-way is a concern in a number of locations. This concern is particularly relevant from north of Illinois 22 to south of West Park Avenue. Physical characteristics that affect the corridor include the proximity of the C&NW railroad and the Commonwealth Edison utility lines that parallel U.S. 41. In less developed areas, environmental concerns may only be a concern along one side of the roadway as a result of a specific land use, floodplain/floodway, or other environmental constraint.

**Table 3
Existing Transit Facilities and Operation Along U.S. 41**

Facility	Frequency	Location of Rail or Bus Route	Average Weekday Boardings ¹
Metra Lines and Nearest Stations			
Chicago & Northwestern/ North Line Waukegan Station	Weekday: 25 inbound, 25 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	95 N. Spring Street	780
Chicago & Northwestern/ North Line North Chicago Station	Weekday: 23 inbound, 22 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	1633 Lakeside	165
Chicago & Northwestern/ North Line Great Lakes Station	Weekday: 15 inbound, 19 outbound Saturday: 9 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	2840 S. Sheridan Road	98
Chicago & Northwestern/ North Line Lake Bluff Station	Weekday: 23 inbound, 24 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	600 N. Sheridan Road	357
Chicago & Northwestern/ North Line Lake Forest Station	Weekday: 23 inbound, 24 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	691 N. Western Avenue	700
Milwaukee District/ North Line Lake Forest Station	Weekday: 19 inbound, 22 outbound Saturday: 9 inbound, 9 outbound Sunday: 7 inbound, 7 outbound	10205 N. Waukegan Road	522
Chicago & Northwestern/ North Line Fort Sheridan Station	Weekday: 23 inbound, 22 outbound Saturday: 10 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	461 W. Old Elm Road	338
Chicago & Northwestern/ North Line Highwood Station	Weekday: 22 inbound, 20 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	317 Green Bay Road	290
Chicago & Northwestern/ North Line Highland Park Station	Weekday: 26 inbound, 28 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	1800 St. John's Avenue	1,240
Milwaukee District/ North Line Deerfield Station	Weekday: 24 inbound, 26 outbound Saturday: 9 inbound, 9 outbound Sunday: 7 inbound, 7 outbound	860 Deerfield Road, 2 blocks west of Illinois 43	1,669
Chicago & Northwestern/ North Line Ravinia Station	Weekday: 23 inbound, 22 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	510 Roger Williams Avenue	346
Chicago & Northwestern/ North Line Ravinia Park Stop	Weekday: 5 inbound, 7 outbound Saturday: 3 inbound, 5 outbound Sunday: 2 inbound, 6 outbound During the Concert Season Only	Ravinia Park	N/A
Chicago & Northwestern/ North Line Braeside Station	Weekday: 23 inbound, 22 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	10 N. St. John's Avenue	324
Chicago & Northwestern/ North Line Glencoe Station	Weekday: 25 inbound, 25 outbound Saturday: 11 inbound, 11 outbound Sunday: 8 inbound, 8 outbound	724 Green Bay Road	784

**Table 3
Existing Transit Facilities and Operation Along U.S. 41**

Facility	Frequency	Location of Rail or Bus Route	Average Weekday Boardings ¹
Milwaukee District/ North Line Northbrook Station	Weekday: 22 inbound, 26 outbound Saturday: 9 inbound, 9 outbound Sunday: 7 inbound, 7 outbound	1340 Shermer Avenue	1,458
Pace Bus Routes			
Pace 568	Weekday: 29 eastbound, 28 westbound Saturday: 10 eastbound, 11 westbound Sunday: 8 eastbound, 8 westbound Sunday service operates on some major holidays; No service on Thanksgiving or Christmas	Crosses on Illinois 120 (Belvidere Road)	967
Pace 564	Weekday: 13 eastbound, 12 westbound Saturday: 9 eastbound, 9 westbound No Sunday or holiday service	Crosses on Pulaski Drive	332
Pace 567	Mon.-Thu.: 10 eastbound, 10 westbound Friday: 14 eastbound, 14 westbound Saturday: 26 eastbound, 26 westbound Sunday: 24 eastbound, 24 westbound Sunday service operates on some major holidays; No service on Thanksgiving or Christmas	Eastbound: Crosses on Illinois 120 (Belvidere Road) Westbound: Crosses on Pulaski Drive	179 ²
Pace 471	Weekday: 25-26 eastbound, 24 westbound Saturday: 13 eastbound, 13 westbound No Sunday or holiday service Saturday schedule in effect for day after Thanksgiving	Crosses corridor on Deerfield Road; 1 weekday westbound bus uses corridor between W. Park Ave. and Deerfield Rd.	441
Pace 214	Weekday: 18 eastbound, 19-20 westbound Saturday: 10 eastbound, 10 westbound No Sunday or holiday service	Crosses on Lake-Cook Road	2,118 ³
Pace 473	Weekday: 12-15 northbound, 12-14 southbound Saturday: 9 northbound, 10 southbound No Sunday or holiday service Saturday schedule in effect for day after Thanksgiving	Uses corridor between West Park Avenue and Deerfield Road and Skokie Valley Road between Clavey and Lake-Cook Roads	205
Pace 626	Weekday: 10 eastbound-southbound (local), 10 northbound-westbound (local), 7 eastbound-southbound (exp.), 6 northbound-westbound (exp.) No Saturday, Sunday, or holiday service	Lake-Cook and Skokie Roads (local); Tri-State Tollway (I-94) and Edens Expressway (I-94/U.S. 41) (exp.)	450

Table 3 Existing Transit Facilities and Operation Along U.S. 41			
Facility	Frequency	Location of Rail or Bus Route	Average Weekday Boardings ¹
Other Rail Lines			
Elgin, Joliet, and Eastern Railroad	1 freight train per day	Crosses in Lake Bluff, approximately 0.6 mile north of Illinois 176	N/A
Sources: Metra and Pace, <i>Future Agenda for Suburban Transportation</i> (April 1992). Pace, <i>Quarterly Route Review: January- March 1992</i> (June 1992). Metra and Pace, Individual line/route timetables. EJ&E Railroad, Joliet, Illinois.			

¹For Pace buses, this column represents "Average Weekday Ridership."

²The ridership trend for the Pace route 567 deviates from other routes. Average weekend ridership is higher than average weekday ridership. Saturday ridership is 607 and Sunday ridership is 406.

³Combined ridership totals are listed for Pace routes 213 and 214.

Environmental concerns along U.S. 41 include forest and nature preserves, parks, leaking underground storage tank sites (LUST), and Comprehensive Environmental Response Compensation and Liability Act Information System (CERCLIS) sites. Sources for these data are listed in Table 4.

Current Planning, Design, and Construction Activity

There are few current planning, design, and construction activities that have a direct bearing on U.S. 41. These activities, because of their current status, were considered as "existing conditions" for the U.S. 41 SRA study. These projects include all projects identified in the IDOT *FY 1993-1997 Proposed Highway Improvement Program*. These projects include the planned acquisition of right-of-way from north of Martin Luther King Drive to the EJ&E railway. Other study activities reviewed and investigated include the proposed IDOT plan for relocating U.S. 41 (from north of EJ&E railway to north of Martin Luther King Drive) with a grade-separated interchange at Illinois 137. Plans for this proposal have recently been withdrawn by the IDOT; therefore, this was not considered as an existing condition. Each of these projects was considered when developing the recommended plan presented in Chapter IV.

Table 4
Sources of Environmental and Land Use Data Along U.S. 41

Item	Data Source
Parkland and Other Open Space	<p>Listing of Land and Water Conservation Fund (LAWCON) Projects; U.S. Department of the Interior, National Park Service</p> <p>1985 Bikeways Plan; Northeastern Illinois Planning Commission</p> <p>Illinois Natural Areas Inventory; Illinois Department of Transportation, Project and Environmental Studies</p> <p>Illinois Nature Preserves System 1987-1988 Report and 1990 Update; Illinois Nature Preserves Commission</p> <p>Lake County Forest Preserve Maps</p> <p>Forest Preserve District of Cook County</p> <p>Visual Survey 7/91</p>
Wetlands	<p>National Wetlands Inventory Map; United States Department of the Interior, U.S. Fish and Wildlife Service</p>
Floodplains	<p>FIRM, Flood Insurance Rate Map; Federal Emergency Management Agency</p> <p>FLOODWAY, Flood Boundary and Floodway Map; U.S. Department of Housing and Urban Development</p>
Hazardous Materials	<p>Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) Listing, 5/91; U.S. EPA Superfund Program</p> <p>Leaking Underground Storage Tank (LUST) Listing, 12/88; Illinois Environmental Protection Agency files</p>
Historic Sites	<p>The National Register of Historic Places, 1990; U.S. Department of the Interior</p> <p>Illinois State Historical Markers Text Book, 1973; Illinois Historic Structures Survey</p> <p>Inventory of Historic Structures and Historic Landmarks, 1973; Illinois Historic Structures Survey</p>

Summary of Findings

The existing physical characteristics, traffic operation, safety, public transportation, environmental concerns, and land use in the three segments defined along U.S. 41 are presented below.

Segment I——“North Chicago” (Illinois 120 to South of Illinois 176)

Segment I, the northern segment of U.S. 41, is approximately 5.6 miles long. It extends from Illinois 120 (Belvidere Road) to south of Illinois 176. Segment I includes the communities of Waukegan, Park City, North Chicago, and Lake Bluff and is within Lake County.

Physical Characteristics

The existing cross section along Segment I consists of a four-lane (two lanes in each direction of travel) divided facility. The cross section is generally rural in nature with a variable median. South from Illinois 120 to north of the EJ&E railway, the four lanes are separated by an open 30-foot grass median. The roadside design is comprised of paved shoulders and open drainage. South from the EJ&E railway to south of Illinois 176, the median narrows and a closed drainage system is employed. Inside left shoulders are less than 8 feet and a concrete barrier median is utilized. Exceptions to the roadside design include some sections where curb and gutter is used along the outside of existing shoulders (see Exhibits A-1 through A-3).

The horizontal alignment is relatively tangent north of the EJ&E railway with mild horizontal curves less than 1 degree. From north of the EJ&E railway to south of Illinois 176, the horizontal alignment includes a reverse curve between the EJ&E structure to south of Illinois 176. This reverse curve contains horizontal curves of 3 to 4 degrees. Sufficient tangent length is provided between the curves to adequately transition the superelevation. The effective design speed of the horizontal alignment within this segment exceeds 60 mph. The vertical alignment is characterized as level, i.e., with minimal grades to provide grade separations along U.S. 41.

The right-of-way within Segment I varies from 160 to 210 feet. South of Illinois 120 to Casimir Pulaski Drive, the existing right-of-way ranges between 180 and 210 feet. From south of Casimir Pulaski Drive to Illinois 176, the existing right-of-way is 160 feet.

Other physical characteristics worth noting in this segment include four structures that cross over U.S. 41. These include structures carrying Illinois 120, Casimir Pulaski Drive, the EJ&E railway, and Illinois 176. Table 5 lists the structures within this segment. In addition, two pump stations exist within this segment. Rehabilitation work is under way at the pump station located at the EJ&E railway and work is to be scheduled at the pump station located at Illinois 176.

Table 5			
Existing Major Structures Along Segment I (Illinois 120 to South of Illinois 176) of U.S. 41			
IDOT Structure Reference	Feature		
	Over	Under	Comment
049-0050	—	Illinois 120	
049-3052	—	Pulaski Drive	
049-0090	—	EJ&E RY	
049-0131	—	Illinois 176	
049-0032	—	Com. Ed.	Used for Bike Path

Traffic Control, Operations, and Safety

Major intersections within the segment from north to south include Illinois 120 and Illinois 137. Both of these corridors are designated as suburban SRAs. Illinois 120 is a principal east-west corridor, carrying the SRA designation from U.S. 41 west to Illinois 47. Similarly, Illinois 137 is a major east-west SRA from the Amstutz Highway to Illinois 83. The SRA to SRA intersection of U.S. 41 and Illinois 120 is controlled by a grade-separated interchange, with all movements free flow and no signalized or stop-controlled intersections. Illinois 137 is at-grade and controlled by a signal. Dual

left-turn lanes are provided from U.S. 41 to Illinois 137, right-turn lanes are also provided. Two other signalized intersections are provided along this segment, located at Amhurst Parkway and Martin Luther King Drive. These signals primarily serve office and industrial development activity.

Access to Illinois 176 from U.S. 41 is provided indirectly through collector streets that intersect with U.S. 41 north of Illinois 176.

Peak period congestion is evident along some portions of this segment. At times there are delays experienced at the signalized intersections at Illinois 137 and Martin Luther King Drive. The lack of sight distance to the Illinois 176 interchange/intersection and the lack of adequate acceleration and deceleration for vehicles exiting or entering U.S. 41 results in speed differentials along U.S. 41. This further degrades the operation along U.S. 41 and produces potential safety concerns. In general, this segment operates within reasonable levels of service. Operating speeds are relatively high with posted speed limits ranging from 45 to 50 mph. However, peak period weekend or recreational/seasonal traffic along this segment can become critical resulting in less than desirable operations. Parking is not permitted along U.S. 41 within this segment.

Existing traffic demand for this segment, based on the 1988 Lake County Traffic Map, ranges from approximately 24,000 to 38,000 vpd. Traffic increases from north to south, with the heaviest traffic reported south of Illinois 176 (38,000 vpd).

Accident data were obtained from IDOT files for 1987, 1988, and January to October 1989. Segment accident rates along U.S. 41 were calculated in accidents per million vehicle miles (MVM). Intersection accident rates, in accidents per million entering vehicles (MEV), were calculated at selected intersections for which data were available. An intersection rate of 3.0 MEV was calculated at the intersection of Illinois 137 and U.S. 41. Other intersection accident rates were not calculated. Segment accident rates range from 3.3 to 15.2 MVM. Rates of 13.0 MVM between Martin Luther King Drive and Illinois 137 and 15.2 MVM in the vicinity of Illinois 176 are higher than statewide averages for similar facilities.

Public Transportation

Public transportation facilities do not operate within this segment of the corridor. The rail line that runs adjacent to U.S. 41 in this area serves freight only. Metra operates the Metra/C&NW North Line located approximately 1 to 2 miles to the east. Stations that serve this line in this area include North Chicago, Great Lakes, and Lake Bluff. Pace suburban bus operates three routes that cross U.S. 41. These include routes 567 and 568, crossing at Illinois 120, and routes 564 and 567 that cross at Casimir Pulaski Drive.

Environmental Constraints and Land Use

There are a number of environmentally sensitive areas and concerns adjacent to U.S. 41 within this segment. Wetlands have been identified at a number of locations. Most notable are the wetlands located adjacent to the east side of U.S. 41 south of the Illinois 120 intersection. Wetlands also have been identified along the west side of U.S. 41, between Martin Luther King Drive and Illinois 137 and in all four quadrants at the intersection of the EJ&E railway and U.S. 41. Other concerns include the CERCLIS site at Abbott Laboratory's Skokie Warehouse in the southeast corner of the Martin Luther King Drive and U.S. 41 intersection. LUST sites have been identified at North Shore Waste Control on the east side of U.S. 41, north of Illinois 176, and Wayne Lofthouse, located on the east side of U.S. 41 south of Brompton Avenue.

Development within this segment is primarily industrial in nature with some office development. A major office complex, including the Northpoint Business Center and the Amhurst Lake Business Center, lies adjacent to the west side of U.S. 41, south of Illinois 120. South of Martin Luther King Drive to north of the EJ&E railway, the land use is mostly industrial. South of the EJ&E railway to Illinois 176, the land use is mixed consisting of residential and industrial uses. Much of the land within this segment is open space and agricultural use. Sensitive land uses within this segment include the Greenbelt Forest Preserve located east of U.S. 41 and north of Casimir Pulaski Road. The planning focus area exhibits shown in Exhibits B-1 through B-3 and Table 6 summarize the environmental concerns and key land use issues within Segment I.

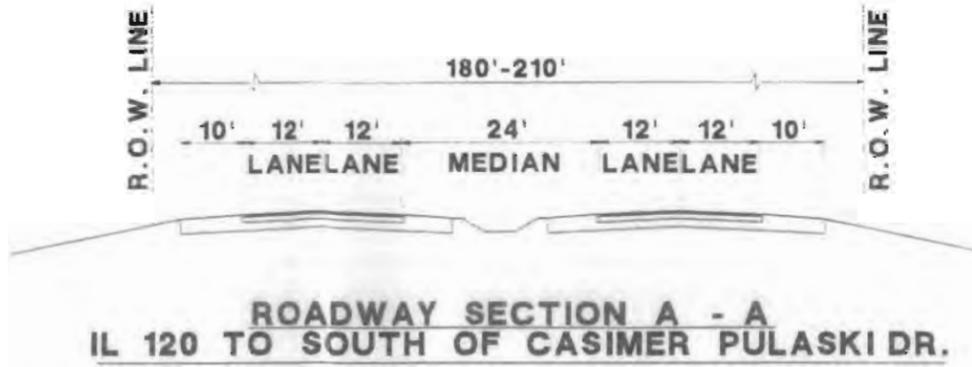
Table 6
Summary of Environmentally Sensitive Land Uses
and Sites Along Segment I (Illinois 120 to Illinois 176) of U.S. 41

Item	Exhibit No.	Reference	Description
Historic Sites	—	—	None noted
CERCLIS Sites ^a	B-2	C-2	Abbott Laboratory's Skokie Warehouse, U.S. 41 at 22nd Street, North Chicago
LUST Sites ^b	B-2	L-9	National Automotive, 1300 Skokie Highway, Lake Bluff
	B-3	L-8	Northshore Waste Control, Illinois 176 and U.S. 41, Lake Bluff

^aCERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System sites that reportedly have accepted hazardous substances or possess a record of accidental or illegal dumping

^bLUST = Leaking Underground Storage Tank

LEGEND	
	SIGNALIZED INTERSECTION
	LANE ARRANGEMENTS AT KEY INTERSECTIONS
	PARKING ALLOWED
	PARKING PROHIBITED
	NO POSTED RESTRICTIONS
	DESIGNATED BUS STOP
	RAPID TRANSIT STATION
	METRA STATION



1988 - 1990
AVERAGE
DAILY
TRAFFIC

ACCIDENT
RATE

TRANSIT
ROUTES

EDGE OF
ROAD USE

WEST
EAST

	23,900	
	0.6/MEV	
	METRA RAIL NONE	
	FACE BUS NONE	
	3.3 / MVM	

U.S. 41 - EXISTING CONDITIONS

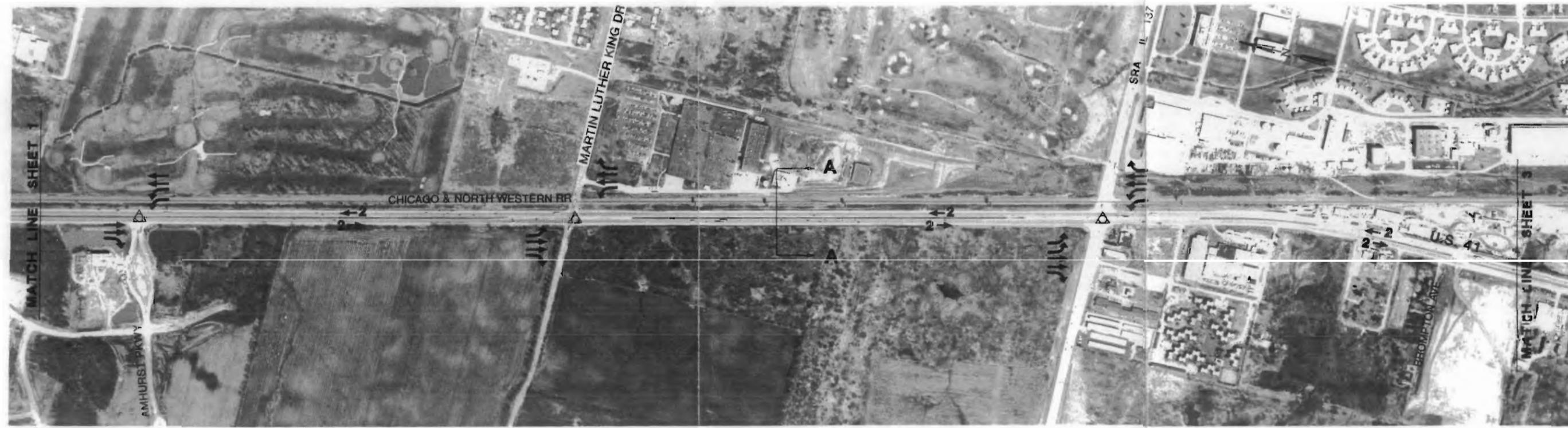
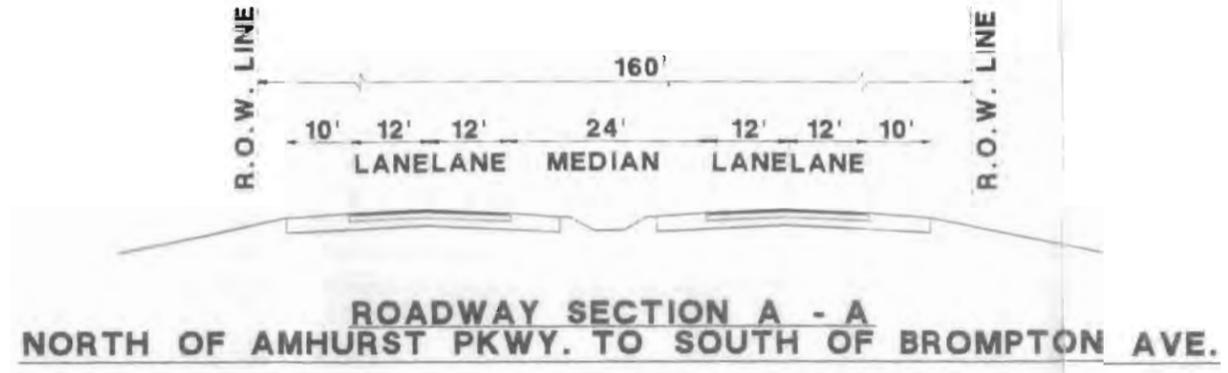
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LEGEND

△	SIGNALIZED INTERSECTION
→	LANE ARRANGEMENTS AT KEY INTERSECTIONS
P	PARKING ALLOWED
P	PARKING PROHIBITED
NR	NO POSTED RESTRICTIONS
□	DESIGNATED BUS STOP
CTA	RAPID TRANSIT STATION
METRA	METRA STATION



1988 - 1990
AVERAGE
DAILY
TRAFFIC

ACCIDENT
RATE

TRANSIT
ROUTES

EDGE OF
ROAD USE WEST EAST

23,900	32,500	37,800
3.3 / MVM	13.0 / MVM	3.0 / MEV
METRA RAIL NONE		
PACE BUS NONE		
	P	
	P	

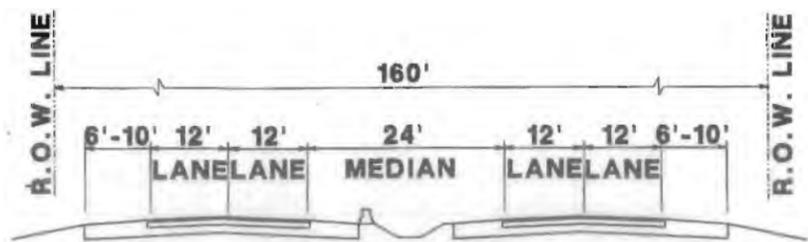
U.S. 41 - EXISTING CONDITIONS

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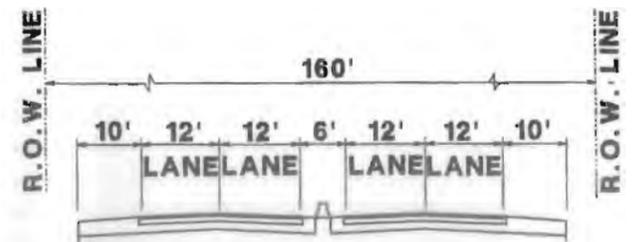


LEGEND

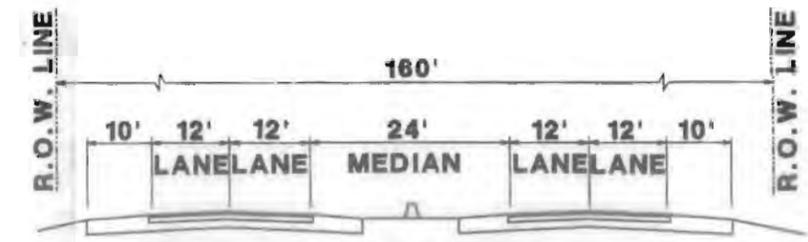
-  SIGNALIZED INTERSECTION
-  LANE ARRANGEMENTS AT KEY INTERSECTIONS
-  PARKING ALLOWED
-  PARKING PROHIBITED
-  NO POSTED RESTRICTIONS
-  DESIGNATED BUS STOP
-  RAPID TRANSIT STATION
-  METRA STATION



ROADWAY SECTION A - A
SOUTH OF BROMPTON AVE. TO
ELGIN, JOLIET AND EASTERN RAILWAY



ROADWAY SECTION B - B
ELGIN, JOLIET AND EASTERN RAILWAY
TO NORTH SHORE DR.



ROADWAY SECTION C - C
NORTH SHORE DR. TO
SOUTH OF SHERWOOD DR.



1988 - 1990
AVERAGE
DAILY
TRAFFIC

ACCIDENT
RATE

TRANSIT
ROUTES

EDGE OF ROAD USE WEST EAST

	37,800	
		34,800
		15.2 / MVM
	METRA RAIL NONE	
	PACE BUS NONE	
		
		

U.S. 41 - EXISTING CONDITIONS

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PLANNING FOCUS AREAS

A) IL 120 INTERSECTION

- Interchanging new expressway



SUBURBAN SRA -- 120' TO 150' RIGHT OF WAY (DESIRABLE)

LEGEND

- A Planning Focus Area I.D.
- (C1) Hazardous Waste Site
- (L1) Leaking Underground Storage Tank
- (H1) Historic Building/District
- * Wetland
- † Church/Synagogue/Religious Institution
- - - Agricultural Land
- Special Use Areas
- Major Utility Lines

U.S. 41

SRA Strategic Regional Arterial Planning Study EXHIBIT B-1

Prepared by CH2M HILL in association with METRO Transportation Group and EJM Engineering

ILLINOIS DEPARTMENT OF TRANSPORTATION

Scale: 0 200 400 600 800 feet

PLANNING FOCUS AREAS

A) AMHURST PARKWAY INTERSECTION

- New at-grade signalized intersection access to Amhurst Lake Business Park

B) AMHURST PARKWAY TO IL 137

- Possible future extension of Lakeside Drive South

C) 22ND ST AND IL 137 INTERSECTIONS

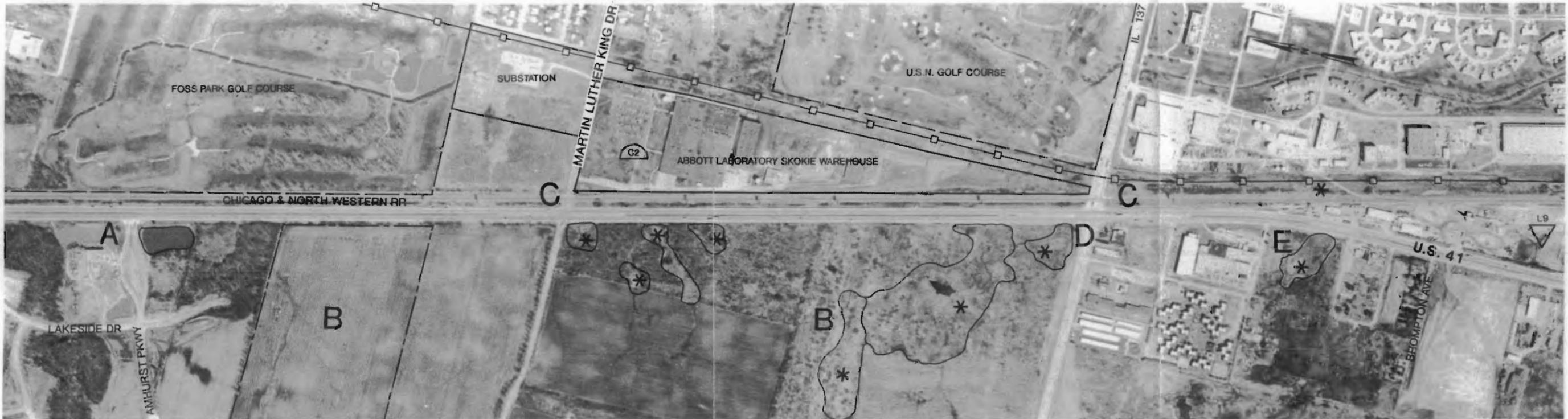
- At-grade railroad crossings in close proximity to at-grade intersections with U.S. 41 may affect SRA operation

E) I L 137 TO BROMPTON AVE

- Multiple cross median access may cause future operational problems

D) IL 137 INTERSECTION

- Intersecting SRA
- Future improvements may conflict with adjacent railroad, powerline, wetland, and commercial development



SUBURBAN SRA -- 120' TO 150' RIGHT OF WAY (DESIRABLE)

LEGEND

- A Planning Focus Area I.D.
- G1 Hazardous Waste Site
- L1 Leaking Underground Storage Tank
- H1 Historic Building/District
- * Wetland
- † ☆ Church/Synagogue/Religious Institution
- Agricultural Land
- Special Use Areas
- Major Utility Lines

U.S. 41

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SRA Strategic Regional Arterial Planning Study EXHIBIT B-2

PLANNING FOCUS AREAS

A) BROMPTON AVE TO ELGIN, JOLIET & EASTERN RY

- Multiple cross median access may cause future operational problems

B) ELGIN, JOLIET & EASTERN RY OVER U.S. 41

- Limited horizontal clearance for U.S. 41 under Elgin, Joliet & Eastern RY

C) ELGIN, JOLIET & EASTERN RY TO ILL. 176

- Multiple driveway access may cause future operational problems

D) ILL. 176 INTERCHANGE

- Future interchange improvements may conflict with adjacent residential and commercial development
- Limited horizontal clearance for U.S. 41 under IL 176



SUBURBAN SRA -- 120' TO 150' RIGHT OF WAY (DESIRABLE)

LEGEND

- A Planning Focus Area (B)
- Hazardous Waste Site
- Leaking Underground Storage Tank
- Historic Building/District
- Wetland
- Church/Synagogue/Religious Institution
- Agricultural Land
- Special Use Areas
- Major Utility Lines
- Floodplain/Floodway

U.S. 41

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Scale.
0 200 400 600 800 feet

SRA Strategic Regional Arterial Planning Study
EXHIBIT B-3

Segment II—“Lake Forest” (South of Illinois 176 to South of West Park Avenue)

Segment II of the U.S. 41 SRA is approximately 6.5 miles long, extending from south of Illinois 176 to south of West Park Avenue. This segment lies within Lake County and includes the communities of Lake Bluff, Lake Forest, and Highland Park.

Physical Characteristics

The existing cross section along Segment II consists of a four-lane (two lanes in each direction of travel) divided facility. The typical cross section varies in median treatment and roadside design along the entire segment. South from Illinois 176 to north of Deerpath Avenue, the median is 24 to 30 feet wide with paved shoulders and a concrete median barrier. The roadside design consists of paved shoulders and open drainage. U.S. 41 through the Deerpath Avenue interchange narrows. The median is reduced, providing a concrete barrier and no shoulders.

South of Deerpath Avenue to Old Elm Road, the median widens out to provide full left shoulders and a concrete median barrier with closed drainage. The exception in this area is under the C&NW railroad, where the shoulders are eliminated and the median is reduced. The outside drainage is predominantly open in this area.

From south of Old Elm Road to West Park Avenue, the median narrows slightly to about 20 feet. Inside shoulders (less than 10 feet) are separated by a concrete median barrier. The roadside design varies considerably. Both open drainage and closed drainage systems are used. In areas where right-of-way is particularly constrained, curb and gutter and a closed drainage system is provided outside the right shoulder. A summary of the existing cross section and other existing conditions is provided in Exhibits A-4 through A-6.

The horizontal alignment consists of long tangents and mild circular curves along most of this segment. However, south of Deerpath Avenue through the Illinois 60 intersection, the alignment becomes more critical. A sharp reverse curve consisting of 6 degree curves exists between Illinois 60 and Westleigh Road. Furthermore, the tangent between these curves is minimal. The vertical alignment is best characterized as level, with some rolling alignment where U.S. 41 travels under the C&NW structure.

The right-of-way within this segment varies from 100 to 220 feet. From south of Illinois 176 to Westleigh Road, the existing right-of-way is 160 feet. From south of Westleigh Road to about North Avenue, the right-of-way decreases to 120 feet. From North Avenue to Old Elm Road the right-of-way increases to 220 feet. The additional right-of-way occurs along the east side of U.S. 41, with berms to provide a “buffer” between U.S. 41 and residential development. From Old Mill Road to West Park Avenue existing right-of-way is most critical at 100 feet.

Physical characteristics worth noting in this segment include structures carrying or crossing U.S. 41. These structures, listed in Table 7, include U.S. 41 over Deerpath Avenue. At this location, a compressed diamond interchange is formed between U.S. 41 and Deerpath Avenue. South of Illinois 60, two structures cross U.S. 41. One carries the C&NW railroad and the other is an abandoned Commonwealth Edison structure. This abandoned structure is planned to carry a proposed pedestrian/bike path. Another physical characteristic worth noting in this segment is the earth berm that extends along the east side of U.S. 41, north from Old Elm Road to north of Westleigh Road.

Table 7			
Existing Major Structures Along Segment II			
(South of Illinois 176 to South of West Park Avenue) of U.S. 41			
IDOT Structure Reference	Feature		
	Over	Under	Comment
049-0033	Deerpath Avenue	—	
049-0034	—	C&NW	
049-0116	—	COM ED	Abandoned

Traffic Control, Operations, and Safety

Major intersections within this segment from north to south include Illinois 60 and Illinois 22. Both of these corridors are designated as suburban SRAs. Illinois 60 is a principal east-west corridor, traveling west from U.S. 41 to Illinois 176. Similarly, Illinois 22 is a major east-west SRA from I-94 to U.S. 14. The SRA to SRA intersection

of U.S. 41 and Illinois 60 is a signal-controlled “T” intersection. A dual left-turn lane is provided from northbound U.S. 41 to Illinois 60, and a right-turn lane is provided along the southbound approach. Illinois 22 also is at-grade and signal controlled. Turning movements from U.S. 41 to Illinois 22 occur away from the signal by at-grade ramps. Turning movements from Illinois 22 to U.S. 41, as well as all through movements, are controlled at the signal.

Three other signalized intersections are located along this segment. These signals are provided at Westleigh Road, Old Elm Road, and West Park Avenue. Left-turn lanes are provided along the U.S. 41 approaches to the intersections at Westleigh Road and Old Elm Road. At U.S. 41 and West Park Avenue, turning movements to West Park Avenue are accommodated away from the signal at the at-grade ramps.

One interchange is provided along this segment of U.S. 41. This compressed diamond interchange serves traffic between U.S. 41 and Deerpath Avenue.

During peak periods, congestion is evident along all portions of this segment, especially south of Deerpath Avenue. Stopped delays are experienced at all intersections. During the morning and evening peak periods, traffic at the U.S. 41 intersections with Illinois 60 and Illinois 22 experience long delays, resulting in lengthy queues, with vehicles frequently waiting through more than one signal cycle. At the U.S. 41 and Illinois 22 intersection, other operational problems are evident associated with the at-grade ramps. Traffic turning from these ramps to Illinois 22 often are blocked by long queues along Illinois 22, making it difficult to access Illinois 22. South of Old Elm Road to West Park Avenue, the frequency of access points and driveways create operational difficulties that further impact traffic operations. This is especially evident southbound along U.S. 41, where traffic slows along U.S. 41 to access abutting land use.

Operating speeds are relatively high in off-peak periods, with posted speed limits ranging from 45 to 50 mph. Parking is not permitted along U.S. 41 within this segment.

Existing traffic demand for this segment, based on the 1988 Lake County Traffic Map, ranges from approximately 35,000 to more than 53,500 vpd. In general, traffic increases from north to south. The heaviest traffic demand of 53,500 vpd is reported between Illinois 22 and West Park Avenue. Traffic is particularly heavy in this area due to the Illinois 22 corridor and the relatively dense commercial development in this area.

Accident data were obtained from IDOT files for 1987, 1988, and January to October 1989. Segment accident rates were calculated along U.S. 41 in accidents per MVM. Intersection accident rates, in accidents per MEV, also were calculated at selected intersections for which data were available. Intersection accident rates computed at Illinois 60 and Illinois 22 were 2.7 per MEV and 1.6 per MEV, respectively. Segment accident rates ranged from 4.4 per MVM to 27.3 per MVM. The two highest rates are reported north and south of the Illinois 60 intersection. These rates of 27.3 per MVM and 15.8 per MVM are higher than the statewide averages for comparable facilities. These rates may be the result of the relatively sharp horizontal curvature along this segment and the proximity of the signalized intersection at Illinois 60. Other calculated segment accident rates are average to below average when compared to statewide accident statistics.

Public Transportation

Public rail facilities do not operate within this segment of the corridor. The C&NW rail line that runs adjacent to U.S. 41 in this area serves only freight trains. Pace suburban buses operate only two routes that affect U.S. 41. Pace routes 471 and 473 operate along U.S. 41 between West Park Avenue and Deerfield Road. These routes operate two buses per hour during peak periods. Note, even though a commuter rail line does not operate directly adjacent to U.S. 41, Metra does operate the Metra/C&NW North Line located approximately 1 to 2 miles to the east of U.S. 41. Stations in this area include Lake Forest and Fort Sheridan.

Environmental Constraints and Land Use

There are a number of environmentally sensitive areas and concerns adjacent to U.S. 41 within this segment. Most, however, are located a sufficient distance from the corridor to pose minimal concern. A summary of the environmentally sensitive sites in this segment is documented in Table 8. Nine LUST sites were identified within the corridor influence area. Locations for these sites are provided in Table 8. Other concerns include the CERCLIS site associated with the former Highland Park Landfill located in the southeast quadrant of U.S. 41 and Half Day Road. Wetlands have been identified at a number of locations along this segment. Most notable are the wetlands located adjacent to the west side of U.S. 41 in the vicinity of Gage Lane. Wetlands also have been

Table 8
Summary of Environmentally Sensitive Land Uses
and Sites Along Segment II (Illinois 176 to West Park Avenue) of U.S. 41

Item	Exhibit No.	Reference	Description
Historic Sites	—	—	None noted
CERCLIS Sites ^a	B-6	C-1	Highland Park former landfill, southeast corner of U.S. 41 and Illinois 22, Highland Park
LUST Sites ^b	B-4	L-7	Lake Forest Hospital, 600 Westmoreland, Lake Forest
	B-4	L-6	City of Lake Forest, 500 W. Deerpath, Lake Forest
	B-6	L-5	Amoco Station, 2645 Skokie Valley, Highland Park
	B-6	L-4	City of Highland Park, 1150 Half Day Road, Highland Park
	B-6	L-3	K-Mart, 2099 Skokie Valley, Highland Park
	B-6	L-2	Material Service Corporation, 2000 Skokie Valley, Highland Park
	B-6	L-1	Grant Dean Buick, 1350 West Park Avenue, Highland Park

^aCERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System sites that reportedly have accepted hazardous substances or possess a record of accidental or illegal dumping

^bLUST = Leaking Underground Storage Tank

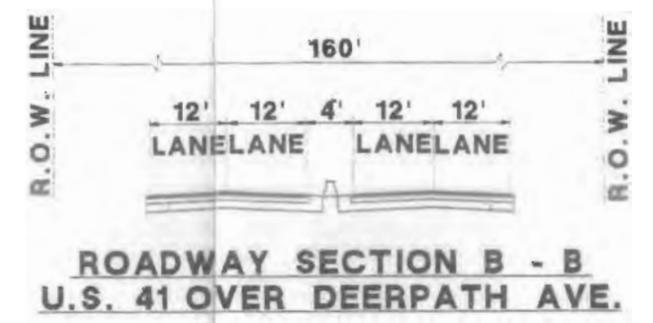
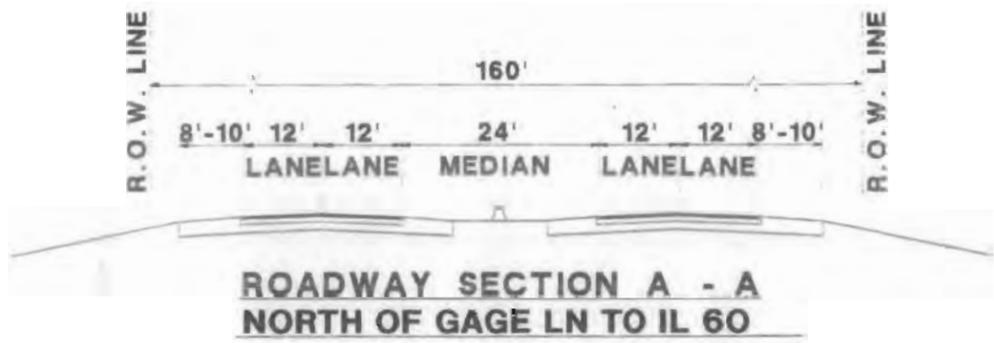
identified along both sides of U.S. 41 north of West Park Avenue. Exhibits B-4 through B-6 illustrate existing environmental concerns along this segment.

Development within this segment is primarily commercial and residential in nature. North of Deerpath Avenue, land use adjacent to the corridor includes open space and the Lake Forest Hospital on the west side, and forest preserve and the Deerpath Golf Course on the east side. South of Deerpath Avenue to Old Elm Road, existing land use is predominately residential. Between Old Elm Road and West Park Avenue, land use adjacent to the west side of U.S. 41 is commercial while land use along the east side is mixed residential and commercial.

Other sensitive land uses present along this segment include two substations located along the west side of U.S. 41 at the intersection of Old Mill Road and U.S. 41 and the intersection of West Park Avenue and U.S. 41. In addition, there are a number of parks including McLaughlin Meadow, Buena Park, Norcroft Park, and Centennial Park located along the corridor in this segment. The Walter Heller Nature Center also is located west of the C&NW railroad in this segment.

LEGEND

-  SIGNALIZED INTERSECTION
-  LANE ARRANGEMENTS AT KEY INTERSECTIONS
-  PARKING ALLOWED
-  PARKING PROHIBITED
-  NO POSTED RESTRICTIONS
-  DESIGNATED BUS STOP
-  RAPID TRANSIT STATION
-  METRA STATION



1988 - 1990
AVERAGE
DAILY
TRAFFIC

ACCIDENT
RATE

TRANSIT
ROUTES

EDGE OF WEST
ROAD USE EAST

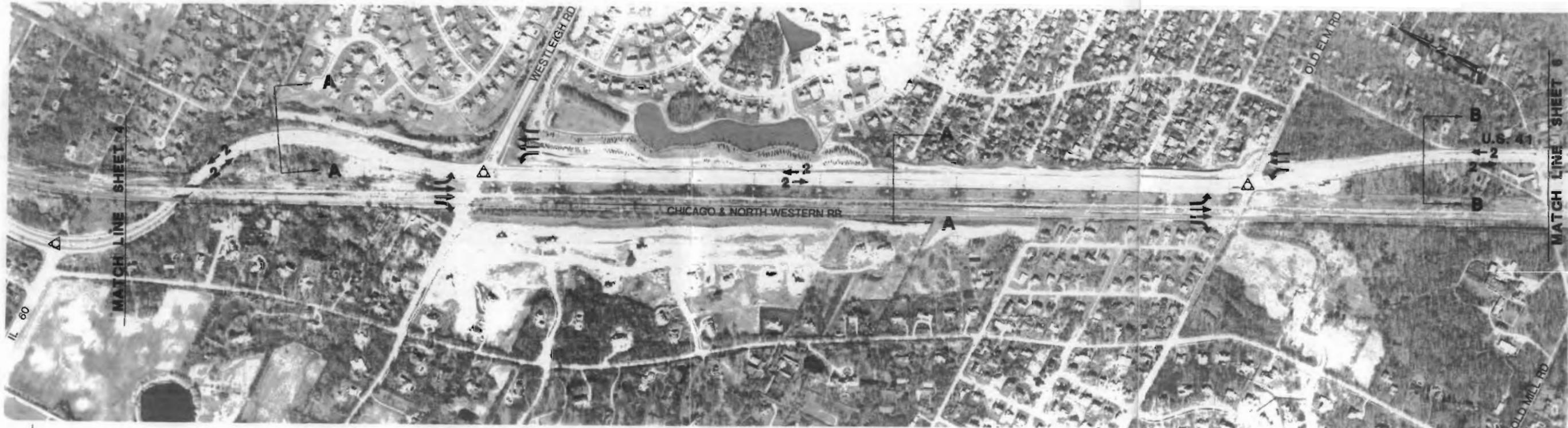
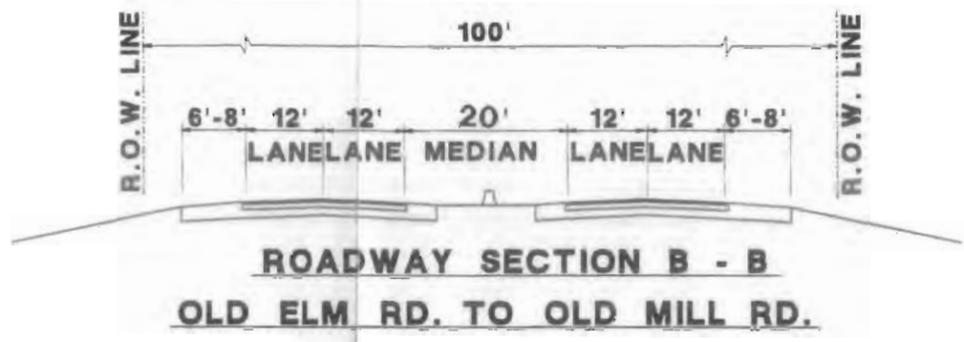
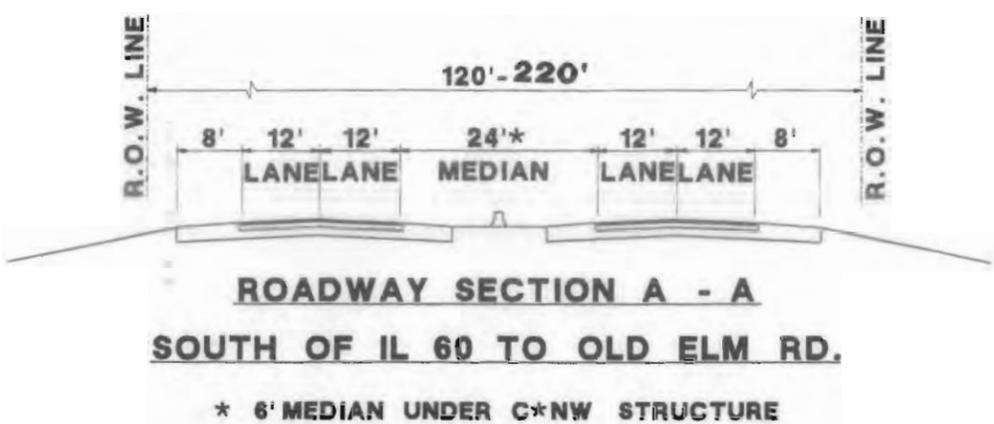
34,800	31,200
27.3 / MVM	
2.7/MEV	
METRA RAIL NONE	
PACE BUS NONE	
 	

U.S. 41 - EXISTING CONDITIONS

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LEGEND	
△	SIGNALIZED INTERSECTION
↔	LANE ARRANGEMENTS AT KEY INTERSECTIONS
P	PARKING ALLOWED
P	PARKING PROHIBITED
NR	NO POSTED RESTRICTIONS
□	DESIGNATED BUS STOP
CTA	RAPID TRANSIT STATION
METRA	METRA STATION



1988 - 1990
AVERAGE
DAILY
TRAFFIC

ACCIDENT
RATE

TRANSIT
ROUTES

EDGE OF WEST
ROAD USE EAST

34,900	38,500	44,600
15.8 / MVM		4.4 / MVM
METRA RAIL NONE		
PACE BUS NONE		
	P	
	P	

U.S. 41 - EXISTING CONDITIONS

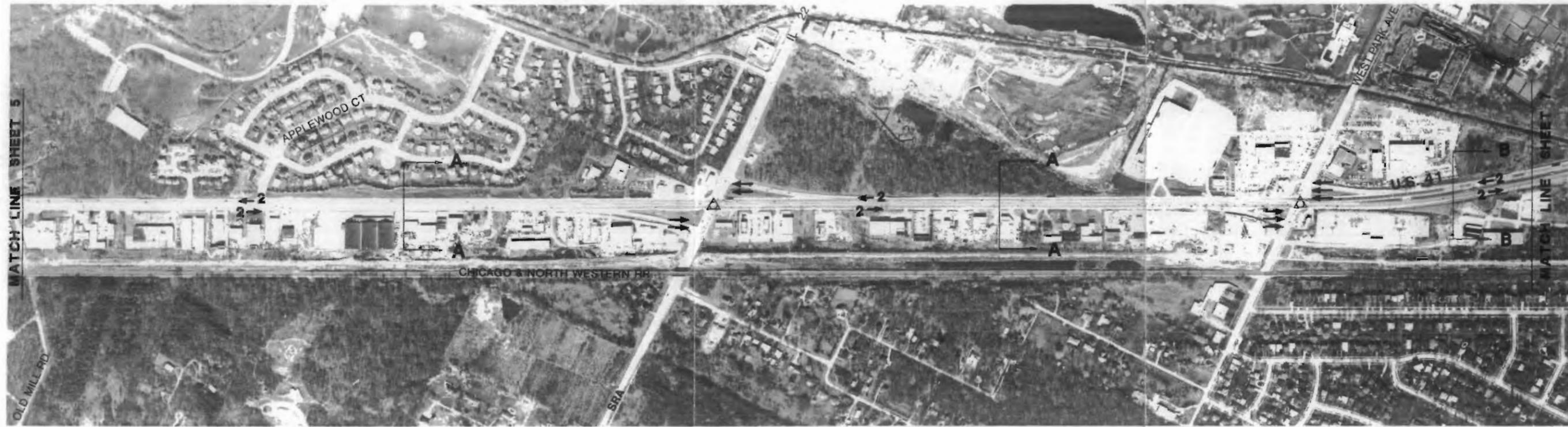
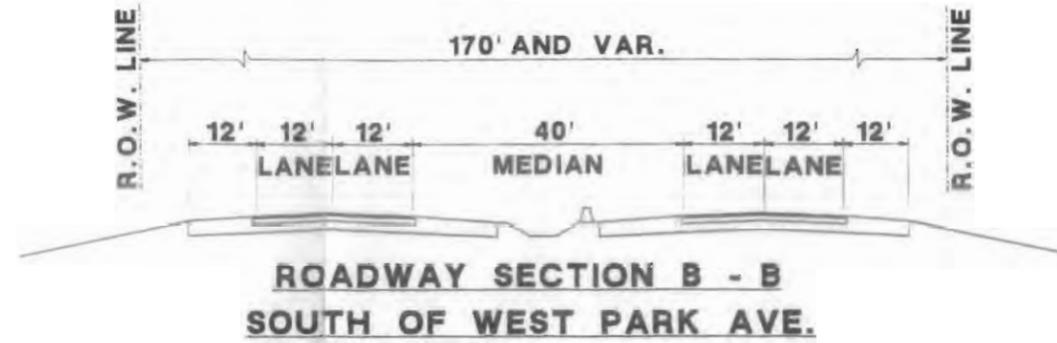
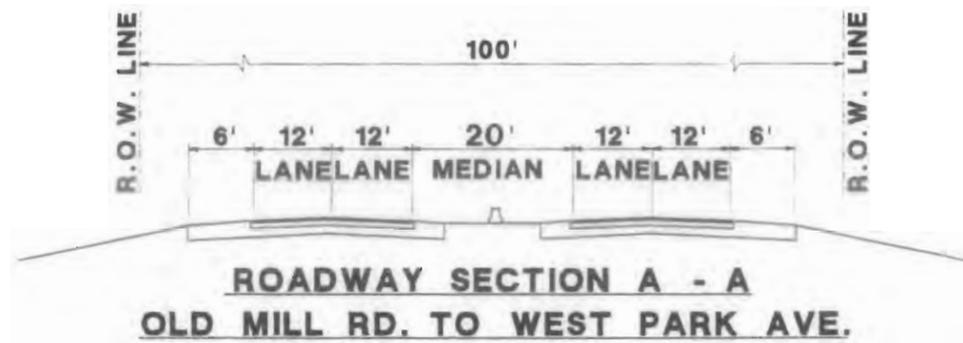
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SRA Strategic Regional Arterial Planning Study
EXHIBIT A-5



LEGEND

- △ SIGNALIZED INTERSECTION
- ↔ LANE ARRANGEMENTS AT KEY INTERSECTIONS
- (P) PARKING ALLOWED
- (P) PARKING PROHIBITED
- (NR) NO POSTED RESTRICTIONS
- DESIGNATED BUS STOP
- CTA RAPID TRANSIT STATION
- METRA METRA STATION



1988 - 1990
AVERAGE
DAILY
TRAFFIC

ACCIDENT
RATE

TRANSIT
ROUTES

EDGE OF WEST
ROAD USE EAST

44,600	53,600
4.4 / MVM	2.9 / MVM
1.6/MEV	
METRA RAIL NONE	
PACE BUS NONE	PACE BUS 471, 473 (2 PEAK BUS / HR)
(P)	
(P)	

U.S. 41 - EXISTING CONDITIONS

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PLANNING FOCUS AREAS

A) DEERPETH AVE INTERSECTION

- Improvements to the interchange may conflict with adjacent railroad, church, and residential development

B) DEERPETH AVE TO IL 60

- Limited acceleration/deceleration lane length and proximity to signal at IL 60 may contribute may affect SRA operation

C) IL 60 INTERSECTION

- Intersecting SRA
- Future improvements may conflict with adjacent railroad, powerline, and residential development



SUBURBAN SRA -- 120' TO 150' RIGHT OF WAY (DESIRABLE)

LEGEND

- A Planning Focus Area (P.F.A.)
- ☠ Hazardous Waste Site
- ⚠ Leaking Underground Storage Tank
- (H) Historic Building/District
- * Wetland
- ⛪ Church/Synagogue/Religious Institution
- ▨ Floodplain/Floodway
- Agricultural Land
- Special Use Areas
- Major Utility Lines

U.S. 41

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Scale:
0 200 400 600 800 feet

SRA Strategic Regional Arterial Planning Study
EXHIBIT B-4

PLANNING FOCUS AREAS

A) ILL. 60 TO WESTLEIGH RD

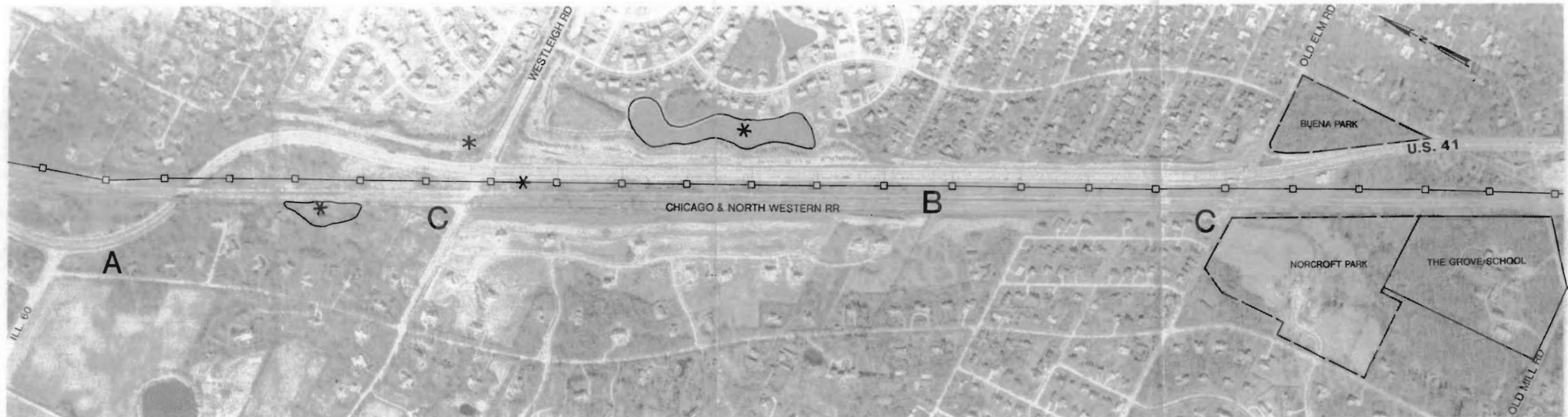
- Limited sight distance and signals at IL 60 and Westleigh Rd may affect SRA operation
- Limited horizontal clearance for U.S. 41 under Chicago & North Western RR

B) WESTLEIGH RD TO OLD ELM RD

- Future right-of-way requirements may conflict with adjacent powerline and residential development

C) WESTLEIGH RD AND OLD ELM RD INTERSECTIONS

- At-grade railroad crossings in close proximity to at-grade intersections with U.S. 41 may affect SRA operation



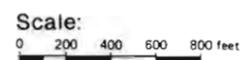
SUBURBAN SRA -- 120' TO 150' RIGHT OF WAY (DESIRABLE)

LEGEND

A	Planning Focus Area I.D.
(G1)	Hazardous Waste Site
(L1)	Leaking Underground Storage Tank
(H1)	Historic Building/District
*	Wetland
†	Church/Synagogue/Religious Institution
---	Agricultural Land
---	Special Use Areas
□-□	Major Utility Lines

U.S. 41

SRA Strategic Regional Arterial Planning Study EXHIBIT B-5



PLANNING FOCUS AREAS

A) OLD MILL RD TO IL 22

- Multiple driveway access may cause future operational problems

B) IL 22 INTERSECTION

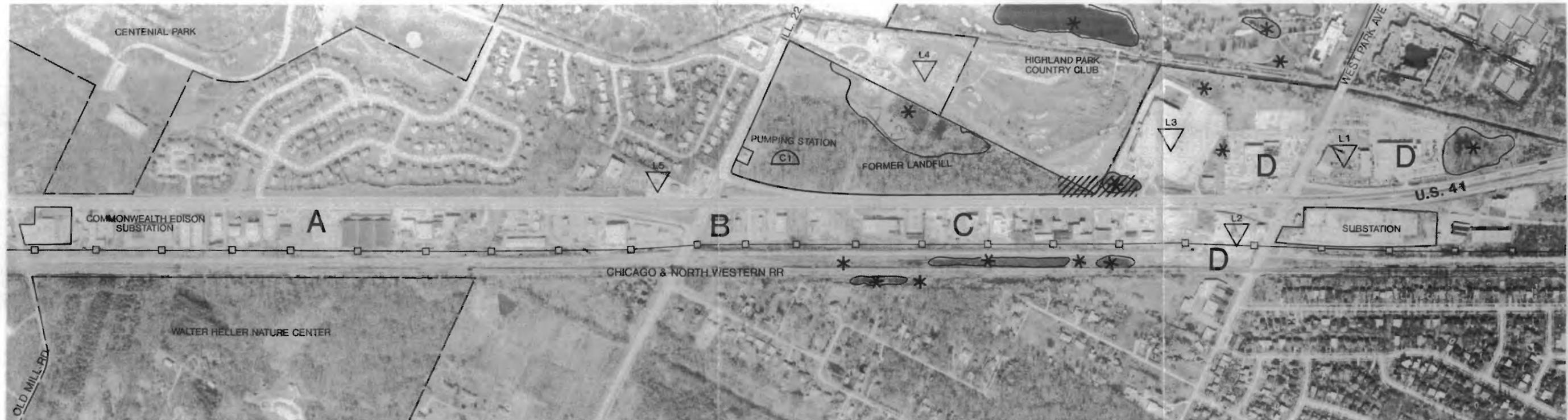
- Intersecting SRA
- Future improvements may conflict with adjacent former landfill, commercial and industrial development, and powerline

C) IL 22 TO WEST PARK AVE

- Multiple driveway access may cause future operational problems

D) WEST PARK AVE INTERSECTION

- Access to major commercial development conflicts with operation of intersection and U.S. 41



SUBURBAN SRA -- 120' TO 150' RIGHT OF WAY (DESIRABLE)

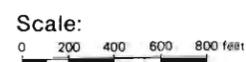
LEGEND

- A Planning Focus Area I.D.
- (C1) Hazardous Waste Site
- (L) Leaking Underground Storage Tank
- (H) Historic Building/District
- * Wetland
- † Church/Synagogue/Religious Institution
- /// Floodplain/Floodway
- Agricultural Land
- Special Use Areas
- Major Utility Lines

U.S. 41

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SRA Strategic Regional Arterial Planning Study
EXHIBIT B-6

Segment III—“Highland Park” (South of West Park Avenue to the I-94 Interchange (Edens Expressway))

Segment III of the U.S. 41 SRA is approximately 3.9 miles long, extending from south of West Park Avenue to the interchange with I-94 (Edens Expressway). This segment includes the City of Highland Park, Village of Northbrook, and portions of southern Lake and northern Cook Counties (see Exhibits A-7 and A-8).

Physical Characteristics

The typical cross section between West Park Avenue to Clavey Road consists of four lanes (two lanes in each direction of travel) divided by a median. The median dimension and treatment varies within this segment. South of West Park Avenue to south of Deerfield Road, the median is 40 feet wide and open. A concrete barrier is provided along some sections. Inside drainage is generally closed. The roadside design includes curb and gutter along the outside of the right shoulders at some locations. Both closed and open drainage systems are used in this segment. South of Deerfield Road to south of Clavey Road, the median narrows. A median barrier separates the two directions of travel and less than 10-foot inside shoulders are provided. The drainage is closed in the median and along the outside.

South of Clavey Road to the interchange with I-94, the typical cross section provides six lanes (three lanes in each direction of travel). The two directions of travel are separated by a 19-foot median. A concrete barrier and less than 10-foot inside shoulders are provided. The roadside design consists of full right shoulders, open ditches, and an open drainage system.

The horizontal alignment along this stretch of U.S. 41 consists of long tangents and mild horizontal curves less than 1 degree, resulting in a horizontal design speed in excess of 60 mph. The vertical alignment is characterized as level.

The right-of-way within the segment varies from 100 to 460 feet. From south of West Park Avenue to south of Deerfield Road, the existing right-of-way is 170 feet. Between the Deerfield Road interchange and the Clavey Road interchange, there is a section of U.S. 41 that is particularly constrained, providing only 100 feet of right-of-way. From

north of Clavey Road to Lake-Cook Road, the existing right-of-way ranges from 300 to 460 feet. The right-of-way then tapers to 250 feet to the south to the I-94 interchange.

Physical characteristics worth noting in this segment include structures carrying or crossing U.S. 41. The structures listed in Table 9 include U.S. 41 under Deerfield Road. South of Deerfield Road, a pedestrian overpass spans U.S. 41 and a portion of the Deerfield Road interchange. Clavey Road is grade separated with U.S. 41, with a structure carrying Clavey Road over U.S. 41. Other structures spanning U.S. 41 include the structure over Lake-Cook Road and the I-94 westbound bridge. Another physical characteristic worth noting is the Commonwealth Edison utility line that runs directly adjacent to the west side of U.S. 41 between Deerfield and Clavey Roads. Along the east side of U.S. 41 in this same area, a noise wall is provided to shield the residential development and Sunset Valley Golf Course from U.S. 41.

Table 9			
Existing Major Structures Along Segment III			
(South of West Park Avenue to Edens Expressway) of U.S. 41			
IDOT Structure Reference	Feature		
	Over	Under	Comment
049-0074	—	Deerfield Road	
Not Available	—	Pedestrian Overpass	
Not Available	—	Clavey Road	
016-0811	—	Lake-Cook Road	
016-9741	—	I-94 WB	

Traffic Control, Operations, and Safety

There are only three major intersections within Segment III. Signalized intersections are not provided along this segment, and U.S. 41 is essentially fully access controlled. At Deerfield Road, a cloverleaf interchange is provided with U.S. 41. At Clavey Road, the

interchange is best described as a two-quadrant partial cloverleaf. The next major intersection is at Lake-Cook Road, where a conventional diamond interchange is provided. The only other access point in this segment is at Chantilly Boulevard. Access into this development is provided to and from northbound U.S. 41 only. Acceleration and deceleration lanes are provided to assist in access and egress.

Traffic congestion is evident along all of U.S. 41 during the critical morning and evening rush hours. In addition, less than desirable traffic operation is evident at some of the interchanges. The weaving section associated with the cloverleaf interchange at Deerfield Road makes it difficult for traffic to enter and exit to and from Deerfield Road in the northbound and southbound directions. At the Lake-Cook Road interchange, significant vehicle queues form on the northbound exit ramp to Lake-Cook Road. In critical times, these queues back up into the U.S. 41 northbound through traffic lanes.

Operating speeds are relatively high in off-peak periods, with posted speed limits ranging from 50 to 55 mph. During critical peak periods traffic has been observed to operate at stop and go levels especially when congestion from I-94 is present.

Existing traffic demand for this segment is based on the IDOT 1988 Lake County Traffic Map and 1986 Cook County Traffic Map. ADT along this segment of U.S. 41 ranges from 52,300 to 62,800 vpd. Between Deerfield and Clavey Roads, ADT was reported at 52,300 vpd. South of Clavey Road to Lake-Cook Road, the ADT drops to 47,200 vpd. The heaviest traffic demand of 62,800 vpd is reported between Lake-Cook Road and the I-94 interchange.

Accident data were obtained from IDOT files for 1987, 1988, and January to October 1989. Segment accident rates were calculated along U.S. 41 in accidents per MVM. At-grade intersections are not present along this segment of U.S. 41, therefore intersection accident rates were not computed. Segment accident rates ranged from 2.9 per MVM to 11.1 per MVM. The highest rate of 11.1 per MVM was reported between Lake-Cook and Clavey Roads. Note that the above analysis and the data used do not reflect improvements to U.S. 41 subsequent to 1989. This includes the implementation of the Clavey Road interchange. Therefore, it would be reasonable to expect accident rates to be significantly reduced in this area.

Public Transportation

Public rail facilities do not operate within this segment of the corridor. The C&NW rail line that runs adjacent to U.S. 41 in this area serves only freight traffic. Pace suburban buses operate three routes that affect U.S. 41. Pace routes 471 and 473 use U.S. 41 between West Park Avenue and Deerfield Road. Pace route 473 continues south along Skokie Valley Road, where it proceeds west along Lake-Cook Road. Routes 471 and 473 provide two buses per hour during peak period operation. Other Pace routes include the east-west route 214, which crosses U.S. 41 at Lake-Cook Road. Note, even though a commuter rail line does not operate directly adjacent to U.S. 41, Metra does operate the Metra/C&NW North Line located approximately 1 to 2 miles to the east of U.S. 41. Stations that serve this area include Highland Park and Ravinia.

Environmental Constraints and Land Use

The environmental concerns and constraints identified within this segment are limited. As Table 10 indicates, LUST or CERCLIS sites were not identified within this segment of U.S. 41. Environmental concerns in this segment are associated primarily with wetlands adjacent to the corridor. The planning focus area exhibits (Exhibits B-7 and B-8) summarize environmental constraints in Segment III. A number of wetlands are located adjacent to and within the Deerfield Road interchange. Other wetlands are located along both sides of U.S. 41 between Deerfield and Clavey Roads.

Development varies throughout this segment. From West Park Avenue to Deerfield Road, land use is mostly commercial and industrial. South of Deerfield Road to Clavey Road, the land use is primarily residential, and south of Clavey Road, land use is both residential and commercial. Sensitive land use within this segment includes the Sunset Valley Golf Course between Deerfield and Clavey Roads and the Chicago Botanic Garden located along the east side of U.S. 41 south of Lake-Cook Road.

Table 10
Summary of Environmentally Sensitive Land Uses
and Sites Along Segment III (West Park Avenue to I-94) of U.S. 41

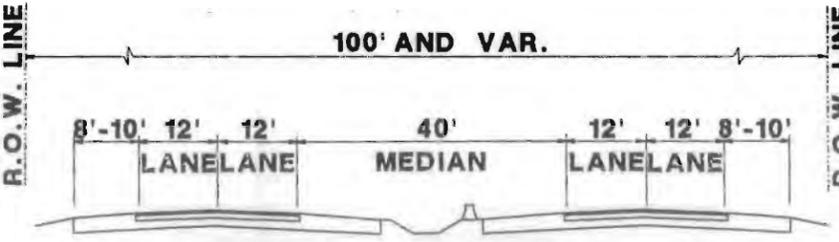
Item	Exhibit No.	Reference	Description
Historic Sites	—	—	None noted
CERCLIS Sites ^a	—	—	None noted
LUST Sites ^b	—	—	None noted

^aCERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System sites that reportedly have accepted hazardous substances or possess a record of accidental or illegal dumping

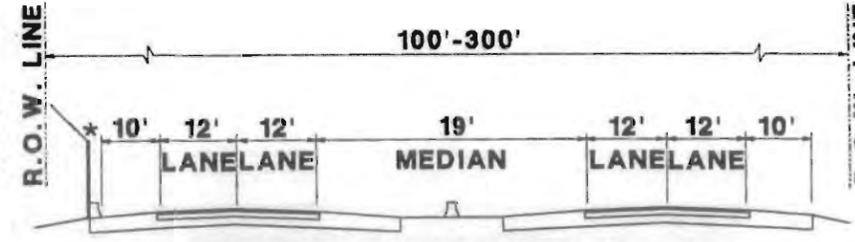
^bLUST = Leaking Underground Storage Tank

LEGEND

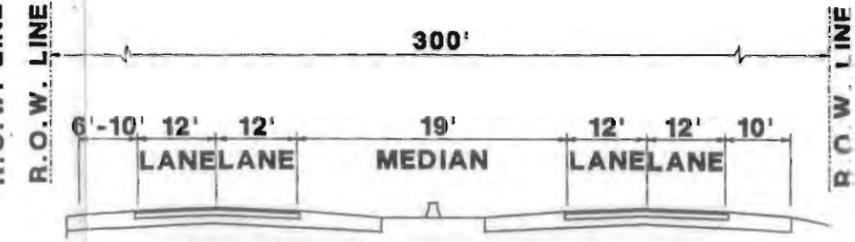
- △ SIGNALIZED INTERSECTION
- LANE ARRANGEMENTS AT KEY INTERSECTIONS
- (P) PARKING ALLOWED
- (P) PARKING PROHIBITED
- (NR) NO POSTED RESTRICTIONS
- DESIGNATED BUS STOP
- CTA RAPID TRANSIT STATION
- METRA METRA STATION



ROADWAY SECTION A - A
NORTH OF DEERFIELD RD. TO
SUNSET VALLEY GOLF COURSE

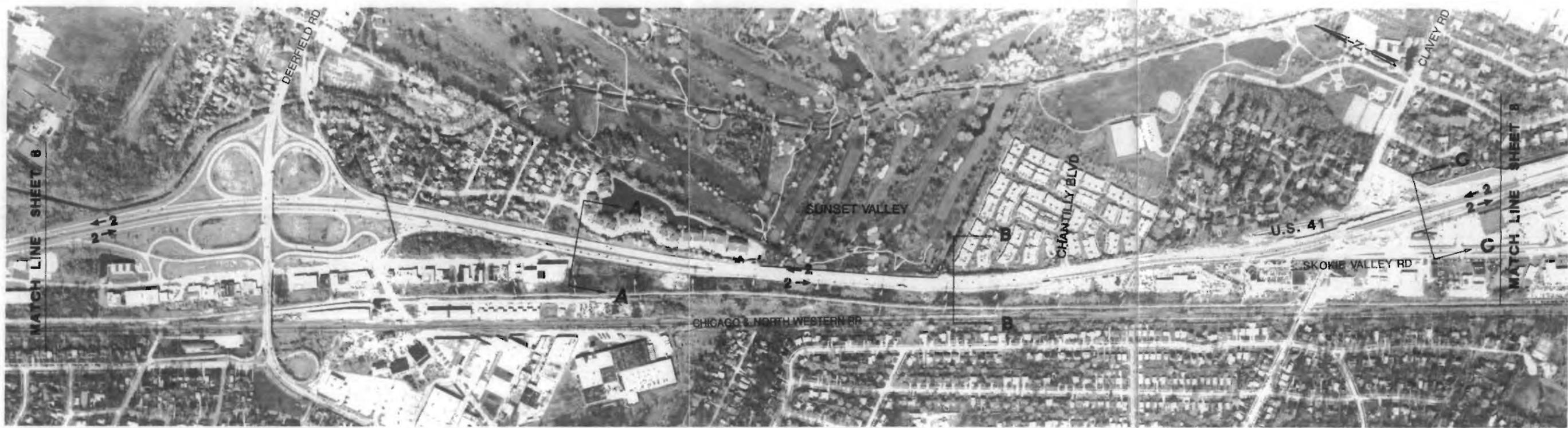


ROADWAY SECTION B - B
SUNSET VALLEY GOLF COURSE
TO SOUTH OF CHANTILLY BLVD.



ROADWAY SECTION C - C
SOUTH OF CHANTILLY BLVD.
TO SOUTH OF CLAVEY RD.

* RETAINING WALL AND/OR NOISE WALL
PROVIDED ON EAST SIDE OF U.S. 41



**1988 - 1990
AVERAGE
DAILY
TRAFFIC**

53,600

52,300

47,200

**ACCIDENT
RATE**

2.9 / MVM

5.2 / MVM

0.6/MEV

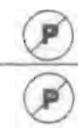
**TRANSIT
ROUTES**

PACE BUS 471, 473
(2 PEAK BUS/HR)

METRA RAIL NONE

PACE BUS NONE

**EDGE OF WEST
ROAD USE EAST**



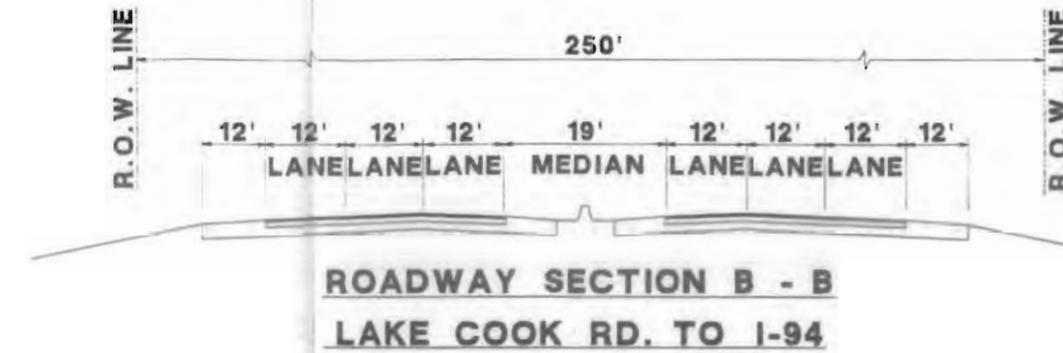
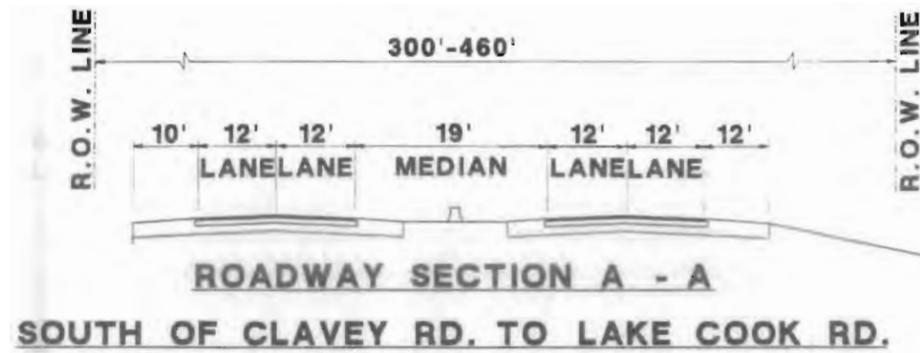
U.S. 41 - EXISTING CONDITIONS

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LEGEND	
△	SIGNALIZED INTERSECTION
↔	LANE ARRANGEMENTS AT KEY INTERSECTIONS
P	PARKING ALLOWED
P	PARKING PROHIBITED
NR	NO POSTED RESTRICTIONS
DS	DESIGNATED BUS STOP
CTA	RAPID TRANSIT STATION
METRA	METRA STATION



1988 - 1990
AVERAGE
DAILY
TRAFFIC

ACCIDENT
RATE

TRANSIT
ROUTES

47,200	62,800
11.1 / MVM	0.3/MEV
	METRA RAIL NONE
	PACE BUS NONE
	P
	P

EDGE OF WEST ROAD USE EAST

U.S. 41 - EXISTING CONDITIONS

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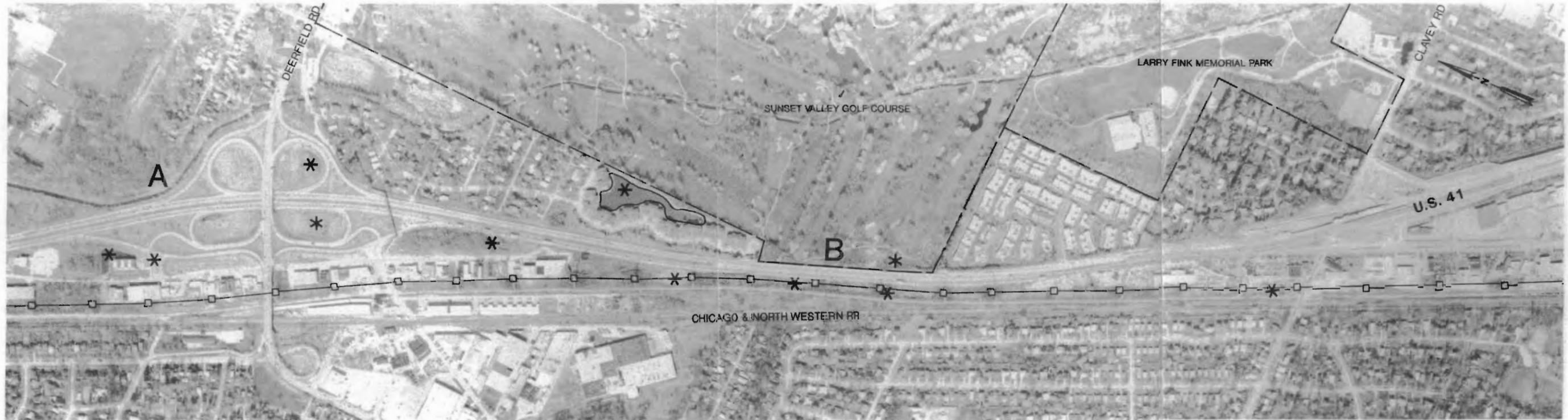
PLANNING FOCUS AREAS

A) DEERFIELD RD INTERCHANGE

- Existing interchange configuration and ramp geometry may affect SRA operation

B) DEERFIELD RD TO CLAVEY RD

- Future right-of-way requirements may conflict with adjacent powerline and residential and commercial development



SUBURBAN SRA -- 120' TO 150' RIGHT OF WAY (DESIRABLE)

LEGEND

- A Planning Focus Area (A, B)
- G4 Hazardous Waste Site
- L1 Leaking Underground Storage Tank
- H1 Historic Building/District
- * Wetland
- † Church/Synagogue/Religious Institution
- Agricultural Land
- Special Use Areas
- Major Utility Lines

U.S. 41

SRA Strategic Regional Arterial Planning Study EXHIBIT B-7

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Scale: 0 200 400 600 800 feet

PLANNING FOCUS AREAS

A) CLAVEY RD TO LAKE COOK RD

- Spacing of ramps at Clavey Rd and Lake-Cook Rd may affect SRA operation

B) LAKE COOK RD INTERCHANGE

- Interchanging SRA



SUBURBAN SRA -- 120' TO 150' RIGHT OF WAY (DESIRABLE)

LEGEND

- A Planning Focus Area I.B.
- ⊖ Hazardous Waste Site
- ⬇ Leaking Underground Storage Tank
- ⊞ Historic Building/District
- * Wetland
- † ⬠ Church/Synagogue/Religious Institution
- Agricultural Land
- Special Use Areas
- Major Utility Lines

U.S. 41

SRA Strategic Regional Arterial Planning Study EXHIBIT B-8

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Scale:
0 200 400 600 800 feet

Summary

The U.S. 41 SRA corridor is approximately 16 miles long, and travels through six communities and portions of Lake and Cook Counties. The character of the roadway is relatively consistent throughout the study area. Four basic lanes (two lanes in each direction of travel) are provided along the northern 12 miles of the corridor. Only the southern segment, south of Lake-Cook Road, provides six basic lanes (three lanes in each direction of travel). The U.S. 41 corridor is a unique SRA in that the exiting facility operates much like an expressway. The traffic control along the corridor varies, with a combination of at-grade signalized intersections, grade separations and grade-separated interchanges. Along most of the corridor there is a high level of access control. All cross median access is controlled through signalized intersections. South of Old Elm Road to West Park Avenue along the west side of U.S. 41, there are frequent, closely-spaced access points that intersect U.S. 41. These, however, are restricted to right-in/right-out movements only.

The U.S. 41 corridor is characterized by many different land uses and environmental concerns. The northern end of U.S. 41 is more rural and open. Existing land use is predominately industrial and office in nature. It is in this area that future land use has the greatest opportunity to develop. South of Illinois 176 through Lake Forest, the character of the area is more residential. South of Lake Forest through Highland Park, from Old Elm Road to south of West Park Avenue, land use transitions from residential to commercial. South of West Park Avenue to I-94, land use is mixed, including residential, commercial, and industrial. In addition, many sensitive land uses are present along the corridor. These include parks, forest preserves, nature areas, botanic gardens, etc.

Along most of the corridor, from Illinois 120 to Old Elm Road, existing right-of-way is substantial and adjacent land use is sufficient distance from the edge of pavement. Opportunities and options exist in these areas for improving the capacity, operation, and safety of the existing facility. South of Old Elm Road to West Park Avenue, intense commercial development along with restricted existing right-of-way limit the opportunities for improving capacity and operations without impact.

Traffic volumes along U.S. 41 tend to increase from the north to south. In the northern segment, ADT volumes range from 24,000 to 38,000 vpd. In the intense commercial areas (e.g., the vicinity of the Illinois 22 intersection), an ADT volume on the order of

54,000 vpd was reported. The heaviest volume, 63,000 vpd, is south of Lake-Cook Road as U.S. 41 meets I-94. Over the next 20 years, traffic volumes are expected to increase along the entire corridor.

Chapter III describes the planning framework within which the recommended plan was developed. Topics discussed in Chapter III include route design considerations, expected year 2010 transportation system changes and traffic volumes, year 2010 land use planning and development information, and any future areas of concern identified during improvement planning.

U.S. 41 SRA

Chapter III

U.S. 41 SRA

Planning Framework

Chapter III

U.S. 41 SRA Planning Framework

Long-range planning for the U.S. 41 corridor must be based on a range of transportation, land use, and community concerns. Regional transportation needs require balancing with local interests, plans, and constraints.

This chapter outlines the planning framework within which the U.S. 41 corridor should be viewed. Discussion in the chapter addresses both existing situations and conditions, as well as expected or forecast conditions for the long range. The following is a summary of the important elements of the U.S. 41 planning framework:

- Functional classification (the roles of SRAs in general, and U.S. 41 specifically, in serving regional transportation needs)
- SRA route design considerations and characteristics
- Long-range forecasts of highway traffic activity along U.S. 41
- Other planned transportation improvements within, crossing, or near the U.S. 41 corridor
- Long-range land use plans for the communities along U.S. 41 and for Lake and Cook Counties
- Existing safety and traffic operational factors along U.S. 41
- Existing environmental conditions and constraints
- Community concerns, interests, and attitudes

These comprehensive and often conflicting inputs were used to establish a basic concept for U.S. 41, which specifies:

- The number of continuous through lanes in each direction along U.S. 41
- Locations of future major signalized intersections

- Locations of special intersection design needs (i.e., possible interchanges)
- A general approach to access management
- The need for and locations of special or unique highway solutions
- Improvements to existing and planned transit facilities

Functional Classification

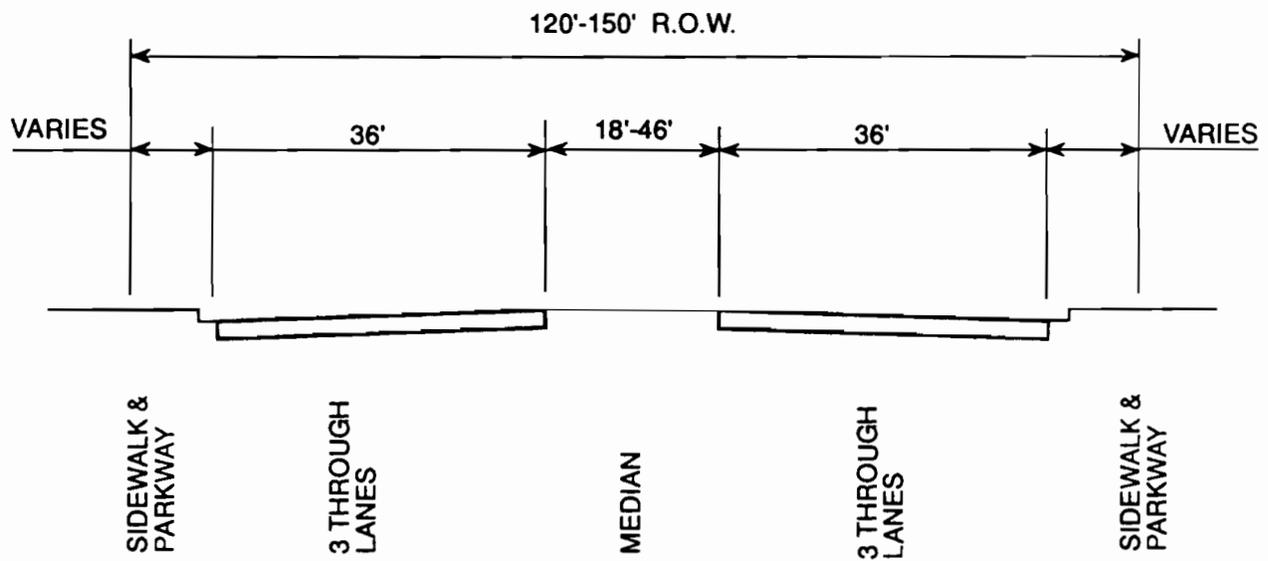
Previous planning efforts by the IDOT and CATS have established U.S. 41 as a SRA. Furthermore, the U.S. 41 corridor is classified as a suburban SRA for the entire length (Illinois 120 to the I-94 interchange). As a suburban SRA, the *desirable* characteristics of U.S. 41 include six basic, continuous, through lanes (three in each direction of travel) with a raised median for access control (see Exhibit 3). Characteristics of the desirable six-lane cross section are an initial goal in corridor development. Implementation of six-lane sections in suburban areas is considered desirable only if it can be accomplished over significant lengths. In critical locations it is essential that any SRA be planned for a minimum of four basic, continuous, through lanes (two lanes in each direction of travel).

Route Design Considerations

The SRA Design Concept Report, which serves as a guide in the planning of the SRA system, presents desirable cross sections for each SRA route designation in order to ensure adequate traffic service and geometric design within the right-of-way width indicated.

The desirable suburban SRA concept cross section requires 120 to 150 feet of right-of-way. This width accommodates a six-lane roadway (three lanes in each direction of travel) with an 18- to 46-foot raised median. The typical cross section implies a closed drainage system by including curb and gutter at the pavement edge. Other desirable route characteristics of a suburban SRA are listed in Table 11.

Note that the existing U.S. 41 four-lane, expressway type cross section is considerably different than the desirable suburban SRA cross section. Furthermore, along most of U.S. 41, the existing right-of-way is significantly greater than the maximum 150-foot desirable SRA right-of-way.



Desirable Suburban SRA Cross-Section

**Table 11
Year 2010 Desirable Route Characteristics for Suburban SRAs**

Right-of-Way Width	120 to 150 feet
Level of Service (Peak Hour)/Design Speed	C or D/45 mph
Number of Through Lanes	Three in each direction; 12-foot width
Median Width	18 to 46 feet, raised
Right Turns	Turn lanes at all major intersections
Left Turns	Dual left-turn lanes at all major intersections
Shoulders	Where appropriate, 10-foot width paved
Curbs	Yes, with 2-foot-wide gutters
Sidewalks	Where appropriate, 5-foot width
Parking	Not recommended
Cross Street Intersections	Signals with collectors and arterials, new local roads right-in/right-out only
Curb Cut Access	Consolidate access points at 500-foot spacing with cross easements
Transit	Bus turnouts, signs, and shelters; express bus service only; signal pre-emption and HOV potential
Number of Traffic Signals per Mile	Four maximum
Signalization	Synchronization with pedestrian actuation where needed
Freight: Radii Vertical Clearances	WB-55 typical/WB-60 Type II truck route New Structures: 16' - 3" Existing Structures: 14' - 6"
Loading	Off-street

The 2010 Transportation Network

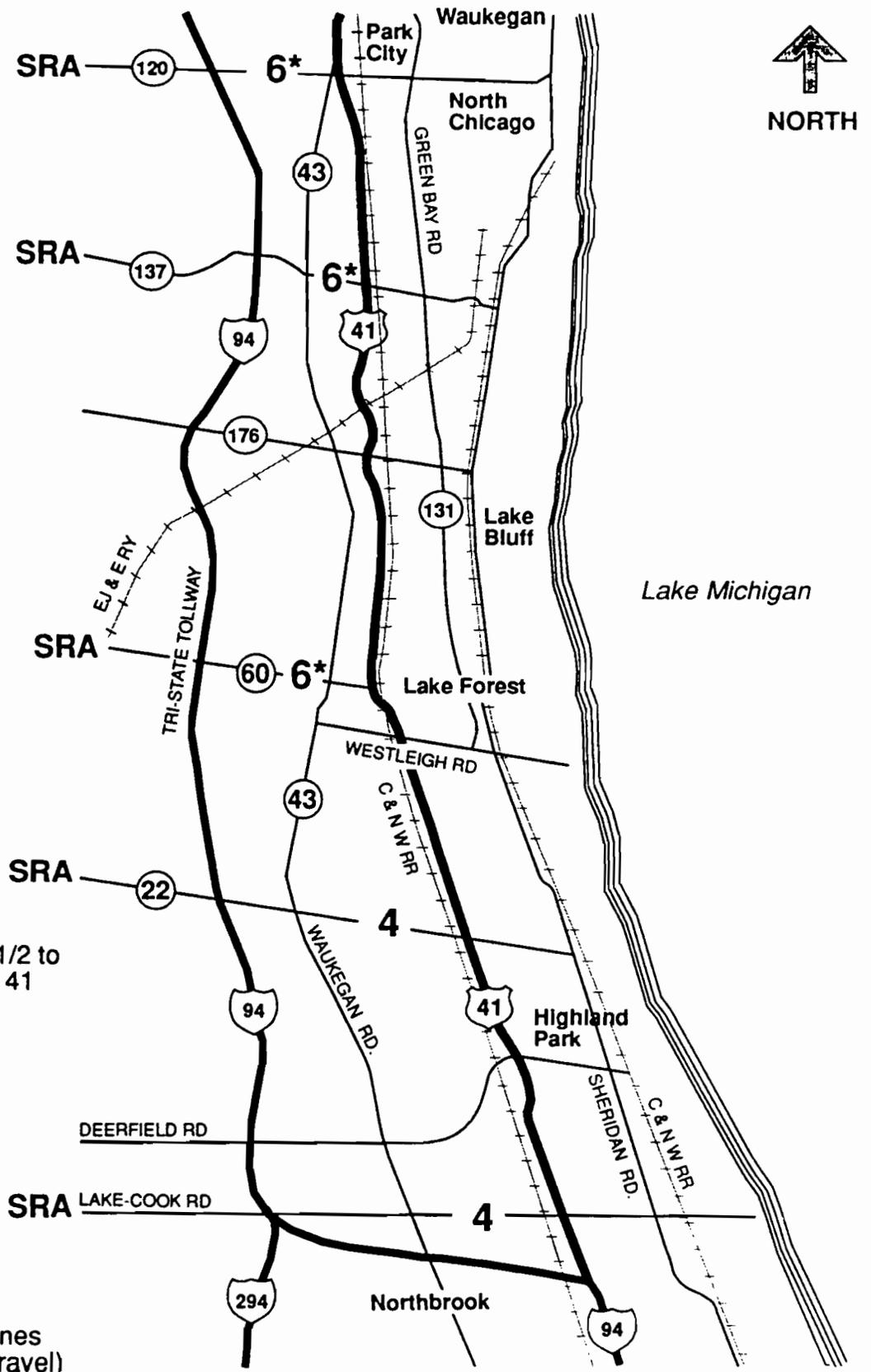
Exhibit 4 illustrates U.S. 41 in a regional context. The corridor is crossed by five other SRA routes (Illinois 120, Illinois 137, Illinois 60, Illinois 22, and Lake-Cook Road). These routes, in combination with U.S. 41, form a network of roadways intended to supplement the freeway system of northeastern Illinois by serving long-distance, regional through trips, as well as shorter, local trips. Other notable arterials that cross U.S. 41 are Martin Luther King Drive (22nd Street), Illinois 176, Deerpath Avenue, Deerfield Road, and Clavey Road. These non-SRA routes also will have a significant impact on the future operation of U.S. 41.

Another important and significant aspect of the long-range transportation plan in this area is the potential for the future expansion of I-94 (Tri-State Tollway). Currently, the Tri-State Tollway is being widened from six to eight lanes south of O'Hare Airport. The toll authority currently recognizes the potential of expanding I-94 from north of the O'Hare Airport to the Wisconsin border. Moreover, the Wisconsin Department of Transportation also has plans to expand I-94 north of the Illinois-Wisconsin State Line to four lanes in each direction of travel.

U.S. 41 is paralleled by two major arterials. Illinois 43 (Waukegan Road) is located approximately 1.5 miles west of U.S. 41, and is designated as a SRA south of Lake-Cook Road. Illinois 131 (Green Bay Road) and Sheridan Road parallel U.S. 41 roughly 1.5 miles to the east. Other "lower class" roads parallel U.S. 41 at closer distances, but none have the necessary continuity or functional classification to act as an alternate route for the regional trips that U.S. 41 is intended to serve.

Although not pictured in Exhibit 4, but considered a part of the local transportation network and the CATS 2010 long-range transportation network, is the planned extension of Illinois 53 (FAP 342) through Lake County from Lake-Cook Road to Illinois 120. The current alignment under study would parallel U.S. 41 between Illinois 120 and Lake-Cook Road approximately 10 miles to the west. It is anticipated that this future corridor would complement U.S. 41 by carrying a substantial amount of north-south traffic.

Three railroad facilities either cross or have proximity effects on U.S. 41. The C&NW Metra/North Line is located approximately 1.5 miles to the east. The C&NW



Note: IL 21 (SRA) <1/2 to 6 miles west of U.S. 41

- 6** Number of future lanes (both directions of travel)
- *** SRA route to be studied -- lanes are desirable as per SRA Design Concept Report

FUTURE TRANSPORTATION NETWORK IN THE VICINITY OF U.S. 41

railroad parallels U.S. 41 along the east side of the corridor from Illinois 120 to south of Illinois 60, as well as along the west side of U.S. 41 from south of Illinois 60 to I-94. This railroad serves freight traffic only. The EJ&E railway is grade-separated with U.S. 41 north of Illinois 176. This facility also serves freight traffic only.

Year 2010 and Existing Traffic

Forecasts of traffic volumes were prepared by CATS to illustrate the level and pattern of traffic under expected future conditions. The forecasts were based on regional land use assumptions furnished by the Northeastern Illinois Planning Commission (NIPC), and assume a network as specified in the year 2010 plan, with the full SRA system in place designed to the desirable SRA criteria. Specific to U.S. 41, the forecasts also assume that Illinois 53 (FAP 342) is in place.

The traffic forecasts are used as a reference only, not as a primary tool in corridor sizing. They provide a means, particularly when compared to existing traffic, of judging the long-range need for corridor improvements. In short, traffic volumes can be expected to increase over the next 20 years. Employment and population growth will continue to be significant in Lake County.

As Table 12 indicates, the projected volume of traffic along U.S. 41 varies from approximately 20,000 vpd in the northern segments to 45,000 vpd between Illinois 22 and West Park Avenue. Forecast ADT volumes indicate that traffic growth within the study area may be marginal. This is especially evident south of the Deerfield Road interchange. It is anticipated that the Year 2010 Transportation Plan, including the Illinois 53 extension and expansion of the Tri-State Tollway, would carry a significant volume of north-south traffic. This would have some impact on the relatively marginal traffic growth along U.S. 41. In any event, it is prudent and reasonable to anticipate and plan for some level of traffic growth along the entire U.S. 41 corridor.

Table 12
Year 2010 Average Daily Traffic (ADT)
Forecast for Strategic Regional Arterial for U.S. 41

Location	Existing	2010 ADT Forecast
Illinois 120 to Illinois 137	23,900 to 32,500	20,000 to 25,000
Illinois 137 to Deerpath Avenue	34,000 to 37,800	35,000 to 40,000
Deerpath Avenue to West Park Avenue	31,000 to 45,000	40,000 to 45,000
West Park Avenue to I-94	47,000 to 63,000	48,000 to 53,600

Source: Chicago Area Transportation Study

Other Corridor Planning Activities

Roadway Improvements

Previous and current planning information was obtained for the U.S. 41 SRA corridor from the IDOT, CATS, NPC, Lake County, Cook County, and surrounding communities. All of the information received was considered in the planning effort, and some projects were considered as existing conditions. The Illinois 53 extension (FAP 342) from Lake Cook Road to Illinois 120 was considered more long range in nature. The Phase I Study for this project is currently underway. Projects listed in the IDOT's *FY 1993-1997 Proposed Highway Improvement Program* were considered as "existing" conditions. These include the following projects:

- Land acquisition north of Martin Luther King Drive to the EJ&E railway
- Rehabilitation of the existing pump station at EJ&E railway

Two other IDOT studies within the project area were referenced when developing the proposed corridor plan. One major study considered was the IDOT *Project Report for U.S. 41 (Skokie Valley Road) from Clavey Road to Illinois 176*. This report, completed in 1982, discusses reconstruction of the Deerfield Road interchange, drainage improvements, and reconstruction of the existing U.S. 41 pavement. Another IDOT report entitled *Technical Report Feasibility Study-U.S. Route 41 from EJ&E Railway to Casimer Pulaski Drive* was referenced. This study investigated various intersection and interchange options at Illinois 137 and Martin Luther King Drive. This report recommends implementation of access management controls including additional access roads east and west of U.S. 41.

City and Village Comprehensive Plans

Information regarding local transportation plans, land use plans, and community objectives was requested and sought out from communities along the U.S. 41 corridor. Table 13 lists those plans that were made available and were reviewed in conjunction with the overall corridor planning.

**Table 13
Summary of Previous and Concurrent Planning Studies Relevant to U.S. 41**

Study, Plan, or Report	Source
Transportation Planning Studies	
<ul style="list-style-type: none"> • CATS 2010 Transportation System Development Plan • Project Report—Categorical Exclusion Type II, U.S. form Clavey Road to Illinois 176 (1982) State Line (1988) • Technical Report Feasibility Study, U.S. Route 41 from EJ&E Railway to Casimer Pulaski Drive • Metra "Project Proposal" Booklet • IDOT FY 1993-1997 Proposed Highway Improvement Program 	<p>CATS</p> <p>IDOT</p> <p>IDOT</p> <p>Metra</p> <p>IDOT</p>
Land Use and Comprehensive Plans	
<ul style="list-style-type: none"> • Comprehensive Plan (1987) Zoning Map (1990) • Zoning Map (Revised 1991) • Zoning Map (1991) • Comprehensive Plan (1986) • Zoning Map • Comprehensive Plan (1989) Land Use Map (1989) Transportation Plan (1989) Zoning Map (1988) • Comprehensive Master Plan (1976) Zoning Map (1991) • Comprehensive Plan (Preliminary) Zoning Map (1991) • County of Cook Highway Transportation Plan (1991-1995) • Lake County Framework Plan (1989) Year 2005 Lake County, Illinois Transportation Plan 	<p>Waukegan Waukegan</p> <p>North Chicago</p> <p>Park City</p> <p>Lake Bluff</p> <p>Lake Bluff</p> <p>Lake Forest Lake Forest Lake Forest Lake Forest</p> <p>Highland Park Highland Park</p> <p>Northbrook Northbrook</p> <p>Cook County</p> <p>Lake County Lake County</p>
Other Plans and Studies	
<ul style="list-style-type: none"> • FAP 342 Right-of-Way • Skokie Corridor Area Master Plan Proposal • Comprehensive Operating Plan • Future Agenda for Suburban Transportation (1992) • Traffic Planning Study - Abbott Park Northeast Development (1993) • Northeastern Illinois Regional Greenways Plan (1992) 	<p>IDOT</p> <p>Highland Park</p> <p>Pace</p> <p>Pace/Metra</p> <p>Abbott</p> <p>NIPC</p>

Transit Improvements

Several transit-related improvements in the vicinity of U.S. 41 have been proposed, studied, or planned (see Table 14). Metra is currently evaluating service extensions to existing lines. One proposed extension is the Milwaukee District/North Line, where Metra is evaluating the Wadsworth extension as a new branch that would operate between the soon to be reopened Roundout Station and Wadsworth (near Illinois 176). Other nearby stations that are proposed include Abbott Park (at Martin Luther King Drive) and Waukegan (Lakehurst). This extension is proposed to operate parallel to U.S. 41, approximately 1.3 miles west. This extension would parallel I-94 and Waukegan Road (Illinois 43) for a considerable distance.

Transit Facility or Route	Location	Status/Comment
Milwaukee District/North Line- Wadsworth Extension	Parallel to U.S. 41, approximately 1.3 miles west, north of Illinois 176	Proposed extension of Metra commuter service to far north suburbs; reopening of Rondout Station (at Illinois 176) to handle transfers between commuter branches; proposed Abbott Park (22nd Street) and Waukegan (Lakehurst) Stations
EJ&E	Crosses in Lake Bluff, approximately 0.6 mile north of Illinois 176	Proposed circumferential Metra commuter line; potential stations at Rondout (Milwaukee District/North Line at Illinois 176), Illinois 43- Waukegan Road, U.S. 41, and Illinois 131- Green Bay Road
Metra/CNW North Line Lake-Cook Road Station	Lake-Cook Road, just west of Illinois 43, 2.2 miles west of U.S. 41	Proposed Metra commuter station
Middle Circumferential Corridor	Crosses at approximately Lake-Cook Road	Major project transit line connecting west and north suburbs
Skokie Swift Extension	Extending south of the corridor from Lake-Cook Road/Edens Expressway	Proposed transit extension of existing Skokie Swift CTA line

A new station is proposed by Metra/Chicago Northwestern North Line at Lake-Cook Road. The purpose of this station is to help relieve parking conditions in Northbrook and Deerfield. This station also would serve reverse commuters from Chicago and residents of northwestern Lake County to employment in the Lake-Cook Road office corridor.

Currently, Metra is studying the potential of using the EJ&E railway for commuter rail service sometime in the near future. The EJ&E railway is primarily a single-track line with numerous sidings and both grade-separated and at-grade rail crossings. With the exception of the segment between Aurora and Barrington, station locations have not been identified. However, 34 possible station locations have been proposed. The EJ&E railway currently crosses in Lake Bluff, north of Illinois 176. The following is a list of proposed stations near the U.S. 41 corridor:

- Roundout (Milwaukee District/North Line at Illinois 176)
- Illinois 43 (Waukegan Road)
- U.S. 41
- Illinois 131 (Green Bay Road)

Another proposed transit project is the Middle Circumferential Corridor. This is a major project transit line connecting the west and north suburbs. This facility would be expected to connect suburban population centers with suburban office centers and shopping malls. In addition, inter-connections to five existing and three proposed commuter lines serving suburb-to-suburb, inbound, and reverse commuting are intended. This facility is proposed to cross U.S. 41 at approximately Lake-Cook Road. The Middle Circumferential Corridor was proposed in a study to involve Personal Rapid Transit vehicles.

Skokie Swift CTA Rapid Transit also is considering a service extension. This proposed transit extension would provide an extension of service north of the existing Skokie Swift CTA Rapid Transit Line. Much of this extension is proposed to operate along I-94 (Edens Expressway) north to Lake-Cook Road.

Several Pace Bus Routes cross the corridor and operate along the corridor for a brief distance. Where bus routes exist, bus stops, shelters, and turnouts should be installed consistent with suburban SRA and Pace guidelines. Where bus routes do not exist along the corridor, space for bus stops, shelters, and turnouts should be reserved in the event that future development may warrant future bus service. Considering that much of the corridor is access controlled with grade-separated interchanges, recommended bus stops may need to be located on adjacent access roads. Note that Pace does not have existing plans for additional routes along this segment of U.S. 41.

The proposed U.S. 41 plan described in Chapter IV documents specific improvements with respect to future stops shelters, park-n-ride facilities, etc. along U.S. 41.

Future Land Use and Development

Information regarding existing and future land use plans was obtained from field observations, input from the U.S. 41 Advisory Panels, and from the various communities, regional organizations, and counties that U.S. 41 serves (see Table 13).

Future Conditions

Existing and future land use varies along the U.S. 41 corridor. To the north, open spaces are expected to develop. Light industrial, commercial, and office land use development is anticipated in these areas. South of Illinois 176 to Old Elm Road through Lake Forest, residential development is envisioned to continue. The Lake Forest Hospital is located in this section. The Highland Park area between Old Elm Road and West Park Avenue is the most notable commercial area in the corridor. Those areas where land use would be expected to intensify and/or evolve and areas of particular interest include:

- North of Martin Luther King Drive to Illinois 120 within North Chicago adjacent to U.S. 41, land use is expected to increase primarily in office development and light industrial
- Abbott Laboratories is expected to increase development, substantially in the areas adjacent to U.S. 41 between Illinois 137 and Martin Luther King Drive
- In the southeast and southwest quadrants of Illinois 176 and U.S. 41, commercial land use is expected to intensify, with new development already under construction
- In the southeast quadrant of the U.S. 41 and West Park Avenue intersection, the property formerly occupied by a car dealership is currently under redevelopment

- A significant off-corridor development that may have significant impacts along the U.S. 41 corridor and at key intersections is the future redevelopment of the Fort Sheridan Property

The following is a summary of key constraints and unique conditions described in Chapter II. Such constraints influenced the development of the overall concept for the U.S. 41 corridor.

Existing Environmental Constraints, Unique Conditions, and Areas of Concern

Illinois 120 to South of Illinois 176

This segment of U.S. 41 contains a considerable number of wetlands. Right-of-way is somewhat limited along the west side of U.S. 41 due to wetlands. The right-of-way problem is exacerbated due to the C&NW railroad paralleling U.S. 41 along the east side in the same area. Other environmental constraints such as CERCILS and LUST sites represent a concern along this segment of U.S. 41. South of Illinois 137 to north Illinois 176, multiple access points affect the corridor. In addition, a review of the *District One Pavement Flooding Prioritization 1992 Annual Report* lists locations in the vicinity of Illinois 176, Illinois 137, and the EJ&E railway where U.S. 41 has flooded.

South of Illinois 176 to West Park Avenue

North and south of Gage Lane, the corridor lies within or adjacent to the existing floodplain/floodway. There also are wetlands adjacent to both sides of U.S. 41 at spot locations. Similar to Segment I, right-of-way is limited along the east side of U.S. 41, from north of Deerpath Avenue to Illinois 60, as a result of the proximity of the C&NW railroad. South of Westleigh Road, the existing earth berms are a concern. These represent both a noise and visual barrier considered essential to the surrounding residential areas. Other environmental concerns include the proximity of sensitive land uses such as Buena Park and Lake Forest Hospital. The horizontal alignment along U.S. 41 south of Illinois 60 and the limited sight distance to the intersection at Illinois 60 represents a concern. Within this segment, review of the IDOT's records identified two locations where pavement flooding occurred.

West Park Avenue to I-94 Interchange

Environmental concerns along this segment of U.S. 41 are associated with wetlands directly adjacent to U.S. 41. Wetlands are particularly prevalent within and surrounding the Deerfield Road interchange and south of Deerfield Road. There are also segments of U.S. 41 that lie within existing floodplains/floodways, which becomes a concern should U.S. 41 be widened. A review of the IDOT's *District One Pavement Flooding Prioritization 1992 Annual Report* identified locations at Clavey Road and West Park Avenue where pavement flooding has occurred. Right-of-way is severely limited south of Deerfield Road between the Sunset Valley Golf Course along the east and the Commonwealth Edison utility line along the west. Other environmental constraints include sensitive land uses such as parks and the Botanic Gardens. With respect to traffic operations, the development and multiple access points serving development south of West Park Avenue further impact traffic level of service.

A unique concern to this segment is the importance of communicating to motorists that U.S. 41 transitions from a fully access-controlled facility to a limited access-controlled facility, with at-grade intersections, north of Deerfield Road.

Community Concerns, Interests, and Attitudes

The interests of the communities through which U.S. 41 passes through are important factors in the development of a reasonable and feasible consensus plan for the U.S. 41 SRA corridor. A Corridor Advisory Panel was established, comprised of elected officials and technical staff from the counties and communities along U.S. 41. Three rounds of panel meetings were held to present SRA concepts and discuss the corridor and its recommended draft plan and report, and to provide the IDOT consultant with background on community interests, concerns, etc.

Chapter V contains minutes from the three sets of meetings, held on September 12, 1992; March 12, 1993; and November 8, 1993. The following is a summary of key concerns discussed during these meetings:

- There was considerable discussion regarding the Phase I IDOT study relocating U.S. 41 through portions of North Chicago. North Chicago stated that they were opposed to the relocation of U.S. 41 in this area.

- Concerns were expressed that the SRA plan would eliminate curb cuts for existing businesses along U.S. 41. Land uses located within North Chicago were specifically addressed.
- There were discussions regarding traffic along U.S. 41. Concerns were expressed that expanding or improving U.S. 41 would increase traffic along U.S. 41. The possibility of traffic shifting from the Tri-State Tollway to U.S. 41 was discussed. Comments were made that any improvement to U.S. 41 should only be made in conjunction with implementation of the 2010 transportation plan.
- Lake Bluff expressed concern over intersection/interchange improvements at Illinois 176 and U.S. 41. In particular concerns were expressed regarding SRA improvements encroaching into surrounding property, and the need for improvements to provide “safe and convenient” access to and from U.S. 41 at Illinois 176.
- Lake Forest expressed concern over the existing earth berms located south of Illinois 60 to Old Elm Road, along the east side of U.S. 41. In their view, it is extremely important and desirable to maintain these berms.
- The majority of the panel agreed that a six-lane cross section should be developed.

The input received from these sources was taken into account in the production of the final report and the recommended plan presented in Chapter IV.

Recommended SRA Corridor Concept for U.S. 41

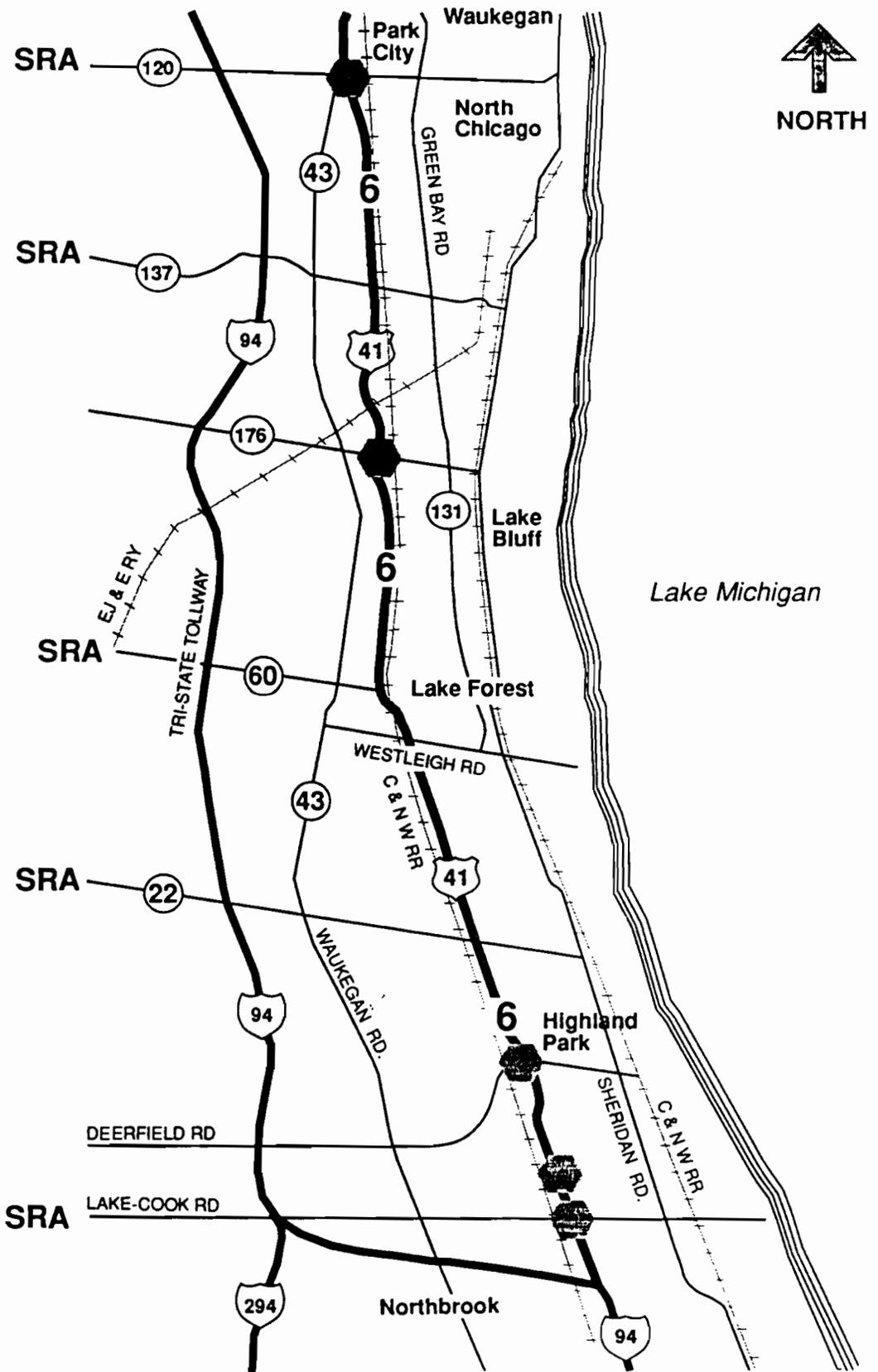
Based on the input described in Chapter III, the commended corridor concept illustrated in Exhibit 5 was established for U.S. 41. The concept elements include the basic number of through lanes, intersection and interchange requirements, access control and median treatments, and special design features.

Basic Number of Lanes

The importance of U.S. 41 is heightened by its significant regional continuity. U.S. 41 offers a high capacity, expressway type, continuous route connecting I-94 (Edens Expressway) to I-94 (Tri-State Tollway). The closest alternative route or nearby freeway or toll facility is I-94, which is between 1 and 2 miles to the west. The only continuous SRA that is roughly parallel to U.S. 41 is U.S. 45, which is 6 miles to the west. Furthermore, U.S. 41 serves the rapidly developing areas within Lake County.

The need for a continuous six-lane arterial along this entire corridor is evident. Existing demand and the lack of sufficient capacity along U.S. 41 creates delays, poor peak period levels of service, as well as other operational concerns. Future growth in Lake County and its communities will likely create additional demands on this corridor. Furthermore, the need to accommodate through regional trips in addition to local trips further emphasizes the need for a future six-lane arterial.

Through most of this segment right-of-way exceeds the desirable 150 feet required for implementation of the suburban SRA cross section. South of Old Elm Road to Clavey Road, right-of-way is restricted to 100 feet along most segments. Recognizing the need for establishing a continuous six-lane section, the plan must be sensitive to these areas of limited right-of-way. Therefore, special cross section treatment will be required in order to feasibly develop a continuous six-lane section with expressway type characteristics from Illinois 120 to I-94 (Edens Expressway).



- 6** Number of future through lanes (both directions of travel)
- Hexagon** Grade separations and/or interchange

PROPOSED SRA CORRIDOR CONCEPT U.S. 41

Intersection and Interchange Improvements

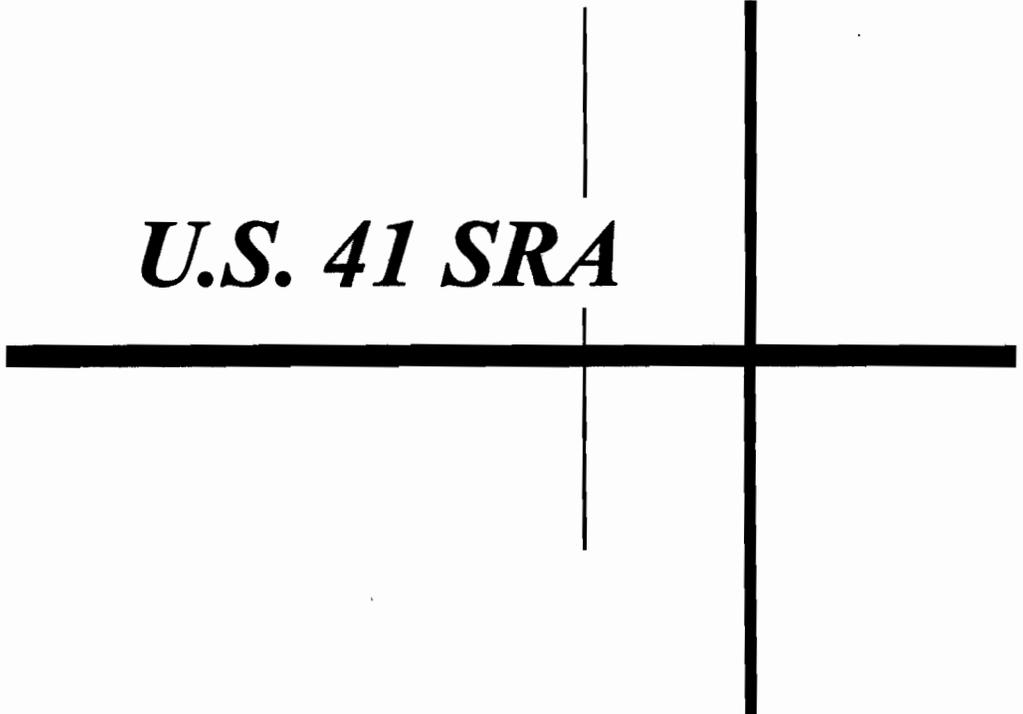
A more cost-effective and less disruptive strategy (in terms of overall effects) for SRA corridor improvements focuses on the major intersections. Maintaining reasonable average speeds and achieving peak period levels of service per SRA criteria will require capacity upgrading of most intersections along U.S. 41. Spot widening (which may require additional right-of-way) for double left-turn lanes and for right-turn lanes will be essential elements of the overall corridor concept, particularly at the intersections of U.S. 41 and crossing SRAs (see Exhibit 5).

At certain specific locations, new interchanges will be evaluated for feasibility and existing interchanges will be improved/upgraded. These locations include the existing interchanges at Deerpath Avenue, Deerfield Road, Clavey Road, and Lake-Cook Road. A new future interchange will be considered at Illinois 176. Other locations considered for interchanges, but rejected due to the lack of feasibility or other considerations, include Illinois 60 and Illinois 22.

Access Control

The frequency and spacing of full access points and the locations of signalized intersections are important considerations in operating the recommended SRA arterial. The U.S. 41 corridor concept calls for implementing a partially access-controlled facility. A barrier median is recommended along all of the corridor. The concrete barrier median enables strict and safe control over left-turn in/out movements, thereby optimizing the capacity of the six-lane section. Due to the relatively high operating speeds (greater than 45 miles per hour) along U.S. 41, the safe accommodation of right-turn in/out movements also is an important consideration. A key aspect of the proposed U.S. 41 plan is developing an access management plan that would include consolidating existing access points.

Recommended median treatments along the U.S. 41 corridor will be relatively consistent. A concrete "jersey-type" median barrier is recommended throughout the corridor. Full, 10-foot left shoulders are recommended where feasible. Maintaining a median of sufficient width to shelter left-turn movements is desirable throughout the corridor. Furthermore, all left-turn movements and cross median access will be accommodated only at signalized intersections or interchanges. The only exception is where median breaks are provided for emergency vehicle access.



U.S. 41 SRA

Chapter IV

**Recommended
U.S. 41 SRA Plan**



Chapter IV

Recommended U.S. 41 SRA Plan

This chapter describes in detail the recommended plan for the U.S. 41 SRA corridor. For clarity, the discussion has been divided into the three previously-defined segments noted in Chapter II (see page II-1). Specific geometric and/or operational recommendations, and unique features or special roadway designs are presented.

The plan is supplemented by an evaluation of the operational characteristics of the plan (i.e., level of service and operating speed under future traffic conditions). In addition, a planning-level opinion of potential construction and right-of-way acquisition costs is presented for each segment of the corridor. All costs are based on unit, generalized costs as furnished by the IDOT for SRA planning purposes.

Right-of-way costs are based on a general assessment of acreage required based on the proposed typical section, existing right-of-way, and current unit costs of right-of-way acquisition as furnished by the IDOT. In general, specific building acquisitions and/or damages are not identified. Actual right-of-way acquisition, damages, or both would be determined during Phase I studies.

Construction costs reflect the general magnitude of the proposed SRA relative to the existing roadway. Quantities were estimated on a per-mile basis, with provisions for major items such as new bridges, interchanges, and major intersection improvements.

The exhibits that accompany each segment discussion present the layout of the proposed roadway in relation to the existing roadway. The traveled way (i.e., edge of pavement to edge of pavement) is highlighted in the plan. Additional right-of-way required, lane arrangements at intersections, locations of proposed and existing signals, and proposed cross section also are shown.

Segment I——“North Chicago” **(Illinois 120 to Illinois 176)**

Segment I travels from Illinois 120 (SRA) south to south of Illinois 176, a distance of approximately 5.6 miles. Segment I is contained within Lake County and travels through Park City and North Chicago. The U.S. 41 proposed plan for Segment I is described below and depicted in Exhibits C-1 through C-3.

Cross Section and Geometric Characteristics

The recommended cross section reflects the rural characteristic of adjacent land use and the expressway-type characteristics of the existing facility. As shown in Exhibits C-1 through C-3, the U.S. 41 typical cross section would include six basic through lanes (three lanes in each direction of travel), a 30-foot median with concrete median barrier, and full 10-foot left and right shoulders with closed drainage in the median and open drainage along the outside. This cross section would extend south from Illinois 120 to just north of the EJ&E railway. At the northern end of this segment, the proposed six-lane cross section would transition and tie to the existing four-lane cross section at the Illinois 120 interchange. Northbound, the transition from three to two lanes would be accommodated at the Illinois 120 interchange by a two-lane exit. In the southbound direction, the third lane would be added by reconstructing the southbound entrance ramp to add the third lane. This typical cross section can be accommodated within 180 feet of right-of-way. This would require the acquisition of 10 feet of additional right-of-way along both sides of U.S. 41 from south of Casimir Pulaski Drive to north of the EJ&E railway.

From south of the EJ&E railway to south of Illinois 176 (utilizing the existing horizontal curve), the typical cross section narrows. A six-lane cross section would be maintained, but the median dimension would be reduced to 24 feet. Closed drainage would be developed within the median with open drainage along the outside. This typical section would require 170 feet of right-of-way. Utilizing the existing horizontal curve just north of Illinois 176, widening would shift or transition to the east side of U.S. 41. The alignment would be developed to minimize impacts to adjacent land use. Therefore, right-of-way acquisition would likely be greater along the east side of U.S. 41. It should be noted that depending upon the ultimate interchange/intersection configuration at Illinois 176, the median division, and the right-of-way requirements may vary slightly through

this segment of U.S. 41. South of Illinois 176, the U.S. 41 alignment would shift back to the west, maintaining the existing centerline and resulting in equal widening along both sides of U.S. 41.

The characteristics and design of the proposed cross section do not reflect all desirable suburban SRA cross-sectional criteria outlined in Table 11. The proposed cross section was developed in an effort to maintain the existing expressway-type characteristics (including open drainage) of the existing facility. Therefore, a higher type median design consisting of shoulders and a concrete median barrier was used. In addition, curb and gutter in association with closed drainage was not provided along the outside of all segments. Instead the existing ditches and the open drainage design were maintained where feasible. This provides the dual advantages of a safer roadside and lower cost design.

Other geometric improvements include the reconstruction of the Waveland Avenue intersection with U.S. 41. Currently, this intersection serves right-in/right-out movements to and from U.S. 41. The proximity of this intersection to the interchange at Illinois 120 creates a weaving section in the northbound direction. The proposed plan recommends that southbound Waveland Avenue be reconstructed to tie to the northbound exit ramp to Illinois 120. This would eliminate the weaving section along northbound U.S. 41 (see Exhibit C-1).

Other off-corridor geometric improvements include the development of additional access roads. South of Illinois 137 (along the west side of U.S. 41), the proposed plan recommends developing a north-south access road located roughly 1/4 mile west of U.S. 41. This access road would extend south from Illinois 137 to south of Brompton Avenue. The alignment of this roadway would depend upon the location of ADID wetlands and other known constraints. The exact location would be determined during subsequent studies. In conjunction with this north-south access road, the proposed plan recommends extending the existing east-west streets of Barry and Brompton Avenues from U.S. 41 west to the proposed north-south access road. Barry and Brompton Avenues would be restricted to right-in/right-out access only.

A new east-west access road is proposed about 1,200 feet south of Brompton Avenue. This access road would provide full access to U.S. 41 and tie to the proposed north-south access road to the west. Exhibit C-2 and C-3 show these proposed access roads.

Similarly, to the east of U.S. 41, in an effort to consolidate existing access points along U.S. 41, a north-south access road is recommended. This access road would run parallel to the C&NW railroad and would tie to the new proposed signal located east of Brompton Avenue. Access to existing and future land uses on the east side of U.S. 41 would be served off of this new roadway.

Along this segment of U.S. 41 there are six locations where potential transverse floodplain encroachment may be encountered. Five of these locations are reported between Illinois 120 and Illinois 137, and one is located midway between Illinois 137 and the EJ&E railway. Encroachments on the Department of Water Resources (DOWR) floodways do not exist along this segment. Additionally, there are no longitudinal encroachments of the Skokie River floodplain along this segment.

According to the Lake County Stormwater Management Commission (SMC), compensatory storage must be provided when fill materials are placed in floodplains that drain more than 100 acres. The potential transverse encroachments listed above would require compensatory storage under the SMC ordinance. Any widening in SMC floodplains would require compensatory storage for 120 percent of fill in these floodplains. Application of the SMC ordinance also may result in enlarged waterway openings for the above locations. Furthermore, numerous problems with pavement and floodplain-related flooding within this segment (discussed in Chapter II) indicate sensitivity of the proposed improvements to increased rates of discharge. Additional right-of-way above and beyond that required for the roadway improvements identified above may be required for compensatory storage. Determination of these needs would require a more detailed engineering study and would be evaluated in future Phase I studies.

Other drainage requirements may be necessary to protect existing wetlands along this segment. These include the following locations:

- There are five emergent wetlands west of U.S. 41 between Martin Luther King Drive and Illinois 137, three of which may be within the future southbound right-of-way line.
- There is one emergent wetland located south of Illinois 137 that may be encroached upon by future access roads.

- The intersection of the EJ&E railway and U.S. 41 is bounded by two forested wetlands to the east and one open water wetlands to the west.

In order to prevent the first flush of paved areas from directly discharging into wetlands, special treatment may be required. The wetlands noted above may require retention improvements to meet SMC requirements. If the Lake County SMC criterion is adhered to, then retention facilities would need to be built to hold the first 1/2 inch of run-off. Identification of the extent and location of such retention would be accomplished during Phase I studies.

Traffic Control, Operations, and Safety

Much of the land use in this segment of the corridor is evolving. Many zoned commercial, office, and industrial areas are open and have the potential develop. Therefore, it is essential that the SRA corridor plan for this segment establish a long-range framework that reinforces the operational and safety objectives of the SRA system. The keys to establishing this framework are the location of future signals and interchanges and the maintenance of median access control.

The diagrams along the top of each SRA plan exhibit indicate locations of existing and proposed signalized intersections, lane arrangements at these locations, and spacing to adjacent signals. The plan indicates the locations of median access breaks. Where a break is not shown, it is the intent of the plan that vehicles entering or exiting driveways or other existing and future access points be restricted to right-in and right-out movements only. The locations of grades separations also are depicted in this plan.

The traffic control plan for Segment I is depicted in Exhibits C-1 to C-3. The proposed plan calls for retention of existing signals at Amhurst Parkway, Martin Luther King Drive, and Illinois 137. Capacity improvements are recommended at all existing signals. The following summarizes proposed capacity improvements other than the additional through lane in each direction.

- At Martin Luther King Drive, dual left-turn lanes are recommended along all approaches. In addition to the dual left-turn lanes along Martin Luther King Drive, an additional through lane and a right-turn lane are recommended.

- At the SRA to SRA intersection of Illinois 137 and U.S. 41, the full suburban SRA intersection is recommended. This includes dual left-turn lanes and single right-turn lanes on all intersection approaches (see Exhibit D-1).

New or potential future signalized intersections are recommended at only one location. This new signal would be located approximately $\frac{3}{4}$ of a mile south of Illinois 137. The signal is intended to facilitate the safe and efficient movement of traffic to existing and future land uses south of Illinois 137. Furthermore, this signal would serve as a principal access point to future access roadways recommended east and west of the corridor in this area.

At Illinois 176 improvements to the interchange/intersection are recommended. Currently, access is provided to and from Illinois 176 by local roads that form an at-grade interchange. The revised interchange/intersection would be designed to minimize impacts to adjacent land uses while providing improved access and egress to/from Illinois 176. A number of alternatives are possible at this location. Appendix B identifies four potential alternatives, including advantages and disadvantages of each. The ultimate configuration of an interchange/intersection at this location will require additional engineering study and design. This will occur during subsequent phase I studies. It should also be noted that during alternative phase I studies for this interchange/intersection alternatives to accommodate the existing pedestrian/bicycle path across U.S. 41 would be determined.

Recognizing the long range travel demand along both U.S. 41 and Illinois 137, needs for capacity improvements beyond what is proposed in the intersection detail shown in Exhibit D-1 may be required. A “possible” post-2010 recommendation would include a grade separated interchange at Illinois 137 and U.S. 41. This interchange would likely be configured as a “diamond” type interchange with the ramp terminal intersections located along Illinois 137.

To verify the reasonableness of the recommended improvements, a planning-level capacity analysis was performed. Table 15 shows the results of that analysis for all future signalized intersections along U.S. 41. The analysis utilizes CATS year 2010 SRA forecast traffic volumes as a general reference. As noted in the table, assumptions were made for crossroad volumes. Other capacity analysis assumptions are detailed in Appendix A.

The capacity analysis indicates that the recommended plan should produce acceptable volume/capacity (v/c) ratios for all Segment I signalized intersections. This will translate into reasonable levels of service during peak periods. Calculated v/c ratios ranged from a low of 0.48 to a high of 0.92, with the highest v/c ratio of 0.92 calculated at the SRA to SRA intersection of U.S. 41 and Illinois 137. At this intersection, the relatively high v/c ratio is a function of the heavy forecasted traffic along Illinois 137 (see Table 15).

Table 15					
Evaluation of Signalized Intersection Operations Along Segment I (IL 120 to South of IL 176) of U.S. 41					
Intersection of Illinois 22 and:	Lane Arrangements ^b		Year 2010 ADT (vpd) ^c		v/c for Intersection ^d
	SRA	Crossroad	SRA	Crossroad	
Amhurst Parkway ^a	TTT-R LL-TTT	L-R	18,800	12,000	0.48
Martin Luther King Drive	LL-TTT-R	LL-TT-R	20,600	20,000	0.59
IL 137*	LL-TTT-R	LL-TTT-R	35,900	50,600	0.92
New Access Road ^a	L-TTT-R	L-T-R	35,900	5,000	0.60

Note: *Denotes SRA corridor.
^aAssumed for unavailable volumes: 20,000 vpd for major arterials, 12,000 vpd for minor arterials, and 5,000 vpd for local roadways.
^bL = Left-turn lane; T=through lane; R=right-turn lane; and TR=through and right-turn lane.
^cADT = Average Daily Traffic.
^dv/c = Volume to Capacity Ratio.

Public Transportation

As discussed in Chapter II, public transportation facilities do not operate in this segment. However, the Metra does operate the Metra/C&NW North Line located approximately 1 to 2 miles to the east of the corridor, with stations serving North Chicago, Great Lakes, and Lake Bluff. Metra is currently evaluating the Wadsworth extension as a new branch of this line. This extension would operate between the soon to be reopened Roundout Station (near Illinois 176) and Wadsworth. Other nearby stations that are proposed include Abbott Park at Martin Luther King Drive and Waukegan. This extension is proposed to operate parallel to U.S. 41, approximately 1.3 miles to the west.

As discussed in Chapter III, the EJ&E railway is being evaluated as a potential new commuter rail line. The EJ&E railway, which crosses U.S. 41 approximately 0.6 mile north of Illinois 176, has proposed stations at the following locations:

- Roundout (Milwaukee District/North Line at Illinois 176)
- Illinois 43 (Waukegan Road)
- U.S. 41
- Illinois 131 (Green Bay Road)

In addition to the proposed transit improvements, up-graded directional signing is recommended to all existing and future transit stations. Locations where directional guide signing is proposed include: northbound and southbound at the intersections with Illinois 120, Martin Luther King Drive, Illinois 137, and Illinois 176 for the Metra/Milwaukee North Line; and northbound and southbound at Illinois 176 for the Wadsworth Extension and the future EJ&E station.

The plan also identifies the locations of future park-n-ride facilities. These facilities should be equipped to accommodate busses, carpools, and vanpools. A uniform sign system should be established. Along this segment of U.S. 41, space should be reserved for future park-n-ride/kiss-n-ride facilities in the vicinity of the Illinois 120 interchange and the intersection with Illinois 137.

Currently, Pace bus routes, including any planned bus routes, do not operate along the corridor within this segment. However, as population and development increase, new bus routes may be warranted. In the event of future bus routes, the plan identifies the location of future bus stops, shelters, and turnouts. These locations are consistent with SRA rural and suburban and Pace guidelines.

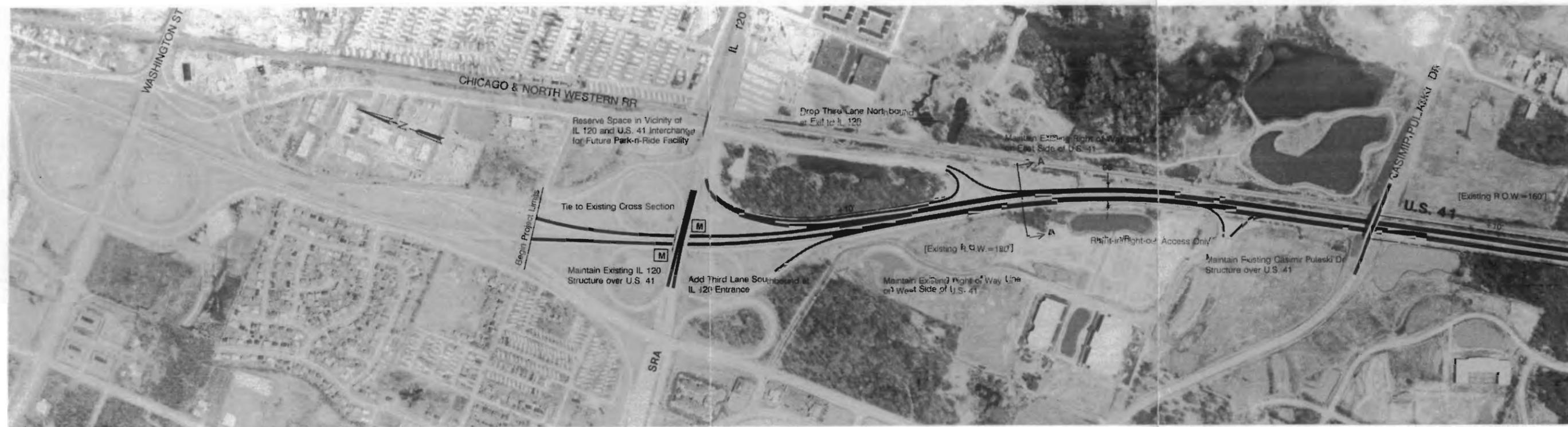
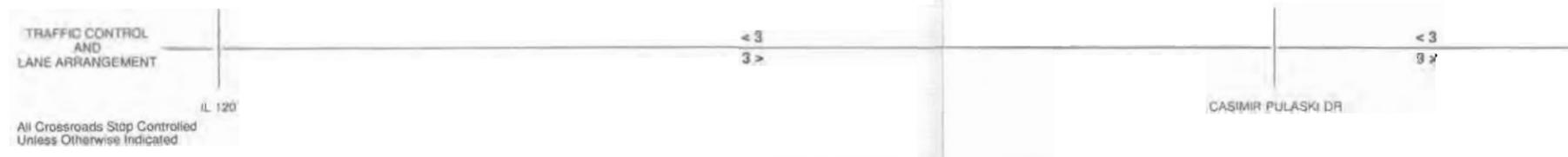
Construction and Right-of-Way Costs

The consultant's opinion of the total cost of the recommended plan for Segment I ranges between \$33.84 million and \$40.34, in 1991 dollars (see Table 16). This total includes roadway reconstruction costs, structural costs, and right-of-way acquisition costs. Structure costs include the reconstruction of the EJ&E railway structure and the Illinois 176 structures over U.S. 41. The roadway construction cost is estimated to be \$24.60 million, which includes improving U.S. 41 from a four-lane roadway to a continuous six-

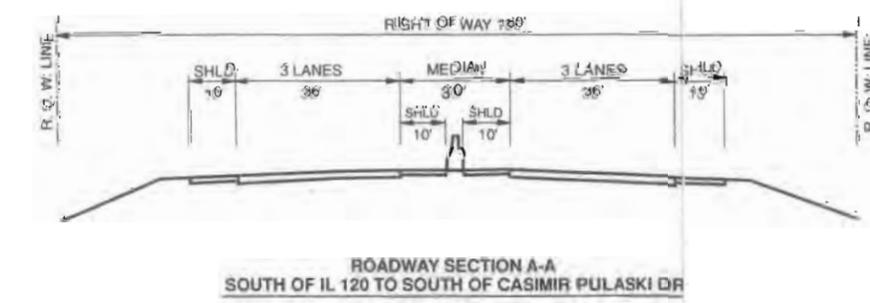
Table 16
Opinions of Construction and Right-of-Way Cost for
Segment I of U.S. 41 (1991 Dollars)

Roadway Reconstruction	\$24,600,00
Intersections/Interchanges (IL 137 [SRA], Access Road, IL 176)	7,100,000 to 13,600,000
Structures and Retaining Walls (EJ&E railway and Illinois 176)	1,000,000
Other	-0-
Subtotal	32,700,00 to 39,200,000
Right-of-Way	1,140,00
TOTAL	<u>\$33,840,000 to 40,340,000</u>

lane roadway with a variable median. Other construction costs include intersection improvements and/or signalization of intersections and new or modified interchanges. The right-of-way acquisition cost is based on the estimated costs of the various types of land uses that would need to be acquired. It is estimated that 16.4 acres of right-of-way will need to be acquired at a cost of \$1.14 million.



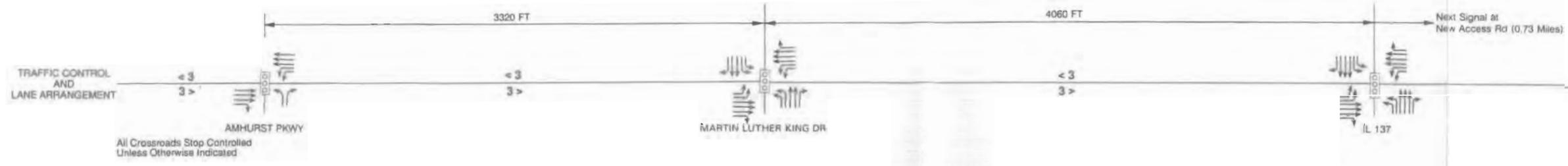
- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP (Recommended Bus Stops Include Bus Stops on Existing Routes and Future Routes)
 - INSTALL DIRECTIONAL SIGNS TO NEARBY METRA STATIONS



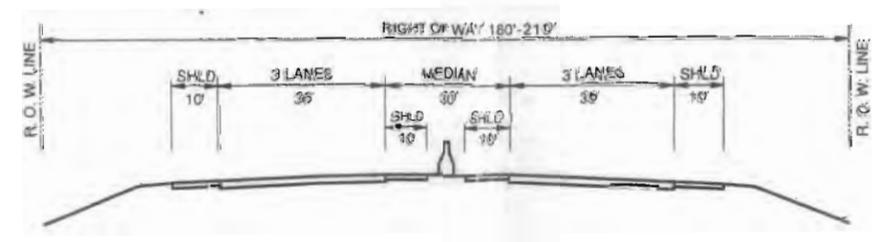
U.S. 41 – PROPOSED PLAN

Prepared by CH2M HILL in association with METRO Transportation Group and EJM Engineering
ILLINOIS DEPARTMENT OF TRANSPORTATION





- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP (Recommended Bus Stops include Bus Stops on Existing Routes and Future Routes)
 - INSTALL DIRECTIONAL SIGNS TO NEARBY METRA STATIONS

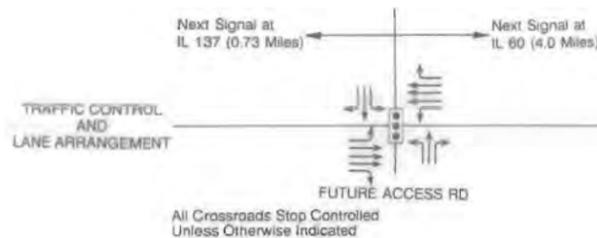


ROADWAY SECTION A-A
NORTH OF AMHURST PKWY TO SOUTH OF IL 137

U.S. 41 - PROPOSED PLAN

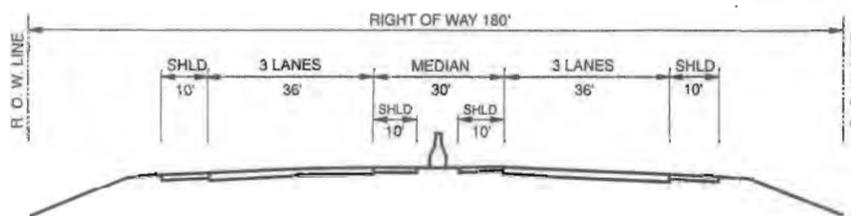
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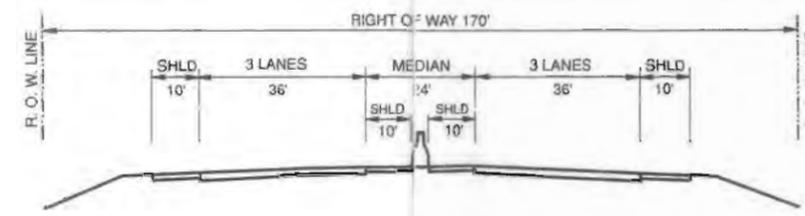


LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP (Recommended Bus Stops Include Bus Stops on Existing Routes and Future Routes)
- INSTALL DIRECTIONAL SIGNS TO NEARBY METRA STATIONS



ROADWAY SECTION A-A
NORTH OF ELGIN, JOLIET & EASTERN RAILWAY

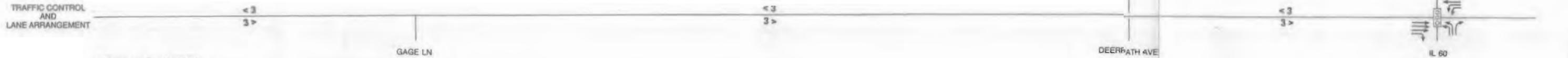


ROADWAY SECTION B-B
NORTH OF ELGIN, JOLIET & EASTERN RAILWAY TO SOUTH OF IL 176

U.S. 41 - PROPOSED PLAN

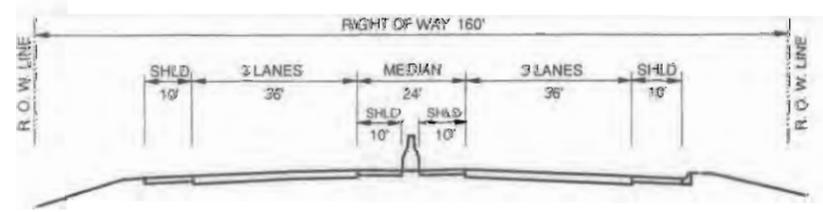
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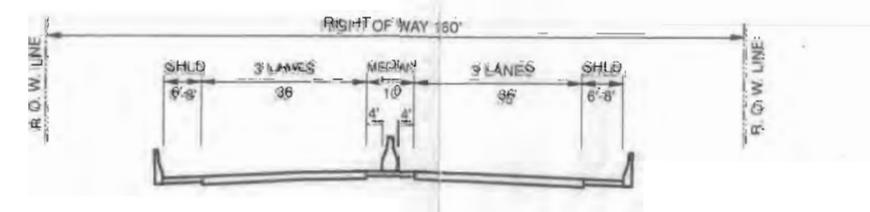


LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP (Recommended Bus Stops Include Bus Stops on Existing Routes and Future Routes)
- INSTALL DIRECTIONAL SIGNS TO NEARBY METRA STATIONS



ROADWAY SECTION A-A
NORTH OF GAGE LN TO NORTH OF DEERPETH AVE
SOUTH OF DEERPETH AVE TO SOUTH OF IL 60



ROADWAY SECTION B-B
NORTH OF DEERPETH AVE TO SOUTH OF DEERPETH AVE

U.S. 41 - PROPOSED PLAN

Prepared by CH2M HILL in association with
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ILLINOIS DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

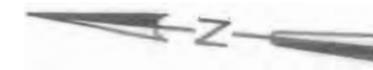
CHANNELIZATION DETAILS TO REFLECT IDOT DESIGN STANDARDS AND CRITERIA AT TIME OF FINAL PLAN PREPARATION.

LENGTHS OF LEFT AND RIGHT TURN LANES TO BE DETERMINED DURING DETAILED TRAFFIC STUDIES IN PHASE I PLANNING.

ALL DIMENSIONS ARE EDGE OF PAVEMENT TO EDGE OF PAVEMENT.

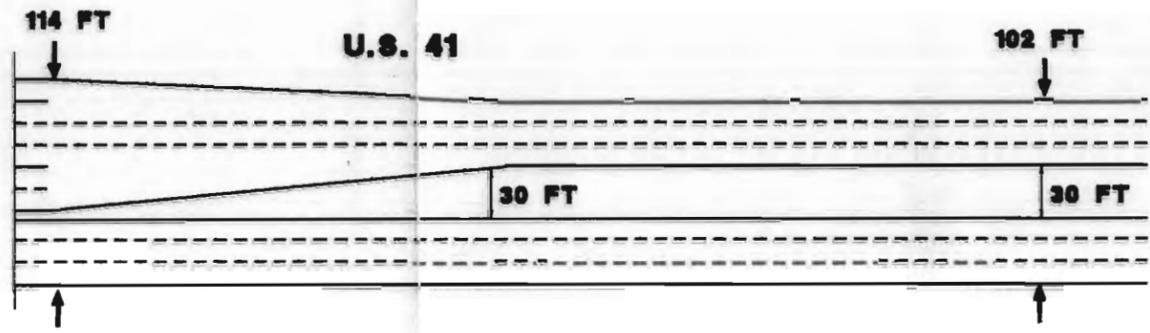
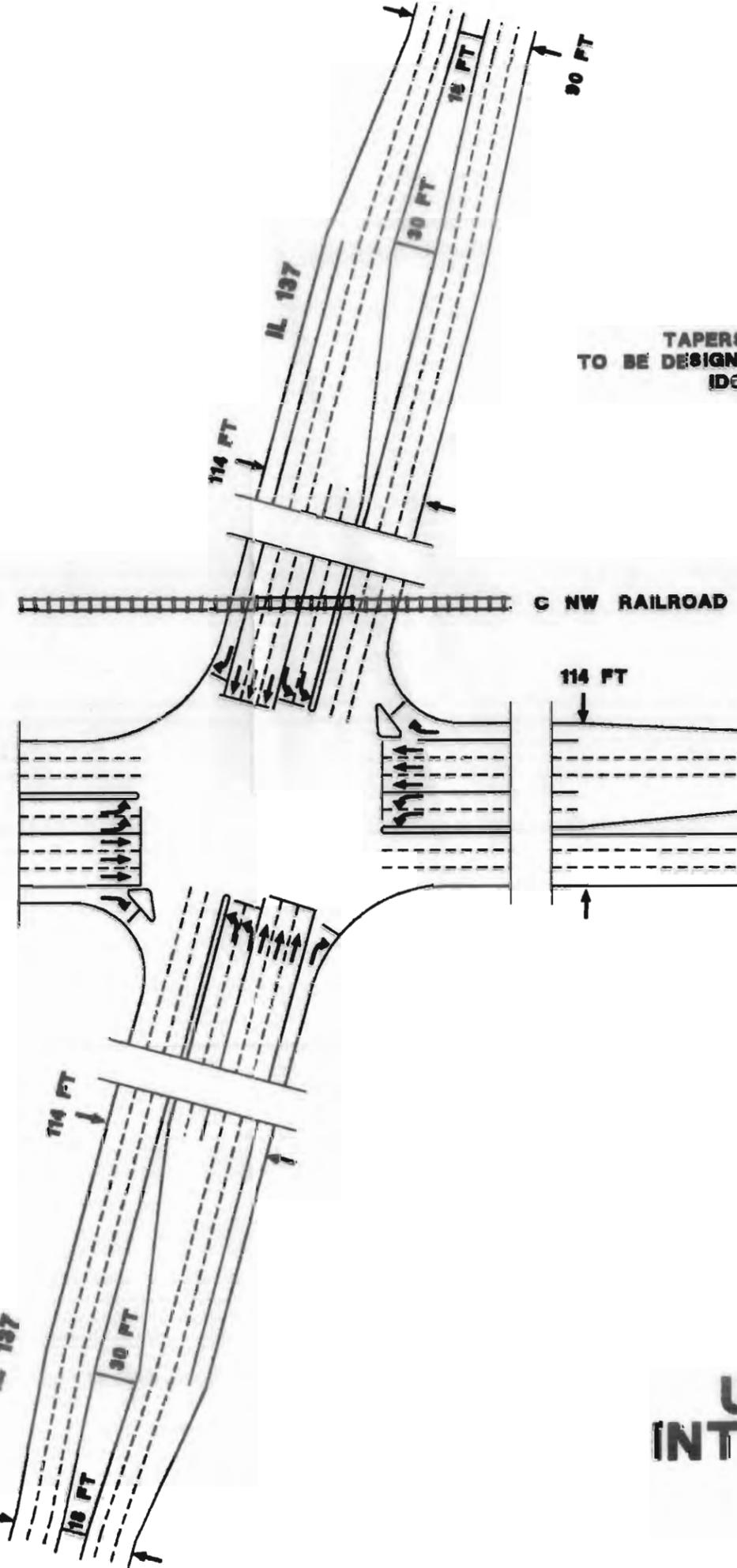
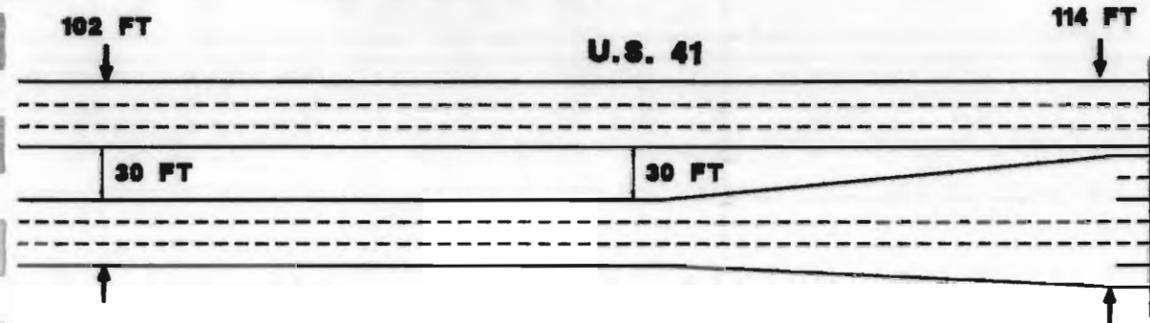
RIGHT OF WAY TO BE APPROXIMATELY 15' OUTSIDE FUTURE EDGES OF PAVEMENT. FINAL RIGHT-OF-WAY REQUIREMENTS TO BE DETERMINED IN PHASE I PLANNING.

FINAL INTERSECTION APPROACH AND DEPARTURE GEOMETRY TO REFLECT LOCATIONS AND CHANNELIZATION REQUIREMENTS OF ADJACENT MINOR INTERSECTIONS.



TAPERS NOT TO SCALE TO BE DESIGNED IN ACCORDANCE WITH IDOT STANDARDS

TAPERS NOT TO SCALE TO BE DESIGNED IN ACCORDANCE WITH IDOT STANDARDS



U.S. 41 AND IL137 INTERSECTION DETAIL



SCALE 1"=100'

Segment II——“Lake Forest”

(South of Illinois 176 to South of West Park Avenue)

Segment II of the U.S. 41 SRA is approximately 6.5 miles long, extending from south of Illinois 176 to south of West Park Avenue. Segment II travels through Lake Bluff, Lake Forest, and a portion of Highland Park. The proposed plan for Segment II is described below and depicted in Exhibits C-4 through C-6.

Cross Section and Geometric Characteristics

The proposed cross section along this segment of U.S. 41 reflects the existing expressway-type characteristics while attempting to minimize right-of-way impacts to adjacent land uses. As shown in Exhibits C-4 through C-6, the typical cross section would include three through lanes in each direction of travel with a variable width median.

South of Illinois 176, the proposed cross section would tie to the section described in Segment I. This cross section would include a 24-foot closed median protected by a concrete median barrier and full 10-foot inside shoulders. This cross section would extend south to the interchange at Deerpath Avenue. The treatment of the roadside design would consist of sections of open drainage with ditches provided and sections of closed drainage where curbs would be provided along the outside of the right shoulders. Along the southbound direction of travel, the closed drainage system would be implemented. This would negate the need for acquiring additional right-of-way. To minimize or lessen the need for stormwater detention/retention associated with runoff, an open drainage system is recommended along the northbound direction of travel. The plan recommends that ditches be provided between northbound U.S. 41 and the C&NW railroad tracks south from Illinois 176 to south of the Deerpath Avenue interchange.

Through the Deerpath Avenue interchange, the cross section would be narrowed. The median would be reduced to approximately 10 feet, resulting in minimal inside shoulder dimension. Similarly, the right shoulder would be reduced to a maximum of 8 feet. This cross section is recommended to minimize the right-of-way requirements necessary for widening U.S. 41 and the need for reconstructing the Deerpath Avenue interchange.

South of Deerpath Avenue to approximately Old Mill Road, the typical cross section would consist of three lanes in each direction of travel separated by a 24-foot median. The median design would consist of 10-foot left shoulders separated by a concrete median barrier. The design of the roadside would again be a combination of closed and open drainage systems. The closed drainage system would be implemented along the west side of U.S. 41 from Deerpath Avenue to south of Illinois 60, where it would then shift to the east side of the corridor. The open drainage system, consisting of open ditches, would extend along the east side of U.S. 41 south from Deerpath Avenue to Illinois 60, where it would then shift to the west side. The intent of this plan is to maintain open drainage between U.S. 41 and the C&NW railroad.

South from Old Mill Road to West Park Avenue, the 24-foot median design would be maintained. However, the number of lanes would vary. Three through lanes would be provided northbound, while four lanes would be developed in the southbound direction. Three of these lanes would be basic through lanes, while the fourth southbound lane would operate as a continuous right-turn lane (see Exhibit C-6). This continuous right-turn lane would provide a continuous acceleration/deceleration lane southbound for vehicles accessing existing and future land uses along the west side of the U.S. 41 corridor.

The characteristics and design of the proposed cross section do not reflect all desirable suburban SRA cross-sectional criteria outlined in Table 11. The proposed cross section was developed in an effort to maintain the existing expressway-type characteristics (including open drainage where possible) of the existing facility. Therefore, a higher type median design consisting of shoulders and a concrete median barrier was employed.

In most cases, widening of U.S. 41 would occur symmetrically about the existing centerline with U.S. 41 following the existing alignment. One exception would be between Illinois 60 and Westleigh Road. At this location, U.S. 41 would be realigned to improve the existing reverse curvature. The new alignment would improve the design speed of U.S. 41, providing a maximum horizontal curve of 4.5 degrees. The realignment would require the reconstruction of the C&NW railroad over U.S. 41. The realignment would also improve the sight distance along U.S. 41 as well as the intersection sight distance to the Illinois 60 intersection.

Other off-corridor geometric improvements recommended include the development of a future access road between Old Mill Road and south of West Park Avenue. This access

road would parallel U.S. 41 along the west side of the corridor. The plan locates this roadway behind existing commercial properties and between the C&NW railroad and the Commonwealth Edison utility line. This access road would be developed as part of a long-range plan to provide access to existing and future land uses. This roadway would serve as an alternative form of direct access from U.S. 41. Note that in association with this access road, roadways are shown at Parkside Drive and south of Illinois 22 to connect U.S. 41 to this potential future access road.

Along this segment of U.S. 41, there are four locations where potential transverse floodplain encroachment may be encountered. One of these locations is reported between Illinois 176 and Deerpath Avenue and the other three are located midway between Illinois 22 and West Park Avenue. Encroachments on the DOWR floodways do not exist along this segment. However, there is a 1.5-mile-long longitudinal encroachment of the Skokie River floodplain between Illinois 176 and Deerpath Avenue.

According to the Lake County SMC, compensatory storage must be provided when fill materials are placed in floodplains that drain more than 100 acres. The encroachments listed above would require compensatory storage under the SMC ordinance. Any widening in SMC floodplains would require compensatory storage for 120 percent of fill in these floodplains. Application of the SMC ordinance also may result in enlarged waterway openings for the above locations. Furthermore, numerous problems with pavement and floodplain-related flooding within this segment (discussed in Chapter II) indicate sensitivity of the proposed improvements to increased rates of discharge. Additional right-of-way above and beyond that required for the roadway improvements identified above may be required for compensatory storage. Determination of these needs would require a more detailed engineering study and would be evaluated in future Phase I studies.

Other drainage measures may be necessary to protect existing wetlands along this segment. This includes the following location:

- There are emergent and open water wetlands at the C&NW railroad crossing of U.S. 41.

In order to prevent the first flush of paved areas from directly discharging into wetlands, special treatment may be required. The wetlands noted above may require retention improvements to meet SMC requirements. If the Lake County SMC criterion is

adhered to, then retention facilities would need to be built to hold the first 1/2 inch of run-off.

Traffic Control, Operations, and Safety

The existing traffic control along this segment consists of grade separations and at-grade intersections. For the most part, the location of existing traffic signals and interchanges has already been established. It is essential that the SRA corridor plan for this segment develop a long-range framework that reinforces the operational and safety objectives of the SRA system. The keys to establishing this framework are the location of any additional signals and future interchanges and the maintenance of median access control.

The diagrams along the top of each SRA plan exhibit indicate locations of existing and proposed signalized intersections, lane arrangements at these locations, and spacing to adjacent signals. The plan indicates the locations of median access breaks. Where a break is not shown, it is the intent of the plan that vehicles entering or exiting driveways or other existing and future access points be restricted to right-in and right-out movements only. The locations of grades separations also are depicted in this plan.

The traffic control plan for Segment II is depicted in Exhibits C-4 through C-6. The proposed plan calls for retention of all existing signalized intersections. Capacity improvements are recommended at all existing signals. At the intersections of Illinois 60, Westleigh Road, and Old Elm Road, capacity improvements at the signals are limited to the additional through lane in each direction of travel. Exhibit D-2 provides an intersection detail of the U.S. 41 and Illinois 60 intersection.

At the SRA to SRA intersection of U.S. 41 and Illinois 22 the existing at-grade interchange would be replaced with a conventional at-grade intersection (see Exhibit D-3). The existing ramps from U.S. 41 to Illinois 22 would be removed. The proposed 24-foot median along U.S. 41 would be expanded to 30 feet to accommodate dual left-turn lanes. Single right-turn lanes would be provided along both approaches. Similarly, along the Illinois 22 approaches, dual left-turn lanes would be provided as well as right-turn lanes.

At West Park Avenue, the existing at-grade interchange also would be replaced by a conventional intersection. The proposed 24-foot median along U.S. 41 would be widened

to 30 feet to accommodate dual left-turn lanes from U.S. 41 to West Park Avenue. Right-turn lanes also would be provided. A dual left-turn lane should also be constructed westbound along the West Park Avenue approach.

New or potential future signalized intersections are recommended at only one location. This new signal located at Parkside Drive would be situated approximately $\frac{3}{4}$ mile south of Old Elm Road and $\frac{3}{4}$ north of Illinois 22. This signal is recommended to facilitate the safe and efficient movement of traffic to existing and future land uses associated with a future access road to the west of U.S. 41. The potential signal at Parkside Drive should be implemented *only* in conjunction with the future access road.

At Deerpath Avenue, the exiting compressed diamond would be reconstructed to accommodate the additional through lane along U.S. 41. Reconstruction of this interchange would require significant reconstruction of existing retaining walls located between U.S. 41 and the interchange ramps. Moreover, retaining walls located between the ramps and the C&NW railroad most likely would be required.

To verify the reasonableness of the recommended improvements, a planning-level capacity analysis was performed. Table 17 shows the results of that analysis for all future signalized intersections along U.S. 41. The analysis utilizes CATS year 2010 SRA forecast traffic volumes as a general reference. As noted in the table, assumptions were made for crossroad volumes. Other capacity analysis assumptions are detailed in Appendix A.

The capacity analysis indicates that the recommended plan should produce acceptable v/c ratios for most Segment II signalized intersections. This will translate into reasonable levels of service during peak periods. Calculated v/c ratios ranged from a low of 0.77 to a high of 1.10, with the highest v/c ratio of 1.10 calculated at the intersection of U.S. 41 and Old Elm Road. At this intersection, the relatively high v/c ratio is a function of the heavy forecasted traffic projected along Old Elm Road (see Table 17).

Table 17
Evaluation of Signalized Intersection Operations Along
Segment II (South of IL 176 to South of West Park Avenue) of U.S. 41

Intersection of Illinois 22 and:	Lane Arrangements ^b		Year 2010 ADT (vpd) ^c		v/c for Intersection ^d
	SRA	Crossroad	SRA	Crossroad	
Westleigh Road ^a	L-TTT-R	L-T-R	41,000	12,000	0.83
Old Elm Road	L-TTT-R	L-T-R	40,900	23,900	1.10
Parkside Dr. ^a	L-TTT-R	L-TR	43,200	5,000	0.77
IL 22	LL-TTT-R	LL-TT-R	45,400	22,300	0.87
West Park Avenue ^a	L-TTT-R	L-T-R	45,400	12,000	0.86

Note: ^aDenotes SRA corridor.
^aAssumed for unavailable volumes: 20,000 vpd for major arterials, 12,000 vpd for minor arterials, and 5,000 vpd for local roadways.
^bL = Left-turn lane; T=through lane; R=right-turn lane; and TR=through and right-turn lane.
^cADT = Average Daily Traffic.
^dv/c = Volume to Capacity Ratio.

Public Transportation

Additions or extensions of public rail facilities along this segment of U.S. 41 are not planned. Furthermore, plans for future public transportation facilities do not exist. However, the Metra does operate the Metra/C&NW North Line located approximately 1 to 2 miles to the east of the corridor, with stations serving Lake Forest, Fort Sheridan, and Highland Park.

Up-graded directional signing is recommended to all existing and future transit stations. Locations where directional guide signing is proposed include northbound and southbound at the intersections with Deerpath Avenue, Old Elm Road, and Illinois 22 for the Metra/C&NW North Line.

The plan also identifies the locations of future park-n-ride facilities. These facilities should be equipped to accommodate busses, carpools, and vanpools. A uniform sign system should be established. Along this segment of U.S. 41, space should be reserved

for future park-n-ride/kiss-n-ride facilities in the vicinity of the Illinois 60 interchange and the intersection with Illinois 22.

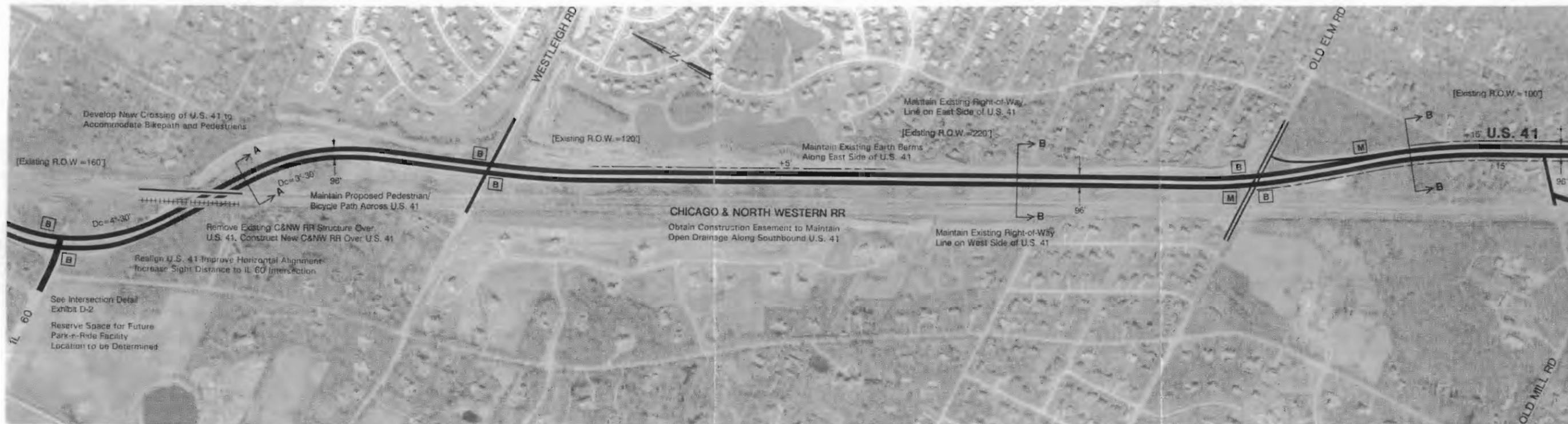
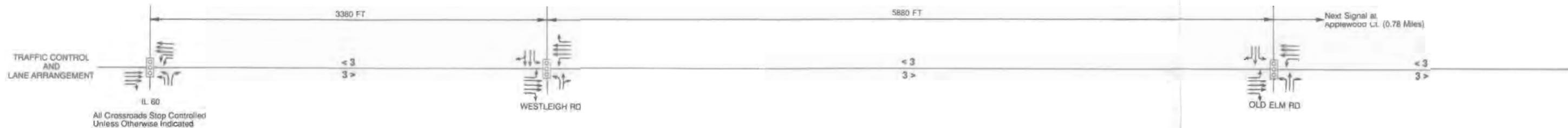
The plan has also identified locations to reserve space for bus stops shelters and bus turnouts for potential future routes. These locations should be designed consistent with SRA suburban and Pace guidelines, in the event that future development may warrant additional service.

Construction and Right-of-Way Costs

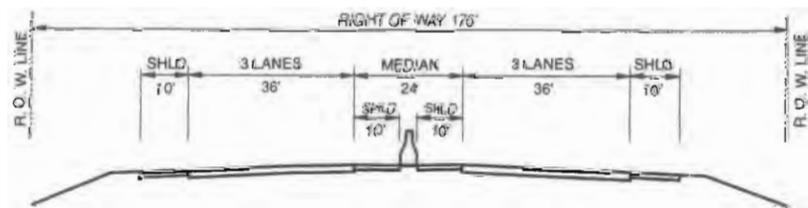
The consultant's opinion of the total cost of the recommended plan for Segment II is \$46.06 million, in 1991 dollars (see Table 18). This total includes construction costs and right-of-way acquisition. Structures and retaining wall that would need to be modified or reconstructed include Deerpath Avenue and the C&NW railroad. The roadway resurfacing/reconstruction cost is estimated to be \$32.22 million, which includes upgrading U.S. 41 from a four-lane to a six-lane facility. Other construction costs include intersection improvements and/or signalization of intersections. The right-of-way acquisition cost is based on the estimated costs of the various types of land uses that would need to be acquired. This segment of U.S. 12 requires the acquisition of approximately 14.5 acres of right-of-way at an estimated cost of \$2.29 million.

Table 18
Opinions of Construction and Right-of-Way Cost for
Segment II of U.S. 41 (1991 Dollars)

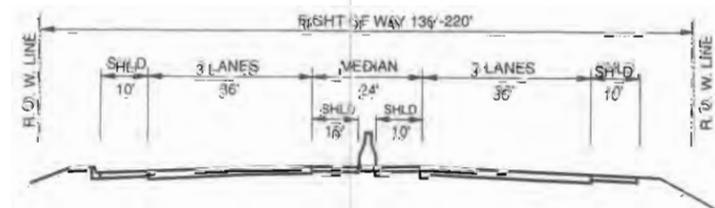
Roadway Reconstruction/Resurfacing	\$32,220,000
Intersections/Interchanges (IL 60 [SRA], Parkside Dr., IL 22 [SRA], Deerpath Ave.)	9,600,000
Structures and Retaining Walls (C&NW RR)	1,950,000
Other	-0-
Subtotal	43,770,000
Right-of-Way	2,290,000
TOTAL	<u>\$46,060,000</u>



- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP (Recommended Bus Stops Include Bus Stops on Existing Routes and Future Routes)
 - INSTALL DIRECTIONAL SIGNS TO NEARBY METRA STATIONS



ROADWAY SECTION A-A
SOUTH OF IL 60 TO NORTH OF WESTLEIGH RD

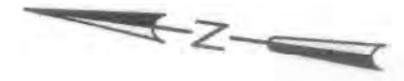


ROADWAY SECTION B-B
NORTH OF WESTLEIGH RD TO SOUTH OF OLD ELM RD

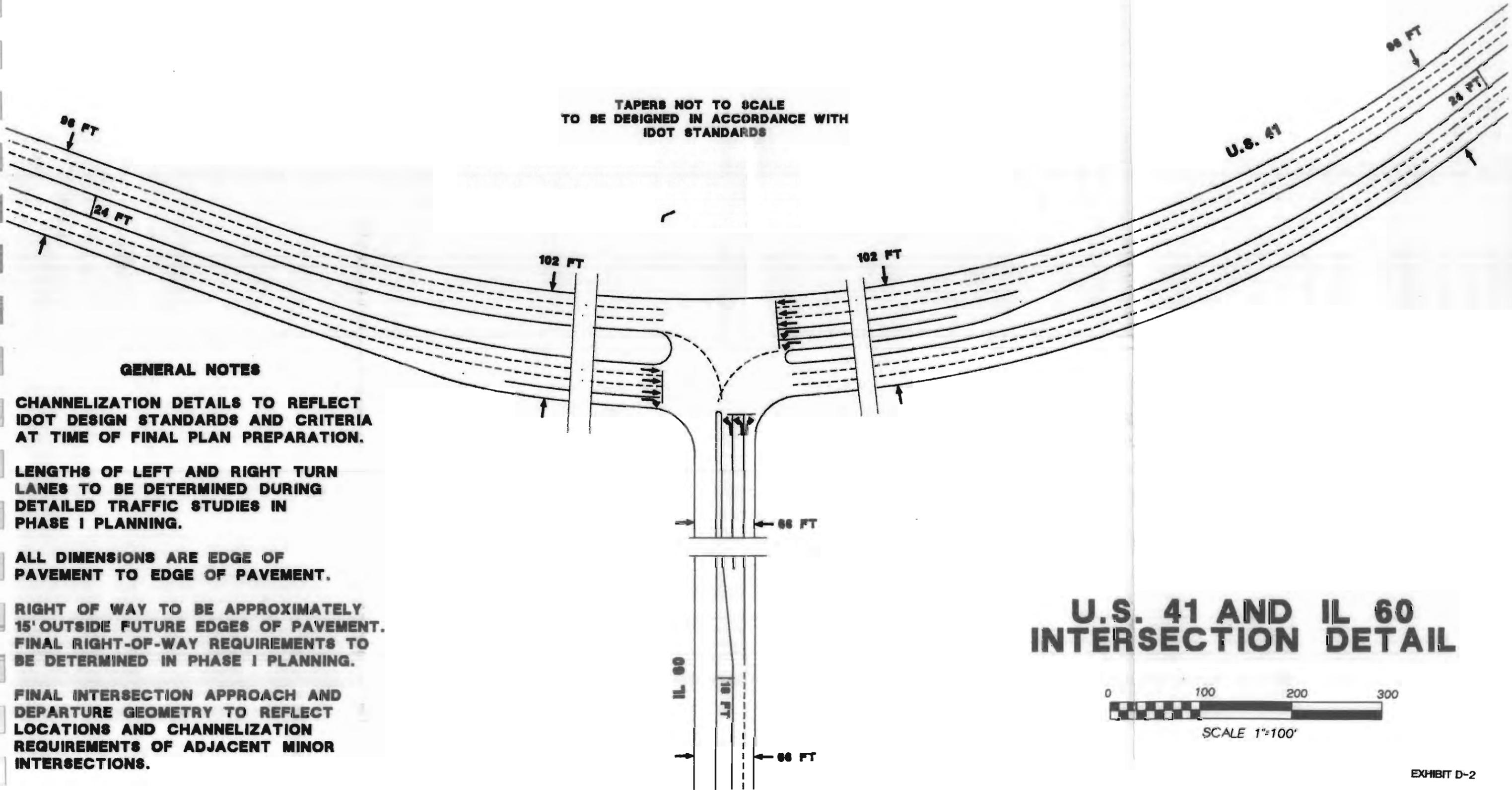
U.S. 41 - PROPOSED PLAN

Prepared by CH2M HILL in association with
METRO Transportation Group and EJM Engineering
ILLINOIS DEPARTMENT OF TRANSPORTATION





TAPERS NOT TO SCALE
TO BE DESIGNED IN ACCORDANCE WITH
IDOT STANDARDS



GENERAL NOTES

CHANNELIZATION DETAILS TO REFLECT IDOT DESIGN STANDARDS AND CRITERIA AT TIME OF FINAL PLAN PREPARATION.

LENGTHS OF LEFT AND RIGHT TURN LANES TO BE DETERMINED DURING DETAILED TRAFFIC STUDIES IN PHASE I PLANNING.

ALL DIMENSIONS ARE EDGE OF PAVEMENT TO EDGE OF PAVEMENT.

RIGHT OF WAY TO BE APPROXIMATELY 15' OUTSIDE FUTURE EDGES OF PAVEMENT. FINAL RIGHT-OF-WAY REQUIREMENTS TO BE DETERMINED IN PHASE I PLANNING.

FINAL INTERSECTION APPROACH AND DEPARTURE GEOMETRY TO REFLECT LOCATIONS AND CHANNELIZATION REQUIREMENTS OF ADJACENT MINOR INTERSECTIONS.

**U.S. 41 AND IL 60
INTERSECTION DETAIL**



SCALE 1"=100'

GENERAL NOTES

CHANNELIZATION DETAILS TO REFLECT IDOT DESIGN STANDARDS AND CRITERIA AT TIME OF FINAL PLAN PREPARATION.

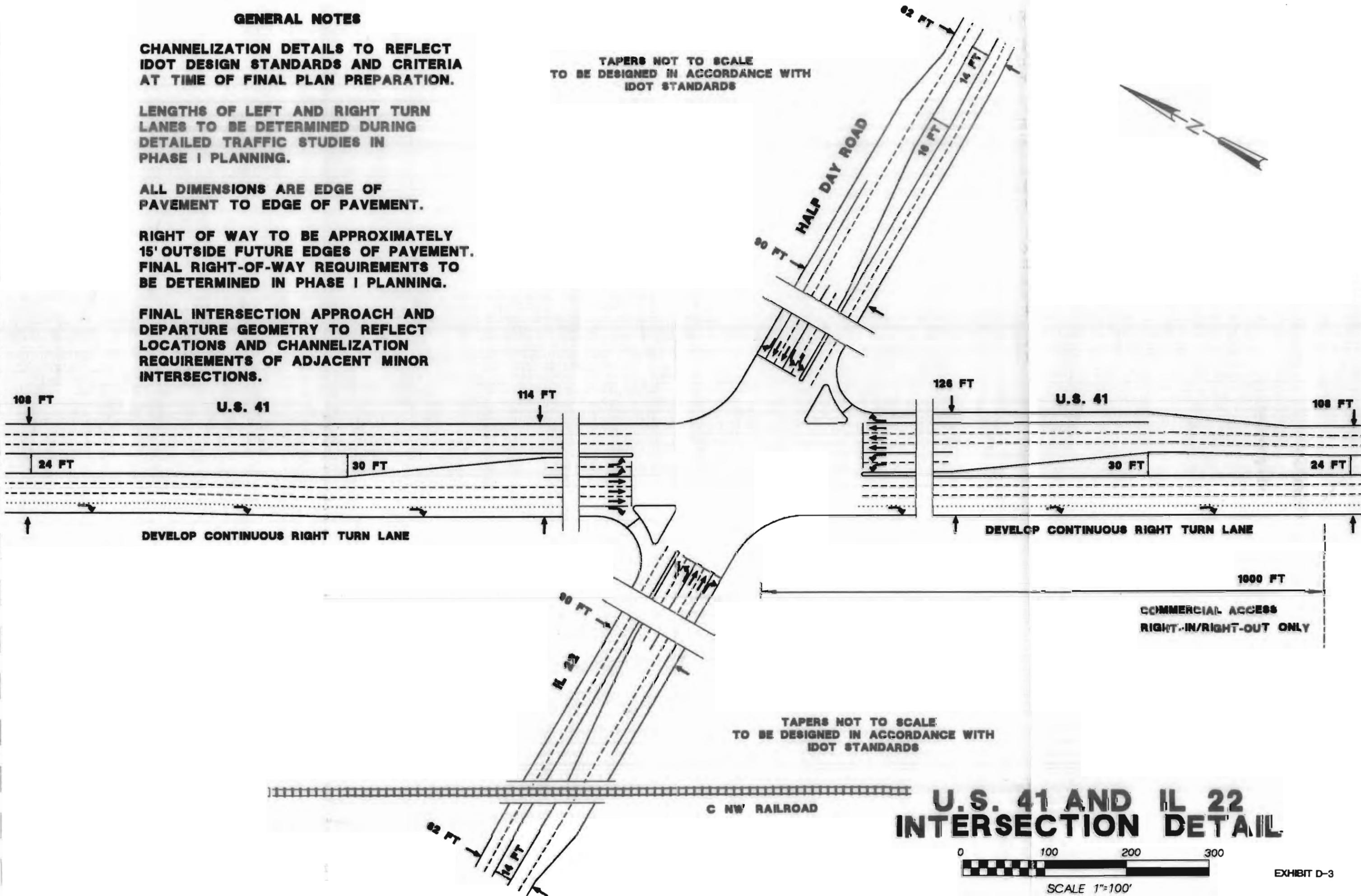
LENGTHS OF LEFT AND RIGHT TURN LANES TO BE DETERMINED DURING DETAILED TRAFFIC STUDIES IN PHASE I PLANNING.

ALL DIMENSIONS ARE EDGE OF PAVEMENT TO EDGE OF PAVEMENT.

RIGHT OF WAY TO BE APPROXIMATELY 15' OUTSIDE FUTURE EDGES OF PAVEMENT. FINAL RIGHT-OF-WAY REQUIREMENTS TO BE DETERMINED IN PHASE I PLANNING.

FINAL INTERSECTION APPROACH AND DEPARTURE GEOMETRY TO REFLECT LOCATIONS AND CHANNELIZATION REQUIREMENTS OF ADJACENT MINOR INTERSECTIONS.

TAPERS NOT TO SCALE TO BE DESIGNED IN ACCORDANCE WITH IDOT STANDARDS



DEVELOP CONTINUOUS RIGHT TURN LANE

DEVELOP CONTINUOUS RIGHT TURN LANE

1000 FT
COMMERCIAL ACCESS
RIGHT-IN/RIGHT-OUT ONLY

TAPERS NOT TO SCALE TO BE DESIGNED IN ACCORDANCE WITH IDOT STANDARDS

U.S. 41 AND IL 22 INTERSECTION DETAIL



SCALE 1"=100'

Segment III—“Highland Park” (South of West Park Avenue to I-94)

Segment III of the U.S. 41 SRA is approximately 3.9 miles long, extending south from West Park Avenue to the interchange with I-94 (Edens Expressway). This segment includes the southern portion of Highland Park and Northbrook. The proposed plan for Segment III is described below and depicted in Exhibits C-7 through C-8.

Cross Section and Geometric Characteristics

The recommended cross section reflects the high-speed expressway-type characteristics of the existing facility. The proposed typical cross section was developed in an effort to maintain the high-speed design while providing for an additional through lane in each direction of travel. The proposed typical cross section would include three basic lanes in each direction of travel along the entire segment.

South of West Park Avenue, the proposed cross section would tie to the typical section to the north described in Segment II. This cross section would include a 24-foot closed median protected by a concrete median barrier and full 10-foot inside shoulders. This cross section would extend south through the interchange at Deerfield Road. The treatment of the roadside design would vary. Where possible, open drainage would be maintained. In areas where right-of-way is particularly constrained, curb and gutter would be added along the outside of the shoulder and a closed drainage system could be implemented. U.S. 41 widening would occur symmetrically about the existing centerline. The existing right-of-way of 170 feet would be adequate for the proposed typical section.

South of Deerfield Road to north of Clavey Road, the six-lane cross section would narrow. The 24-foot median proposed to the north would be reduced to a 6- to 8-foot median and the left shoulders would be reduced to 2 feet. The roadside design would consist of right shoulders of 6 to 8 feet with a concrete “New Jersey” barrier located along the outside of the shoulder supplemented by a closed drainage system. This cross section was developed to avoid impacts to the Sunset Valley Golf Course abutting the east side of the corridor and the utility lines along the west side. The 6- to 8-foot median dimensions also accommodate the U.S. 41 six-lane cross section under Clavey Road without having to reconstruct the Clavey Road structure. This cross section would require 110 feet of right-of-way. All widening of U.S. 41 in this area would occur to the

west side, maintaining the existing northbound edge of pavement. This would result in the need to acquire an additional 10 feet of right-of-way from the west side of U.S. 41.

South of Clavey Road, the six-lane cross section would transition back to the existing centerline. The existing 19-foot median would be retained and the six-lane cross section to the north would tie to the existing six-lane cross section to the south. Because proposed change is not recommended to the existing cross section along this segment, additional right-of-way would not be required.

The characteristics and design of the proposed cross section do not reflect all desirable suburban SRA cross-sectional criteria outlined in Table 11. The proposed cross section was developed in an effort to maintain the existing expressway-type characteristics (including open drainage where possible) of the existing facility. Therefore, a higher type median design consisting of shoulders and a concrete median barrier was employed. In addition, outside shoulders and roadside protection would be designed and implemented along this segment.

Along this segment of U.S. 41, there are three locations where potential transverse floodplain encroachments may be encountered. These locations are reported between Berkeley Avenue and Clavey Road. Encroachments on the DOWR floodways do not exist along this segment. However, there is a 1,200-foot-long longitudinal encroachment of the Skokie River floodplain along the west side of U.S. 41 from the Deerfield Road interchange north along the southbound direction of travel.

According to the Lake County SMC, compensatory storage must be provided when fill materials are placed in floodplains that drain more than 100 acres. The encroachments listed above would require compensatory storage under the SMC ordinance. Any widening in SMC floodplains would require compensatory storage for 120 percent of fill in these floodplains. Application of the SMC ordinance also may result in enlarged waterway openings for the above locations. Furthermore, numerous problems with pavement and floodplain-related flooding within this segment (discussed in Chapter II) indicate sensitivity of the proposed improvements to increased rates of discharge. Additional right-of-way above and beyond that required for the roadway improvements identified above may be required for compensatory storage. Determination of these needs would require a more detailed engineering study and would be evaluated in future Phase I studies.

Traffic Control, Operations, and Safety

This segment of U.S. 41 is best characterized as fully access controlled with grade-separated interchanges, except at Chantilly Boulevard, where right-in/right-out access is provided with acceleration/deceleration lanes. The traffic control plan along this segment recommends maintaining the existing full access control. Therefore, new signals or at-grade access are not recommended along U.S. 41 south of West Park Avenue. In addition, the proposed plan recommends that new interchanges not be added to the corridor. This not only will retain the freeway-type characteristics of this facility, but also reinforce the operational and safety objectives of the SRA system by establishing a strict framework of access control.

The traffic control diagrams along the top of each SRA plan exhibit indicate locations of existing and proposed access. The plan indicates the locations of median access breaks. Where a break is not shown, it is the intent of the plan that vehicles entering or exiting driveways or other existing and future access points be restricted to right-in/right-out movements only (such as at Chantilly Boulevard).

As pointed out in the traffic control plan, no new signals are recommended in this segment. The plan also recommends the retention of all existing interchanges at Deerfield, Clavey, and Lake-Cook Roads, with modifications to the existing interchanges at Deerfield and Clavey Roads.

At Deerfield Road, the existing cloverleaf interchange should be replaced or modified. Interchange studies should be performed to determine the best interchange form at this location. At a minimum, the existing interchange would need to be reconstructed to accommodate the additional through lane in each direction of travel. Maintenance of access to local businesses on Old Skokie Valley Road also is essential. Possible interchange forms are documented in the interchange details shown in Exhibits D-4 through D-6. Each of the alternatives represents higher capacity and safer interchange solutions than the existing full cloverleaf design. When investigating and evaluating interchange alternatives at Deerfield Road, the appropriate location for a pedestrian crossing should be considered.

At Clavey Road, the existing interchange should be retained; however, modification of the existing interchange would be required to accommodate the proposed typical section. Ramp merge and diverge areas would be reconstructed.

The traffic control and geometric plan for Segment III should result in improvements to the safety, capacity, and traffic operations of U.S. 41, as well as ensure adequate capacity and operation under future traffic conditions. The long-range ADT would be accommodated at the desired level of service C operation during peak periods.

As mentioned above, signalized intersections do not exist along this segment. To verify the reasonableness of the recommended improvements, a mainline planning-level uninterrupted flow capacity analysis was performed along U.S. 41. The results of this analysis is discussed in the summary at the end of this chapter. The analysis utilizes CATS year 2010 SRA forecast traffic volumes as a general reference.

Public Transportation

Additions or extensions of public rail facilities along this segment of U.S. 41 are not planned. Metra does operate the Metra/C&NW North Line located approximately 1 to 2 miles to the east of the corridor, with stations serving Highland Park and Ravinia. Metra has proposed a new station for this line at Lake-Cook Road. The purpose of this station is to help relieve parking conditions in Northbrook and Deerfield. This station also would serve reverse commuters from Chicago and residents of northwestern Lake County to employment in the Lake-Cook Road office corridor.

A potential major project transit line discussed in Chapter III is the Middle Circumferential Corridor. This transit line would connect the west and north suburbs. This facility is proposed to cross U.S. 41 at approximately Lake-Cook Road.

Up-graded directional signing is recommended to all existing and future transit stations. Locations where directional guide signing is proposed include northbound and southbound at the interchanges with Deerfield Road for Metra/C&NM North Line stations at Deerfield and Highland Park, and at Lake-Cook Road for the Metra/C&NW North Line and the potential Middle Circumferential Corridor.

The plan also identifies the locations of future park-n-ride facilities. These facilities should be equipped to accommodate busses, carpools, and vanpools. A uniform sign system should be established. Along this segment of U.S. 41, space should be reserved for future park-n-ride/kiss-n-ride facility in the vicinity of the Lake-Cook Road interchange.

The plan also has identified locations to reserve space for bus stops shelters and bus turnouts for potential future routes. These locations should be designed consistent with SRA suburban and Pace guidelines, in the event that future development may warrant additional service.

Construction and Right-of-Way Costs

The consultant's opinion of the total cost of the recommended plan for Segment III is \$23.62 million, in 1991 dollars (see Table 19). This total includes construction costs, intersection improvements, reconstruction/construction of structures, and right-of-way acquisition. Modification or reconstruction of existing structures within this segment is not recommended. The roadway reconstruction cost is estimated to be \$10.0 million, which includes improving U.S. 41 from a four-lane roadway to a six-lane roadway north of Clavey Road, with a variable closed median and continuous median barrier. Other construction costs include the modification and/or reconstruction of interchanges at Deerfield and Clavey Roads. The right-of-way acquisition cost is based on the estimated cost of the various types of land uses that would need to be acquired. It is estimated that 1.0 acre of right-of-way will need to be acquired at a cost of \$120,000.

Table 19
Opinions of Construction and Right-of-Way Cost for
Segment III of U.S. 41 (1991 Dollars)

Roadway Reconstruction	\$10,000,000
Intersections/Interchanges (Deerfield Road, Clavey Road)	13,500,000
Structures and Retaining Walls	-0-
Other	-0-
Subtotal	23,500,000
Right-of-Way	120,000
TOTAL	<u>\$23,620,000</u>

TRAFFIC CONTROL AND LANE ARRANGEMENT

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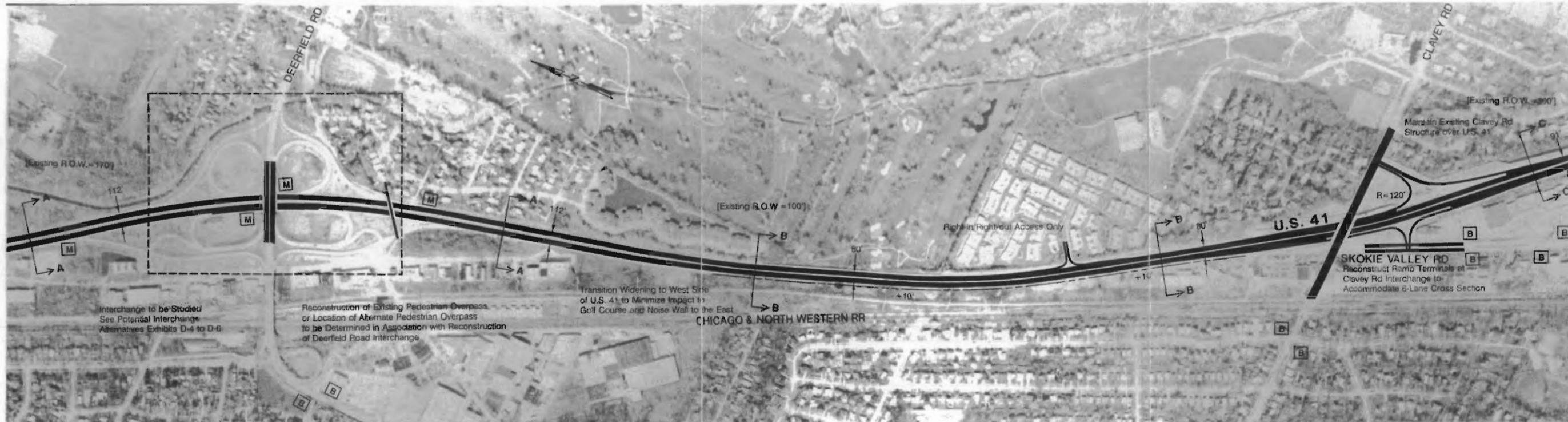
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All Crossroads Stop Controlled Unless Otherwise Indicated

DEERFIELD RD

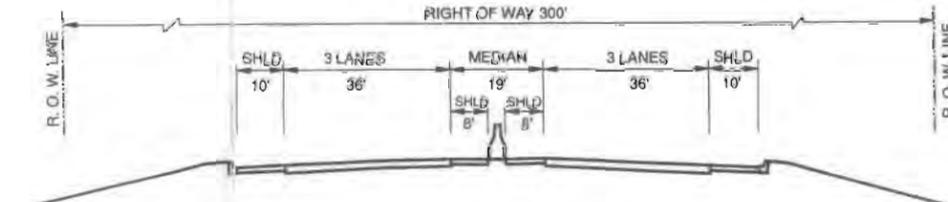
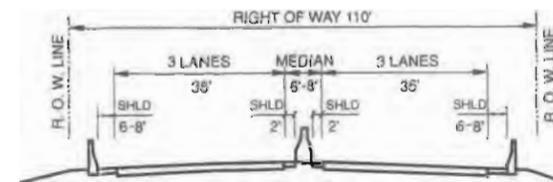
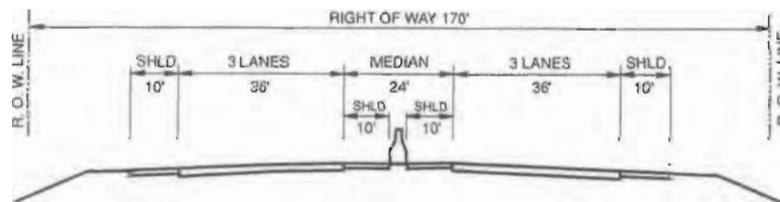
CHANTILLY BLVD

CLAVEY RD



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP (Recommended Bus Stops Include Bus Stops on Existing Routes and Future Routes)
-  INSTALL DIRECTIONAL SIGNS TO NEARBY METRA STATIONS



U.S. 41 - PROPOSED PLAN

Prepared by CH2M HILL in association with
METRO Transportation Group and **EJM Engineering**
ILLINOIS DEPARTMENT OF TRANSPORTATION

SRA Strategic Regional Arterial Planning Study
EXHIBIT C-7



TRAFFIC CONTROL AND LANE ARRANGEMENT



All Crossroads Stop Controlled Unless Otherwise Indicated

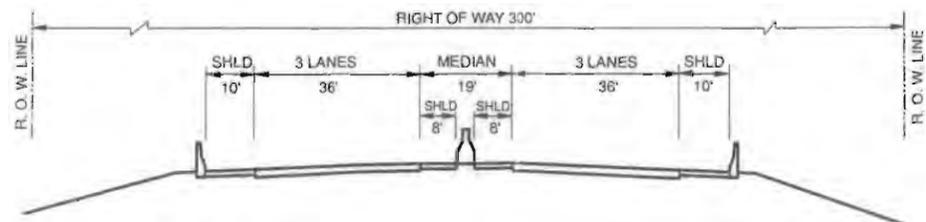
LAKE-COOK RD

I-94



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP (Recommended Bus Stops Include Bus Stops on Existing Routes and Future Routes)
- INSTALL DIRECTIONAL SIGNS TO NEARBY METRA STATIONS



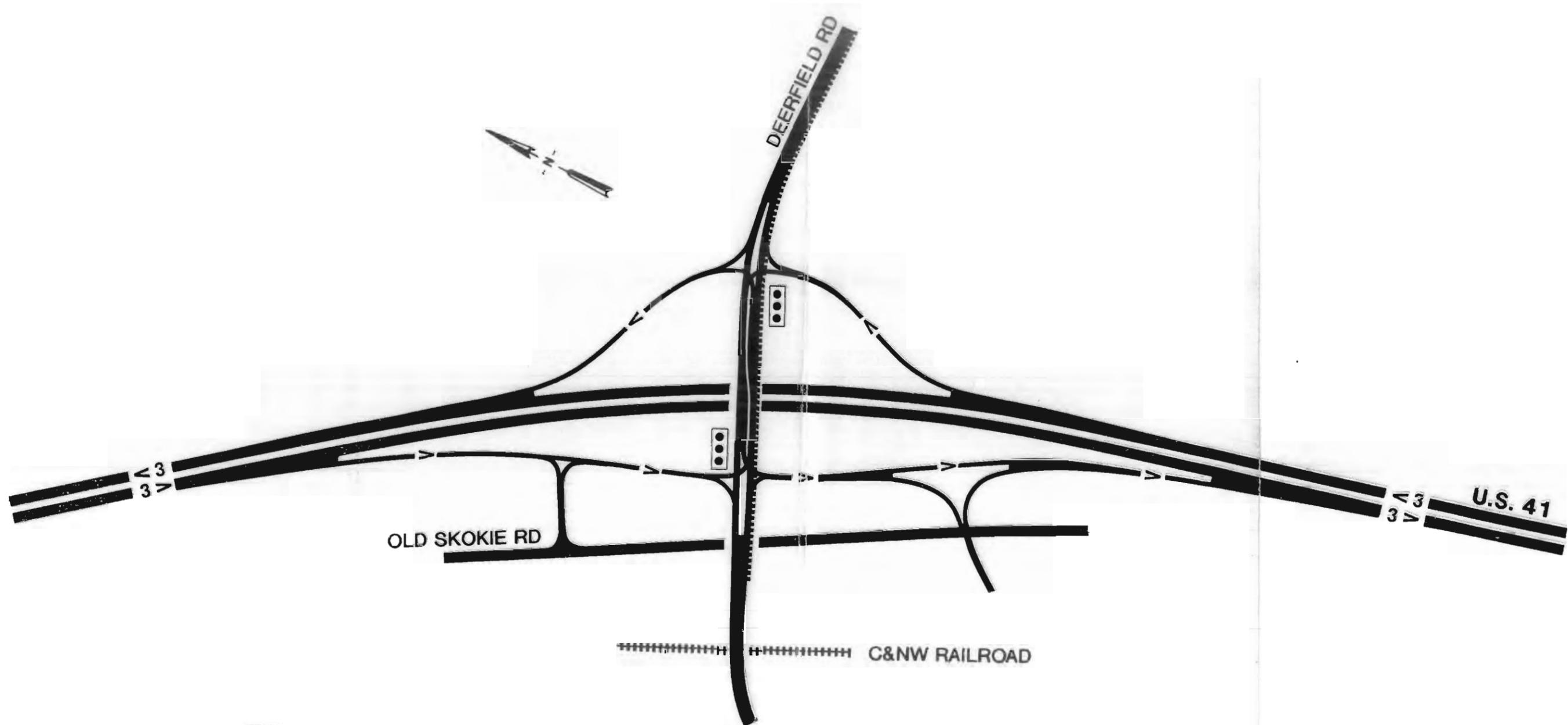
U.S. 41 - PROPOSED PLAN

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Scale: 0 200 400 feet

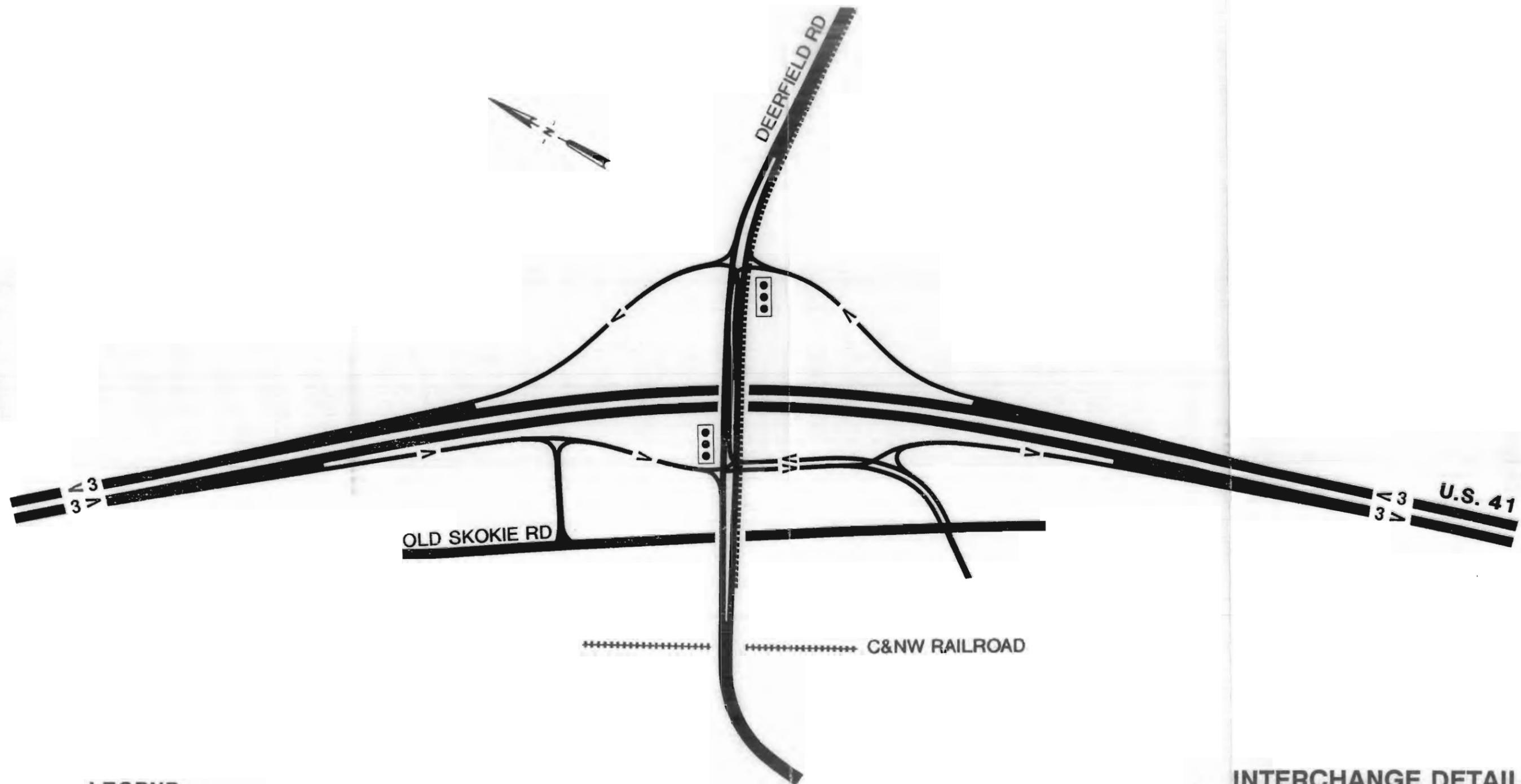


LEGEND

-  POTENTIAL SIGNAL
-  DIRECTION OF TRAVEL
- 3** NUMBER OF LANES
-  FUTURE PEDESTRIAN/BICYCLE PATH

**INTERCHANGE DETAIL
U.S. 41 AND DEERFIELD ROAD**

Scale:  0 200 400 feet



LEGEND

-  POTENTIAL SIGNAL
-  DIRECTION OF TRAVEL
- 3** NUMBER OF LANES
-  FUTURE PEDESTRIAN/BICYCLE PATH

**INTERCHANGE DETAIL
U.S. 41 AND DEERFIELD ROAD**





**INTERCHANGE DETAIL
U.S. 41 AND DEERFIELD ROAD**

LEGEND

-  POTENTIAL SIGNAL
-  DIRECTION OF TRAVEL
-  NUMBER OF LANES
-  FUTURE PEDESTRIAN/BICYCLE PATH

Scale:  0 200 400 feet

U.S. 41 Corridor Summary

This study addresses long-range transportation needs along the U.S 41 SRA. The following paragraphs summarize the expected operations and capacity of the U.S. 41 arterial under future conditions. The summary also includes an opinion of the costs to implement the plan as recommended. In addition, because of the significant investment required for implementing the recommended plan, the prioritization scheme discussed below was developed.

Operational Analysis of the U.S. 41 Corridor

An evaluation of traffic operations during high demand (peak) periods was performed for the entire corridor. Techniques, procedures, and assumptions consistent with the *1985 Highway Capacity Manual (HCM)*, published as Transportation Research Board Special Report 209, were used. The corridor was evaluated as a suburban, multi-lane highway for its entire length.

The year 2010 CATS SRA traffic forecast was used to develop theoretical peak period traffic volumes for analysis purposes. Assumptions were made for the general volumes of crossroad traffic and for patterns of turning movements.

Other assumptions for signalization (green time/cycle, cycle lengths, effects of progression) were made consistent with the intersection analyses. These assumptions are documented in Appendix A. All data requirements or assumptions were compatible with the SRA concept and guidelines in the *HCM*.

The quality of operation of U.S. 41 is a function of the character of the arterial (which affects the safe operating speed under free flow conditions), the number and spacing of signalized intersections, and the delay and level of service at those intersections.

Appendix A shows a planning-level operational analysis of each signalized intersection along U.S. 41. Table A-2 in Appendix A summarizes the operational assumptions that were used to generate the arterial analysis for each intersection and arterial segment.

Suburban Arterial Portion of U.S. 41

From Illinois 120 south to West Park Avenue, the traffic control along U.S. 41 consists of grade separations, interchanges, and at grade intersections. Table 20 summarizes the arterial analysis that was performed for this segment of U.S. 41. The year 2010 CATS forecast traffic can be accommodated at level of service C or better for the entire length. In general, the average forecasted travel speeds range from 26 to 34 mph.

The above results are not surprising given the level of traffic identified in the CATS travel forecast. Along many locations, travel forecasts are equal to or less than existing traffic. The forecast, however, does indicate that there is reserve capacity in the event that future traffic is higher than originally anticipated. Note that the future operation of key intersections will ultimately control the operation of U.S. 41 north of West Park Avenue.

Table 20
Summary of U.S. 41 Suburban Arterial Analysis

Segment	Segment Length (miles)	Number of Signalized Intersections	Free Flow Operating Speed (mph)	100% of CATS "2010" Forecast	
				Average Peak Period Speed (mph)	LOS ^a
Amhurst Parkway to 22nd Street	2.13	3	50	28	C
22nd Street to Illinois 60	2.53	2	50	34	B
Illinois 60 to West Park Avenue	3.39	4	50	26	C
Overall Average Arterial Speed (mph)				29	C

^aLOS = Level of service.

Full Access Control Portion of U.S. 41

South of West Park Avenue to I-94, U.S. 41 functions very similar to a fully access-controlled facility. As a result, this segment of U.S. 41 was analyzed as basic freeway segments. Analysis results documented in Table 21 indicate that the recommended plan would operate at level of service C with speeds equal to the posted speed limits, assuming year 2010 forecasts.

Along this segment of U.S. 41, the year 2010 traffic forecasts are substantially less than existing traffic. Therefore, capacity analyses assuming existing traffic demand were performed on the proposed plan and compared to future volumes. The results documented in Table 21, indicate that U.S. 41 would operate at level of service C with speeds of 60 mph, if traffic demand remained constant.

A sensitivity analysis also was performed to determine how much traffic growth over existing demand the proposed plan could accommodate at level of service C. The sensitivity analysis indicated that traffic could increase by 14 percent while still operating at level of service C.

Table 21
U.S. 41 Operational Analysis-Controlled Access Segments
(West Park Avenue to I-94 Interchange)

		Analysis of Recommended Plan with Year 2010 Forecast					Analysis of Recommended Plan with Existing Traffic				
From	To	Year 2010 CATS SRA Average Daily Traffic	Existing ADT (VPD)	Year 2010 Design Hour Volume ^a (Vph)	Existing Design Hour Volume ^b (Vph)	V/C ^c	Free Flow Speed (MPH)	Level of Service	V/C ^c	Free Flow Speed (MPH)	Level of Service
West Park Avenue	Deerfield Road	48,200	53,600	2,650	3,220	0.47	60	C	0.57	60	C
Deerfield road	Clavey Road	53,600	52,300	3,220	3,140	0.57	60	C	0.56	60	C
Clavey Road	Lake-Cook Road	45,800	53,200	2,520	3,190	0.45	60	C	0.57	60	C
Lake-Cook Road	I-94	NA	52,100	—	3,130	—	—	—	0.55	60	C

^aDesign Hour Volume = Year 2010 ADT x K x D
 Assumed Values: K = 0.10; D = 0.60

^bSource: 1988 Lake County ADT Map
 1990 Cook County ADT Map

^cV/C = Volume to Capacity Ratio
 Percent Trucks = 5 percent (Level Terrain)
 Peak Hour Factor = 0.90
 Maximum Service Flow Rate = 2,200 pcphpl
 Design Speed = 60 mph

Implementation Costs

A total investment in 1991 dollars of \$103.5 to \$110.0 million will be necessary to implement the recommended plan for U.S. 41. This opinion of cost, detailed in Table 22, includes approximately \$100.0 million in roadway, intersection/interchange, drainage detention, and structural improvements; and \$3.6 million in right-of-way acquisition. Because of the significant investment required for implementation, a prioritization scheme was developed. The total cost was divided into short-term, basic SRA plan, and post 2010 plan recommendations.

Table 22					
Opinions of Construction and Right-of-Way					
Costs for SRA Improvements Along U.S. 41 (1991 Dollars)					
Summary of Total Cost—All Segments					
	Short Term	Basic 2010 Plan	Recommended Post-2010^a	Possible^c Post 2010	Total^b
Roadway Reconstruction	-0-	62,870,000	3,950,000	-0-	66,820,000
Intersections/Interchanges	-0-	24,100,000	6,100,000	7,500,000	30,200,000 to 37,700,000
Structures and Retaining Walls	-0-	2,950,000	-0-	-0-	2,950,000
Other	-0-	-0-	-0-	-0-	-0-
Subtotal	-0-	89,920,000	10,050,000	7,500,000	99,970,000 to 106,470,000
Right-of-Way	-0-	3,550,000	-0-	-0-	3,550,000
Total	-0-	93,470,000	10,050,000	7,500,000	103,520,000 to 110,020,000
^a See items Listed on Table 23.					
^b The total column is the sum of the Short Term, Basic 2010 Plan, and Recommended Post-2010 columns.					
^c Possible post-2010 items include an interchange at Illinois 137.					

Project Prioritization

The \$103.5 to \$110.0 million implementation cost for U.S. 41 is substantial. The SRA plan will require construction over many years. Table 23 presents a suggested program of priority improvements, categorized by short-term, basic, and post-2010 recommendations.

**Table 23
U.S. 41 SRA Implementation Plan**

Exhibit No.	Description of Improvement	Priority of Improvements			Comment
		Short Term	Basic 2010 Plan	Post 2010	
Segment I: C-1	Implement recommended cross section Reconstruct Illinois 120 ramp terminals		•		
C-2	Implement recommended cross section Intersection capacity improvements at 22nd Street and at Illinois 137 Construct new interchange at Illinois 137 Construct access roads east and west of U.S. 41 Consolidate existing access		• • • •	•	May be pre-2010 Possible post-2010
C-3	Implement recommended cross section Construct access roads east and west of U.S. 41 Consolidate existing access Construct new interchange at Illinois 176		• • •		
Segment II: C-4	Implement recommended cross section Reconstruct Deerpath Avenue interchange Reconstruct Illinois 60 (SRA to SRA) intersection		• • •		
C-5	Implement recommended cross section Realign U.S 41 between Illinois 60 and Westleigh Road, reconstruct C&NW structure		• •		
C-6	Implement recommended cross section Extend Parkside Drive West, implement signalization and channelization Construct future access road parallel to U.S. 41 along west side of corridor Reconstruct Illinois 22 (SRA to SRA) intersection		•	• •	Contingent upon development, occurs as redevelopment takes place
Segment III: C-7	Implement recommended cross section Reconstruct Deerfield Road interchange Reconstruct Clavey Road ramp terminals to accommodate U.S. 41 widening		• • •		
C-8	Implement recommended cross section		•		

Short-Term Recommendations

Short-term recommendations are not proposed. Limited improvement may become warranted before the implementation of the basic SRA plan. These improvements include, but are not limited to, signalization improvements, intersection capacity improvements, advanced right-of-way purchase, and access management plans including the development of local access roads.

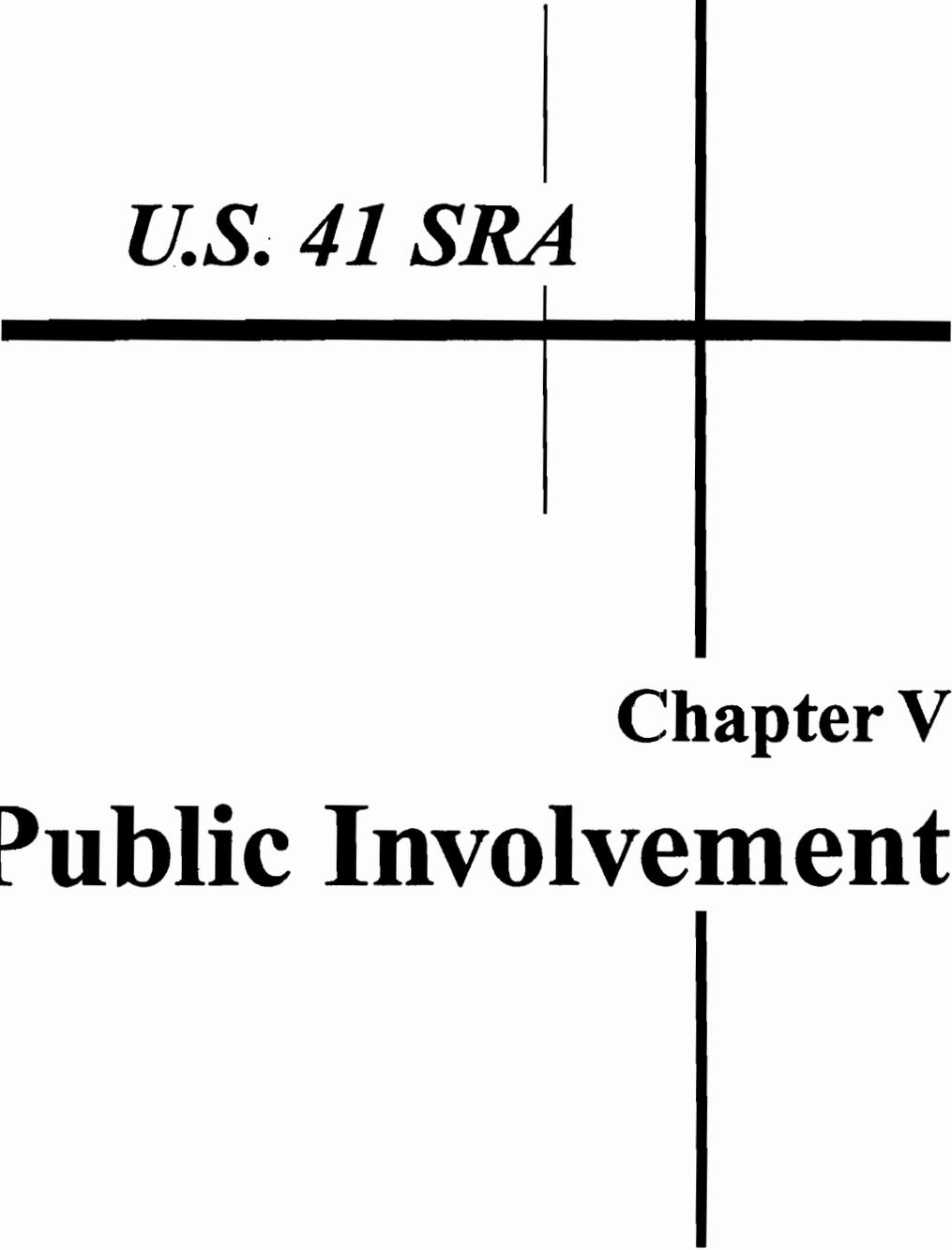
Basic SRA Plan Recommendations

Basic SRA plan recommendations represent those elements or projects to be constructed within the normal course of prioritization for any SRA project. These recommendations generally will include most plan elements not designated as short-term, with the only other notable exceptions specified as post-2010 recommendations. The total cost of the basic SRA plan is estimated to be \$93.5 million, in 1991 dollars.

Post-2010 Plan Recommendations

Post-2010 plan recommendations represent elements of the SRA plan that are considered lower priority for a number of reasons. They may include high-cost elements (such as new interchanges, river crossings, etc.) for which operational needs may not occur for many years. They also include plan elements that should await implementation of other improvements whose timing is unknown or long-term in nature. Furthermore, certain elements of the plan are tied to anticipated future development. These plan elements would include future access roads, frontage roads, and future signalized intersections. The proposed access road parallel to U.S. 41 between Old Mill Road and West Park Avenue has been identified as a post-2010 improvement. The implementation of this roadway is contingent not only on redevelopment of existing land use, but also on coordination with Commonwealth Edison and the C&NW railroad. Potential reconstruction/reconfiguration of the Deerfield Road interchange is also post-2010.

The “possible” post-2010 items (see Table 22) include a future interchange at Illinois 137. The total estimated construction cost would be in excess of \$7.5 million in 1991 dollars.



U.S. 41 SRA

Chapter V

Public Involvement

Chapter V

Public Involvement

The Public Involvement Process

The public involvement process includes three elements: the SRA Advisory Panel meetings, bimonthly newsletters, and a Public Hearing.

An Advisory Panel was established to assist and comment on the study of U.S. 41 from Illinois 120 south to the interchange with I-94. The panel included officials from Lake and Cook Counties as well as officials from Waukegan, Lake Bluff, Park City, North Chicago, Lake Forest, Highland Park, and Northbrook. Three Advisory Panel meetings were held at key junctures throughout the study. At the first Advisory Panel meeting on September 12, 1991, the existing conditions and concerns along the U.S. 41 corridor were presented. The second Advisory Panel meeting was held March 12, 1993. At this meeting, the overall long-range alternatives for U.S. 41 were discussed and written comments were requested. The third Advisory Panel meeting was held on November 8, 1993. At this meeting, the draft final report and the proposed U.S. 41 plan was reviewed with panel members.

In addition, bimonthly newsletters were published and distributed to panel coordinators, panel members, and local community officials. These newsletters were intended to update the local units of government on the study progress and issues.

Finally, a public hearing was held on December 1, 1993. The hearing was held prior to the publishing of this U.S. 41 SRA corridor final report to allow the public to comment on the recommended plan. Responses to a summary of written and verbal comments received at the Public Hearing and in the 30-day comment period are enclosed in this section.

Advisory Panel Meeting Minutes

SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 1
U.S. 41 Corridor, Cook and Lake Counties

LOCATION: Lake County Division of Transportation
Libertyville, Illinois

DATE: September 12, 1991

TIME: 1:30 p.m.

ATTENDEES: See Meeting Register (Attached)

PROJECT: CHI31495.01.A5

The SRA Advisory Panel Meeting for the U.S. 41 corridor in Cook and Lake Counties was attended by representatives of the Illinois Department of Transportation (IDOT), Chicago Area Transportation Study (CATS), CH2M HILL, and the Study Advisory Panel Members on September 12, 1991. Attendees are listed on the attached Meeting Register and were given handouts describing limits of the U.S. 41 corridor, involved communities and panel membership, schedule of subsequent panel meetings and public hearings, SRA planning objectives, typical proposed cross section, planning focus areas, and SRA alternatives development. Results and specific items discussed are outlined as follows:

1. Eugene Ryan (CATS) opened the meeting with an introduction of the CATS year 2010 transportation plan and emphasized a) the major expressway and transit systems would not be able to carry the 2010 travel forecast demand, hence, the SRA system was developed to assist in serving the higher-volume/longer-haul trip corridor; b) the SRA corridors are existing roads serving local needs, and therefore, the SRA system must serve a dual role—serving high-volume/long-haul trips and local needs; and c) the current study is a part of the 5-year program helping to make decisions about ultimate configurations of the SRA corridors, and that the study serves as a framework within which planning of specific improvements should take place and will not result in immediate construction. The study serves to let the communities know about the long range plan.
2. Les Swieca (IDOT) provided the introduction to the SRA study and said that IDOT has not done extensive long-range planning prior to the SRA study and most plannings have been within the 5-year program. He added that the long-range planning study has a time frame of 30 to 50 years and that IDOT intends to protect right-of-way on the basis of this study.

MEETING MINUTES

Page 2

September 12, 1991

CHI31495.01.A5

3. Tim Neuman (CH2M HILL) provided an overview of the SRA study process and SRA design concept.
4. Mike Lee (CH2M HILL) presented "Planning Focus Areas" in the U.S. 41 corridor.
5. Tim Neuman (CH2M HILL) ended the presentation by outlining "Strategic Regional Arterial Alternatives Development" and asking for questions and comments.

The Advisory Panel Members and attendees had these questions and comments:

1. The Honorable Bobby E. Thompson (Mayor, City of North Chicago) asked about the time frame for the improvements and project costs. Les Swieca's response: The SRA study is a long range pre-Phase 1 plan with no specific implementation date. The cost of the proposed improvements is large and exact cost is unknown at this time. Gross cost estimates are part of the ongoing studies. Mayor Thompson then expressed a concern about redoing recently-completed work at Clavey Road. Les Swieca's response: There is no intention of redoing the work at Clavey Road.
2. Mr. Joe Vanderwerff (Ciorba Group, a consultant for the City of North Chicago) expressed a concern about IDOT tying up 160 acres of land south of the Ill. 137 intersection with U.S. 41. Les Swieca's response: The land was purchased many years ago in anticipation of realigning U.S. 41 westward away from Chicago & North Western Railroad and providing an at-grade separation at Ill. 137 and U.S. 41. Mr. Swieca also said that IDOT is currently doing a Phase 1 study to develop the relocation of U.S. 41. Tim Neuman emphasized the use of the SRA study to reserve right-of-way for future improvements.
3. Mr. Joe Vanderwerff also expressed a concern about two current development plans that may infringe on potentially "available" right-of-way in the City of North Chicago. He mentioned a retention pond within 15 feet of right-of-way and said that it may be too late to protect right-of-way. Tim Neuman's comment: There is always ongoing activity; however, a SRA-type of study has to start sometime. Ongoing activities must be treated as an existing condition and urged members that CH2M HILL be made aware of any ongoing plans or activities. Les Swieca's response: The IDOT permit section has been aware of the SRA standards since January 1, 1991. Often

MEETING MINUTES

Page 3

September 12, 1991

CHI31495.01.A5

developers get all of the local approvals and only then they consult with IDOT—IDOT should be consulted from the start. Mr. Vanderwerff's follow-up comment: The City of North Chicago is opposed to the realignment of U.S. 41 and hoped the developer had not precluded ultimate widening and use of the existing roadway alignment. The City would be willing to work toward a frontage system along existing U.S. 41 if the state would drop the realignment plans.

4. Mr. Jeff Meyer (City of North Chicago) asked if issues other than transportation such as social and economic effects are being considered in the SRA study. Tim Neuman's response: No issues are being studied in detail sufficient for an Environmental Assessment (EA) or Environmental Impact Statement (EIS). CH2M HILL is in charge of noting the issues for future Phase 1 detailed study. Les Swieca's response: The City of North Chicago is encouraged to express their feelings about this study through the panel members but they should talk directly to IDOT Project Studies about their current concerns and about ongoing Phase I activities.
5. Question: Has funding been programmed for the Phase 1 realignment study? Les Swieca's response: Approximately \$200,000 next year and \$500,000 the year after has been programmed for the purchase of right-of-way in the area north of 22nd Street and south of the Elgin, Joliet & Eastern Railway.
6. Question: Did we say that we had enough right-of-way to add a third lane? Tim Neuman's answer: This is true—according to SRA typical cross section requirements—in sections where the existing right-of-way is 160 feet or greater. But 160 feet is not available in all sections of the corridor.
7. Question: Isn't the U.S. 41 corridor close to meeting the SRA standards already? Tim Neuman's response: The right-of-way constraints for the U.S. 41 corridor are less severe than those for some other SRA corridors, but issues such as access control and widening at various intersections are still areas of concerns.
8. Mr. Jerry Soderquist (City of Lake Forest) asked if there has been an analysis of long-distance users vs. local-trip users. Tim Neuman's response: No specific data is available but the panel members are encouraged to share their information or feelings. Much of the U.S. 41 corridor traffic seems to be long distance, and therefore, the concept of SRA is more compatible to the U.S. 41 corridor than perhaps to other corridors. Mr. Soderquist's

MEETING MINUTES

Page 4

September 12, 1991

CHI31495.01.A5

comment: Maybe trips were such that the U.S. 41 corridor should be dedicated to long-distance trips and other planning should be done to accommodate local trips. Tim Neuman's response: If that is true, maybe we should go ahead and do the SRA concept thinking about how to handle local trips.

9. Question: Why doesn't the U.S. 41 corridor extend to the north junction with I-94 near the Wisconsin border? Eugene Ryan's response: The trip density north of Ill. 120 does not warrant the extension.

Tim Neuman closed the meeting by thanking the panel members.

After the meeting it was requested that Jeff Meyer, Director of Community Development and Planning, 1850 Lewis Avenue, North Chicago, Illinois, 60064, be added to the newsletter list. It was also requested that the panel members examine the exhibits in the handout and return any corrections, additions, or deletions of names, places, special land uses, and other items pertaining to the SRA study to CH2M HILL.

CHI198/033.51

SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 2
U.S. 41—Lake County
Corridor Limits: I-94 to IL 120

LOCATION: Lake County Division of Highways—Libertyville

DATE: March 12, 1993

TIME: 10:00 AM

ATTENDANCE: See Attached Roster

PROJECT: CHI31495.01.A5

Tim Neuman (CH2M HILL) opened the meeting and explained the reason for the delay of the U.S. 41 SRA study. Tim explained that the project was temporarily on hold for various reasons. Part of the delay was a result of studying the feasibility of converting U.S. 41 into a fully access controlled facility (freeway type facility). Other delays were caused by waiting for the outcome of various development plans along the U.S. 41. Tim then asked the panel to introduce themselves. Tim then made an appeal to the panel members for any new information (i.e., new development proposals, roadway improvements, land use plans, etc.) that their communities may have or may have occurred in the last year and a half. Tim briefly summarized the content of the first panel meeting, and indicated that the minutes from the first meeting were included in the handout for this meeting. Tim also summarized the purpose and objectives of this meeting:

- The discussion of U.S. 12 from a regional perspective and a long range plan,
- A review of the existing conditions,
- A review of the "Planning Framework," including a discussion of the desirable SRA cross section for this corridor, and
- The discussion of basic system design decisions including:
 - the basic number of through lanes
 - interchange/intersection consideration

Tim added that the third panel meeting would show more detailed plans, based in part on the discussion today. Tim then introduced Dick Stafford (CH2M HILL) to describing the two of the three exhibits to be presented. The first exhibit presented was a summary of the "Existing Conditions" along the corridor. The presentation included a description of the typical cross sections, areas of limited right-of-way, multiple access areas and other operational and safety issues that exist along the corridor.

MEETING MINUTES

Page 2

March 15, 1993

CHI31495.01.A5

Next an overview of the "Planning Framework" exhibit was discussed. The presentation included a discussion of the desirable SRA cross section and how it relates to U.S. 41. In addition, a brief overview of the future land use adjacent to U.S. 41 was discussed. Areas where future land use was expected to intensify or change were noted. Known environmentally sensitive areas were also pointed out.

Tim Neuman continued the presentation with a general description of the "Alternatives Being Considered" exhibit. Tim began by describing alternative recommendations along U.S. 41, proceeding from north to south. The presentation included discussion of the recommended typical cross sections including median treatments, locations where grade separations will be considered, potential locations for future signals, locations where access consolidation and access management schemes will be looked at, etc. Tim stressed the importance of developing a 6-lane cross section. He also pointed out the importance of developing an appropriate plan for existing signals and interchanges along the corridor.

Tim summarized the alternatives being considered for U.S. 41:

- U.S. 41 would be developed to a 6-lane cross section
- Open drainage would be maintained where possible
- New signals would be limited and locations would be specified
- Upgrading of interchanges and new interchanges will be considered

Questions and Answers/Discussion

Subsequent to the presentation of existing conditions, planning framework and recommended improvement alternatives. The meeting was opened to questions and answers and general discussion.

- Bertha Ogrin (Lake County Board) questioned whether the plan would consider frontage roads.

Tim Neuman (CH2M HILL) responded that frontage roads would be considered as alternatives when developing the plan. Tim pointed out that frontage roads do, however, require additional right-of-way.

- Jeff Meyer (North Chicago) commented that the grey area shown on the land use map in the northern segment of U.S. 41 in the vicinity of Buckley Road, is being planned for high intensity industrial and commercial development. There is heavy demand for curb cuts in this area.

MEETING MINUTES

Page 3

March 15, 1993

CHI31495.01.A5

- Rich Starr (IDOT) mentioned that an agreement exists with IDOT for a signal north of the EJ&E Railway and south of IL 137.
- Jeff Meyer (North Chicago) asked whether businesses are endangered of losing existing curb cuts.

Rich Starr (IDOT) stated that it would be unlikely that the plan would recommend removing all access to a given site. If the plan were to remove all access the property would be acquired. Mr. Starr noted that right in and right out access would be considered acceptable, or redevelopment could serve as a means of eliminating access points.

Concerns were expressed over the "Full Moon Restaurant."

- Bob Kiezy (Lake Forest) asked for a description of the planning process over the next three months.

Tim Neuman (CH2M HILL) responded that the plans would be refined and detailed at a scale of 1"=400', future right of way needs would be identified, locations of signals and intersection lane arrangements would be determined, interchange configurations and locations will be determined, and draft-final report would be prepared. The third panel meeting will be held to review the draft of the recommended plan and report. After the third panel meeting a public hearing will be held. Following the public hearing the final report will be prepared and submitted.
- Bob Kiezy (Lake Forest) suggested that his planning staff, who understand community concerns, interact/work with the consultant team to help develop the plan.
- Bob Kiezy (Lake Forest) commented that most concerns (Lake Forest) regarding the plan will come from residences. Mr. Kiezy stated that the community would likely be amenable to the plan provided widening could occur within existing right-of-way and the existing berms are left in place. If this cannot be accomplished there will be opposition.

Tim Neuman (CH2M HILL) asked if noise walls would be acceptable replacements to the berms. Mr. Kiezy responded that this would not be acceptable.

MEETING MINUTES

Page 4

March 15, 1993

CHI31495.01.A5

- A comment was made that a traffic study for redevelopment of Fort Sheridan identifies the need for four lanes on Old Elm Road and Westleigh Road.
- Bob Kiezy (Lake Forest) commented that U.S. 41 cuts Lake Forest in half and there has been "talk" of providing additional overpasses for pedestrians or bicycles. Mr. Kiezy stated that they would be happy to "feed" consultant information.

Tim Neuman (CH2M HILL) stated that crossings could be incorporated as part of the SRA corridor plan and welcomed any information from Lake Forest.

- Bob Kiezy (Lake Forest) pointed out that the village of Lake Forest currently owns right-of-way in the area surrounding the IL 60 interchange.
- Tim Neuman (CH2M HILL) asked whether there has been any consideration of connecting IL 60 and Westleigh Road.

Bob Kiezy (Lake Forest) responded that it has not been considered. They would be willing to take a look at it but there are residential properties in the area that may be impacted.

- Martin Buehler (Lake County) commented that he could not envision left turn access provided at any location other than at signal locations. Mr. Buehler commented that there is a median opening at Gage Lane, however, it is barricaded by barrels. Mr. Buehler commented that cross median access at this location could be restricted to emergency vehicles only.

Rich Starr (IDOT) stated that he would check IDOT's plans for this area.

- Jeff Meyer (North Chicago) suggested to be aware of base closings.
- Bob Kiezy (Lake Forest) stated that Highland Park has long range re-development plans between Old Elm Road and IL 22. Mr. Kiezy stated that Lake Forest would go along with the development of a six lane facility provided other communities would be amenable to the six lane facility.
- Bob Kiezy (Lake Forest) stated that they would provide information on the grey areas shown on the land use plans for areas within Lake Forest.

MEETING MINUTES

Page 5

March 15, 1993

CHI31495.01.A5

- Jeff Meyer (North Chicago) pointed out that there is no more 22nd Street in North Chicago.
- Bob Kiezy (Lake Forest) stated that at the public hearings people will be concerned that if U.S. 41 is widened to six lanes that traffic will divert from the tollway to U.S. 41. Mr. Kiezy asked whether this question has been considered

Rich Starr (IDOT) responded that traffic may, in fact, divert to U.S. 41 and a proper response to this question would be prepared.

- Bertha Ogrin (Lake County Board) asked how lighting would be considered along SRAs. Ms. Ogrin specifically made reference to U.S. 41 and Buckley Road.

Rich Starr (IDOT) stated that lighting standards have not yet been established for SRAs

- Bob Kiezy (Lake Forest) commented that lighting could be as big an issue as adding the third lane to U.S. 41.

Tim Neuman concluded the meeting by thanking all those attending and discussing remaining work tasks and the schedule for completion. Tim pointed out that the current work plan is to develop a draft of the recommended corridor plan at 1"=400' and draft the final report over the next 2-3 months. A third panel meeting will be scheduled some time in late spring or summer to discuss the draft plan and report. Three public hearings will be scheduled and will take place sometime in summer or early fall.

It was requested that any relevant information be sent directly to CH2M HILL or through the Mark Schmidt the panel coordinator.

NAME	REPRESENTING	PHONE #
Dick Stafford	CH2M HILL	866-9490
Tim Neuman	CH2M HILL	(708)866-9490
KATHLEEN ROSE	CATS	312-793-3464
Bernita Cyzik	Lake Co. Bd, Dist. 8	708-244-0751
Jeff Meyer	City of North Chicago	708-578-7754
Mark Schmidt	Panel Coordinator	708-362-3950
Marty Buehler	Lake County	708-362-3950
KEN MAGNUS	LAKE FOREST	708-615-4329
BOB KIEZY	LAKE FOREST	708-234-2600
RICH STARR	IDOT	708-705-4095

SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 3
U.S. 41—Lake County
Corridor Limits: IL 120 to I-94

LOCATION: Lake County Division of Highways—Libertyville

DATE: November 8, 1993

TIME: 9:30 AM

ATTENDANCE: See Attached Roster

PROJECT: CHI31495.01.A5

Dick Stafford (CH2M HILL) opened the meeting by asking panel members to introduce themselves. Dick briefly summarized the content of the second panel meeting, pointing out that the second panel meeting was the broad system concept of U.S. 41. Dick then summarized the purpose and objectives of this meeting, stating that the U.S. 41 proposed corridor plan would be presented and discussed.

Dick then began presenting the SRA plan by describing the proposed recommendations depicted on the plan exhibits. The following points summarize questions and/or areas of concerns.

- Jeff Meyer of North Chicago pointed out that 22nd Street has been renamed Martin Luther King Drive.
- Ron Kroop of Highland Park asked whether right turn lanes would be provided at access points to local land uses.

Dick Stafford responded that right-turn lanes have not been shown at all access points. Dick commented that additional right-turn lanes could be added to the plan. Right turn lanes at locations other than intersections were provided at locations where there are a high frequency of access points. At these locations the right turn lanes are developed as continuous right turn lanes for acceleration and deceleration. Dick requested any specific locations where a community desires continuous right turn lanes so that they may be considered as part of the proposed corridor plan.

MEETING MINUTES

Page 2

November 8, 1993

CHI31495.01.A5

- Ken Magnus of Lake Forest inquired about the right-of-way requirements needed south of Westleigh Road.

Dick pointed out an additional five feet of right-of-way would be required to develop open ditches along the outside. Other alternatives, such as employing curb and gutter would be possible if it is mandatory to mitigate any right-of-way acquisition.

- Ron Kroop suggested that a dual left turn lane be added to the westbound approach of the West Park Avenue and U.S. 41 intersection. This was warranted as a result of a traffic impact study of development in the southeast quadrant.
- Ron Kroop also pointed out that there is a parcel of land just south of West Park Avenue along the east side of U.S. 12 that is going to be used for compensatory storage.

Dick discussed the remaining project schedule stating that a public hearing would be held on December 1, 1993 between 2:00 and 7:00 pm at the Hotel Moraine in Highwood. Subsequent to the public hearing there will be a 30 day comment period. After the 30 day comment period the comments will be addressed and the report finalized.

Dick closed the meeting by thanking the panel members for their input and contributions throughout the study process.

Community Comments and Correspondence



CITY OF NORTH CHICAGO

1850 LEWIS AVENUE

NORTH CHICAGO, IL 60064

708 /578-7778

5009

OFFICE OF THE MAYOR
BOBBY E. THOMPSON

December 1, 1993

Mr. Duane Carlson, District Engineer
Illinois Department of Transportation
Division of Highways, District 1
201 West Center Court
Schaumburg, IL 60196-1096

Attn: Mr. Richard Starr, Programming

Subject: U.S. 41 SRA
Illinois 120 to Edens Expressway

Dear Mr. Carlson:

At the request of Mayor Bobby E. Thompson, I would like to express the views of the City of North Chicago regarding the U.S. Route 41 SRA. The City of North Chicago supports this project. We feel that the added lanes, as well as the barrier median, will improve traffic flow and help alleviate the congestion both in North Chicago and in Lake County. However, we have three concerns that we would like address in the final SRA Report. These three issues involve access, drainage and the U.S. Route 41/IL Route 137 intersection operation and are as follows:

Access

A signalized intersection is proposed to be located about 1300 feet south of Brompton Avenue. This location appears to adequately serve access to properties adjacent to and just west of U.S. Route 41. However, the City's long range plans call for development of the State-owned property south of Illinois, Route 137 farther west of U.S. Route 41. Since the southern one-half of the State-owned property is wetlands, this portion may never be available for development. As a result, the location of the proposed signal south of Brompton Avenue would not be conveniently located to access this land. The City would prefer that the signalized intersection (providing for full access) be located further north on U.S. Route 41 perhaps at Bittersweet or Brompton Avenue. We would be pleased to work with the Illinois Department of Transportation on a mutually satisfactory solution.

December 1, 1993
Mr. Duane Carlson, District Engineer
Page 2 of 2

Drainage

The drainage in the area of U.S. 41 and Brompton Avenue is poor. This location floods on a consistent basis. It is our opinion that the flooding is either the result of water backing up from the Skokie River or the lack of culvert capacity to convey water to the Skokie River. In any case, water ponds on the pavement and is a hazard to motorists. We are requesting that the proposed improvement also include the necessary improvements to drainage so that this safety problem is resolved.

U.S. Route 41/Illinois Route 137 Intersection

The intersection of U.S. Route 41/Illinois and Route 137 has a large number of accidents. In a 1991 letter to Mayor Thompson, your office had stated that this intersection had experienced more accidents, including more fatal accidents, than what had occurred at Clavey Road over the previous five years. As a result of the City's concern over safety, the City is currently considering the installation of opticon at this intersection. We are requesting that this study consider the feasibility of providing safety devices such as warning lights, warning signs with flashing lights or rumble strips.

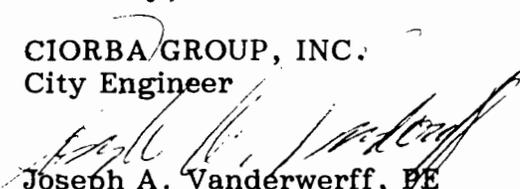
In addition, the City is concerned about the third (right) lane on U.S. Route 41 at this intersection. While this lane improves the capacity of the intersection, it is generally being used by motorists as a by-pass around the other two lanes of traffic, which at great speeds creates a hazardous situation. It is our understanding that this "by-pass" lane will be eliminated as part of the proposed intersection improvement which will have three through lanes.

In discussing this project with the Street and Alley Committee of the City Council, a Committee of Whole, a desire was expressed by the City Council for the construction of an overpass at this intersection, similar to the improvement completed at Clavey Road.

Once again, I would like to offer the City's support for this project.

Sincerely,

CIORBA/GROUP, INC.
City Engineer



Joseph A. Vanderwerff, PE
Vice-President

JAV:np



BUREAU OF PROGRAMMING

RECEIVED

DEC 28 1993

December 22, 1993

DISTRICT #1

Mr. Rich Starr
Illinois Department of Transportation
201 West Center Court
Schaumburg, IL 60196

Comments on Proposed Route 41 SRA Alignment

Dear Mr. Starr:

The Village of Lake Bluff hereby submits its comments pertaining to the Draft Final Report of the Route 41 Strategic Regional Arterial Plan, dated October 1993. Due to its impact on the Village, most of these comments derive from the proposed re-design of the Rt. 41 interchange with Rt. 176. Since this intersection is of critical importance to the Village, we request that our staff be closely advised and allowed to comment on the alternatives. Although your consultants may have received minimal input from Lake Bluff in the past, I am directing the Village Administrator and Engineer to make themselves fully available to you from here forward.

Our comments on the Draft Final Report are as follows:

1. The proposed access and egress ramps south of Rt. 176 must be changed to take into consideration current uses of these properties. East of Rt. 41, Village approval has been granted and construction started for an automobile dealership. West of Rt. 41, a new manufacturing facility (Liquid Controls) has been built and operating for over one year. Given the significance and value of these developments on properties identified for highway use in the Plan, the entire interchange design must be re-evaluated.
2. There are three large diameter utility lines (a sewage force main and two water mains) running under Rt. 41 along the south side of Rt. 176. The interchange configuration as proposed would most likely require modifications to all three. The significant costs of relocating these lines should be identified as part of the preliminary evaluation of interchange alternatives.
3. The design and impact of widening Rt. 176 east of the Chicago and Northwestern RR crossing is unspecified. Is more information available in this regard? Does this aspect of this proposal coordinate with other State or Lake County plans to widen Rt. 176 further to the East?

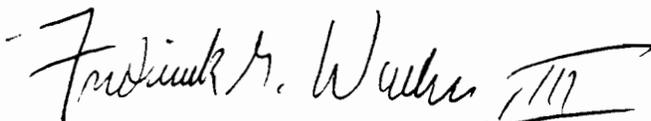
Draft Letter re: Rt. 41 SRA Plan to IDOT
December 22, 1993

4. It is unclear how property owners currently with direct access to Rt. 41 will benefit by restricting Rt. 41 access exclusively to ramps from Rt. 176. Although access roads are contemplated, is more specific information on this part of the proposal available? Also, the plan reflects an increase in the width of the existing Rt. 41 Right-Of-Way to the east in the vicinity of the Rt. 176 interchange. The proposed new eastern Right-Of-Way limit for Rt. 41 is drawn through several existing buildings. Is more information on this part of the proposal available?
5. The North Shore Bike Path is directed across Rt. 176 twice, apparently to provide for its crossing of Rt. 41 on the north side of Rt. 176. Has the Lake County Department of Transportation commented on this aspect of the proposal?
6. As the corporate limits of the Village of Lake Bluff do extend across Rt. 41 in areas both north and south of Rt. 176, the Village is directly involved in both "Segment I" and "Segment II" of the Rt. 41 SRA Plan. On page IV-2 of the draft report, Lake Bluff is not identified as one of the communities through which "Segment I" travels. Also, on page IV-14, Lake Bluff is not identified as one of the communities through which "Segment II" travels.
7. Since timing and financing are critical to this and every other public project, what is the likely construction schedule and probable funding source for this project? If designated, what are the contingency plans for each of these items?

As indicated by Village Administrator Street, the Village welcomes the opportunity to meet with you or your lead consultant on this project prior to the close of the comment period. We recognize the importance of Route 41 to our community and look forward to working with IDOT to address existing problems so that new difficulties are minimized.

Thank you for your consideration and responsiveness to these concerns.

Very truly yours,



Frederick G. Wacker, III
Village President



KENT S. STREET
Village Administrator

May 25, 1994

Mr. Rich Starr
Illinois Department of Transportation
201 W. Center Court
Schaumburg, Illinois 60196

Dear Mr. Starr:

Based on further review of the draft SRA report for Route 41, and in particular its intersection with Route 176, the Village offers the following comments:

- The intersection/interchange with 176 should be designed to allow for safe and convenient access to and from Route 41;
- The intersection/interchange with 176 should be designed so as to be the least invasive to surrounding property owners;
- The intersection/interchange with 176 should be designed to allow for smooth traffic flow on Route 41, without a traffic signal if possible.

In addition to these comments, the Village Board considered the four alternative design studies presented by CH2M Hill and a majority favored alternative #1.

Thank you again for providing the Village an opportunity to review and comment on the improvements being planned for Route 41. We look forward to working with IDOT in the future as it works toward improving traffic safety and enhancing traffic flow in the Lake Bluff area.

Sincerely,

Kent S. Street
Village Administrator

KSS:pl

cc: Village President and Board of Trustees
George E. Russell, Village Engineer
Richard Stafford, CH2M Hill ✓

VILLAGE HALL, 40 EAST CENTER AVENUE, LAKE BLUFF, ILLINOIS 60044

Telephone 708/234-0774 FAX 708/234-7254

THE CITY OF LAKE FOREST
POSITION PAPER
STRATEGIC REGIONAL ARTERIAL
US ROUTE 41, ILLINOIS ROUTE 120, I-94
DRAFT FINAL REPORT
OCTOBER, 1993

The City of Lake Forest respectfully submits its reservations and concerns regarding the proposed improvements to US Route 41 within the City's corporate limits. As set forth below, the City questions the need and economic benefit of any upgrade to US Route 41 from I-94 north to Illinois Route 120. While the City does not wish to serve as an obstructionist to the Illinois Department of Transportation's plans for upgrading strategic arterial highways throughout the State, the proposed improvement does raise serious questions regarding the environmental, traffic circulation, and economic advantages to the taxpayers of Illinois. In your continued deliberations on this project, the residents of Lake Forest request your thoughtful consideration to the following:

I. NEED

A. PUBLIC POLICY ON PUBLIC TRANSPORTATION

It would appear, through recent actions by the US Congress, that national public policy is moving toward public transportation incentives and options. Employee trip reduction and investment in the Wisconsin Central commuter line are two recent actions that will have a profound effect on total average daily traffic counts on US Route 41, as well as other arterial and non-arterial

streets. Why not focus the allocation of limited public resources on reducing traffic from our highways and offer them other more convenient and environmentally safe modes of public transportation?

B. EAST-WEST ARTERIAL IMPROVEMENTS

The State, and particularly Lake County, appear to have sufficient north-south arterial access, particularly in light of the recent decision to extend Illinois 53. Should we not focus our attention on the obvious deficiencies in our strategic regional arterial system, namely east-west thoroughfares? Improving north-south circulation will have a diminuous impact on relieving traffic congestion without first implementing improvements to east-west arterials.

C. I-94 TOLLWAY

Why has the decision been made to increase traffic flows on US Route 41 when paralleling this highway within one mile is another major north-south arterial -- I-94 that is also scheduled for expansion/improvement? Improvements to tollbooths and various interchanges could significantly enhance the carrying capacity of I-94. This arterial seems more properly designed to handle the speed and volume of north-south traffic within Lake County rather than being programmed for US Route 41.

D. PROJECTED GROWTH AND AVERAGE DAILY TRAFFIC (ADT)

As set forth in Table 12 of the draft report and attached hereto as Exhibit "A", it would appear that the increases projected in the ADT for US Route 41 do

not justify the magnitude of proposed expenditures and improvements. These projected ADTs, along with recent changes in employee trip reduction, the planned Illinois 53 extension, the planned I-94 tollway expansion and the Wisconsin Central line should raise serious cost-benefit questions on the proposed US Route 41 improvements.

II. COMMUNITY CONCERNS

A. ENVIRONMENTAL AND ECONOMIC IMPACT

The areas adjacent to US Route 41 within the City limits are heavily residential, which could be seriously impacted by any improvement and increased traffic. The City would expect, at a minimum, that the State would control and minimize any negative impact that the proposed improvement would have on the adjacent residential properties. The City has worked very hard to restrict, and where possible eliminate, the visual and developmental impacts along the US Route 41 corridor. The City has been unique in its approach to protecting the corridor and should be given special design considerations in recognition of the residential character that adjoins this arterial.

B. NOISE ABATEMENT

If the improvements are to proceed, the State should implement all known technology to reduce the noise impact on the adjacent residential properties. This might include berms, barriers, etc., as well as the decision on pavement type (i.e., concrete vs. asphalt pavement).

C. PARK AND RIDE LOCATIONS

The proposed Park and Ride facility at the intersection of US Route 41 and Route 60 is inappropriate as it is in the middle of a residential area. In fact, preliminary plans have been submitted to the City by the owner of the property subdividing the designated property into residential lots.

D. STREETLIGHTS

The City policy has been to restrict the installation of high-illumination streetlights. The City would not look favorably upon the installation of lights that have been installed along US Route 41 south of Lake Forest.

E. ADDITIONAL RIGHT-OF-WAY

The City would not look favorably upon the acquisition of additional right-of-way, particularly if it encroaches on adjacent residential property. Every effort should be made in the design to limit needed right-of-way acquisitions through the installation of curb and gutter, etc.. Where absolutely necessary, that additional right-of-way should be acquired away from residential properties (i.e., west side of US Route 41 between Old Elm and Westleigh Road).

F. PEDESTRIAN ACCESS

Further widening of US Route 41 would only exacerbate the dissection that this arterial causes in the community. Any proposed improvement would need to

incorporate pedestrian underpasses/overpass to permit the safe and easy travelings of pedestrians and bicyclists from east and west of this arterial within Lake Forest.

G. DEERPATH ROAD INTERSECTION

Given the limited right-of-way at this intersection, the City questions whether the State can properly design the geometrics for the intersection at Deerpath and US Route 41. Further, any improvement would have to incorporate upgrades to the undersized stormwater drainage system that currently exists in this area, and is under the jurisdiction of IDOT.

H. SIGNAGE

The City has very strict sign controls and would like to minimize any installations within its corporate limits.

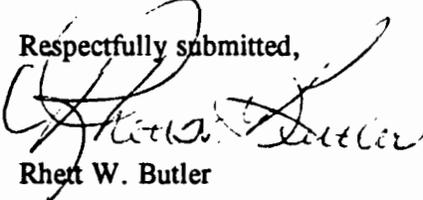
I. POSTED SPEED LIMITS

Can IDOT realistically expect to achieve speed limits as proposed (65 mph) with three (3) signalized intersections within approximately one mile (Old Elm north to Route 60)? Is 65 mph speed limit warranted with adjacent residential development?

J. TIMETABLE

What is a realistic timetable for this project going forward? How do the US Route 41 priorities relate to other strategic arterial priorities throughout the State of Illinois? Should the State as a policy adopt east-west arterial improvements over north-south improvements?

In summation, while the City does not want to appear to be obstructionist to the State's plans for an efficient highway system. The above reflect legitimate concerns the community has with the proposed project. Lake Forest would be uniquely affected by this project, due to the residential character of the community adjacent to the US Route 41 corridor. Our overriding concern is to eliminate any negative impact that the proposed improvements would have on those adjoining residential properties. The City Council and City staff would be happy to avail itself to IDOT engineers and planners to discuss the concerns raised above.

Respectfully submitted,


Rhett W. Butler

Mayor

cc: Members of the City Council
Senator David Barkhausen
Representative Virginia Fiester Frederick
Mr. Duane P. Carlson, P.E., District Engineer, IDOT
Mr. Richard Austin, Assistant Secretary of Transportation
Mr. Dick Stafford, CH2M Hill

Table 12		
Year 2010 Average Daily Traffic (ADT)		
Forecast for Strategic Regional Arterial for U.S. 41		
Location	Existing	2010 ADT Forecast
Illinois 120 to Illinois 137	23,900 to 32,500	20,000 to 25,000
Illinois 137 to Deerpath Avenue	34,000 to 37,800	35,000 to 40,000
Deerpath Avenue to West Park Avenue	31,000 to 45,000	40,000 to 45,000
West Park Avenue to I-94	47,000 to 63,000	48,000 to 53,600
Source: Chicago Area Transportation Study		

CHI261/053.51

Bimonthly Newsletters

SRA SPOTLIGHT

U.S. 41 CORRIDOR ADVISORY PANEL

THE SRA PROJECT

Introduction

The 2010 Transportation System Development Plan adopted by the Chicago Area Transportation Study (CATS) and the Northeastern Illinois Planning Commission (NIPC) recognizes that not all long-distance highway travel can be handled by the expressway system. Realizing that the arterial system will have to carry some long-distance trips, the 2010 Plan designated a system of Strategic Regional Arterials (SRAs) to supplement the expressway system.

The SRA system is a 1,340-mile network of existing roads in the Northeastern Illinois region. They create a network of 66 routes intended to serve as a second tier to the expressway system. The regional highway system, consisting of existing and planned expressways and strategic regional arterials is shown on the map to the right.

Spacing of routes that comprise the SRA system was determined based upon the projected levels of future travel demand within different parts of the region, ranging from about 3 miles apart in the most densely developed areas to about 8 miles apart in predominantly rural areas. CATS estimates travel in the year 2010 will be 23 percent more than for 1980.

Design Concepts

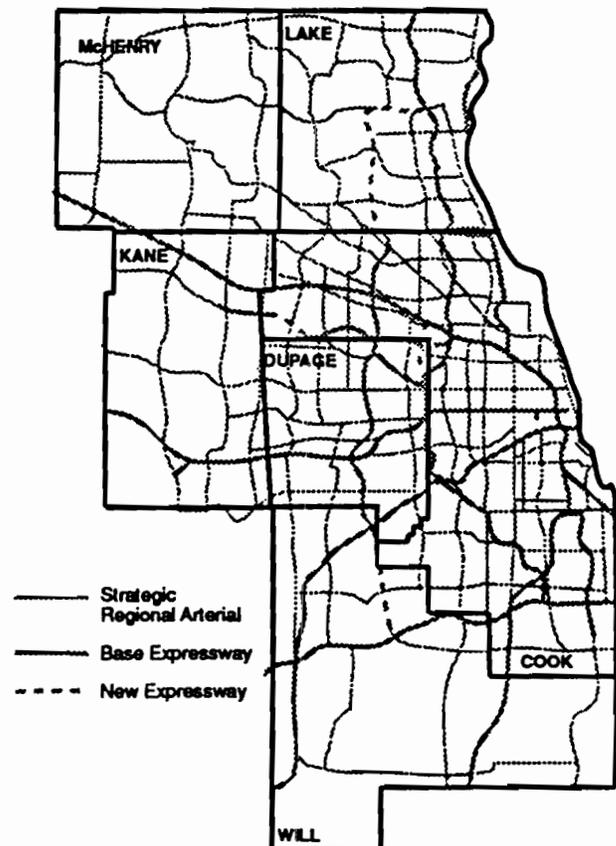
A report on design concepts for the SRA system, prepared by Harland Bartholomew & Associates, Inc., was endorsed by the CATS Policy Committee on January 31, 1991, for use as a guide but not policy in the planning of the SRA system. Some of the design techniques and concepts recommended for use in implementing the objectives of the SRA system are:

- Signalization—Including provision of new signals, interconnection of signals, and signal timing;

- Intersection Improvements—Consisting of provision of turn lanes, channelization, and restriction of certain movements;
- Adding Lanes—To achieve a desirable cross section for urban, suburban, and rural areas;
- Bus Service Improvements—Including bus stops and traffic signal preemption;

(Continued on Page 4)

2010 STRATEGIC REGIONAL ARTERIAL SYSTEM



SRA—ONE PART OF OPERATION GREEN LIGHT

SRA is one part of a much larger project to address traffic congestion: Operation Green Light. Other activities are outlined below.

Develop Major Transit/Highway Facilities

This element will contribute to freeway and transit projects in the 2010 Plan. Also, it will begin engineering studies and preserve right-of-way for future routes.

Improve Other Key Arterial Roadways

If the SRA network is to carry regional traffic, the remaining roadways must play a more important role in carrying local traffic. This element will address improvements that will make them more efficient.

Identify Strategic Transit Improvements

There are two goals for this element: (1) to make

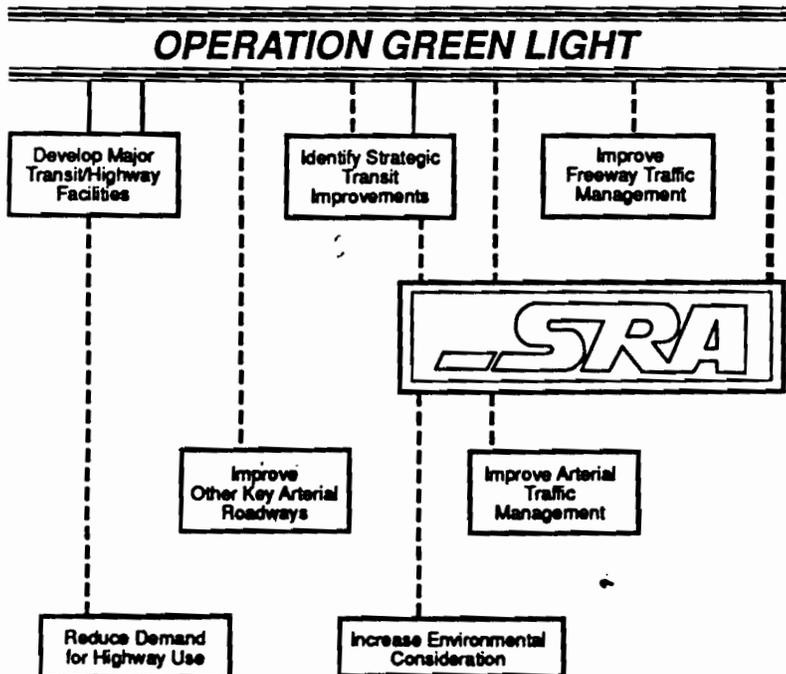
transit more convenient and swift and (2) to encourage more pedestrian and bicycle routes.

Improve Freeway Traffic Management

Information about accidents and blocked lanes is available almost immediately. This element will develop ways to provide this information to other drivers and to emergency personnel more quickly. Other priorities are controlling the rate at which vehicles enter the freeway and continuing the installation of new toll collection equipment.

Improve Arterial Traffic Management

Like freeways, better information systems for these routes will reduce congestion. Providing this information to individual drivers will require sophisticated systems. New equipment for private cars is being tested. Traffic signal networks are also very important. SRA will address these same topics.



Reduce Demand for Highway Use

This element examines ways to reduce the number of vehicles on the road, particularly at rush hours. Increasing the number of people in each vehicle is the purpose of most strategies. Ride-sharing and mass transit offer ways that commuters can help. Businesses could offer preferred parking to people sharing rides and support the costs of sharing rides. This element also encourages shifting work schedules.

Increase Environmental Consideration

Studies of ways to reduce noise and air pollution, to improve the appearance of roads, and to increase cooperation among local governments are all part of this element.

THE SRA PROJECT (Continued from Page 1)

- Access Management—To reduce conflicts and improve safety;
- Median Control—To provide for left-turning vehicles, direct turning movements to desired locations, and reduce centerline conflicts;
- Structural Clearance Improvements—Both vertical and horizontal clearances;
- Traffic Operational Improvements—Such as signing and pavement markings; and
- Drainage Problem Correction—Whenever required.

The design concepts also address criteria and conditions from removal of curb parking and implementation of high-occupancy vehicle (HOV) lanes.

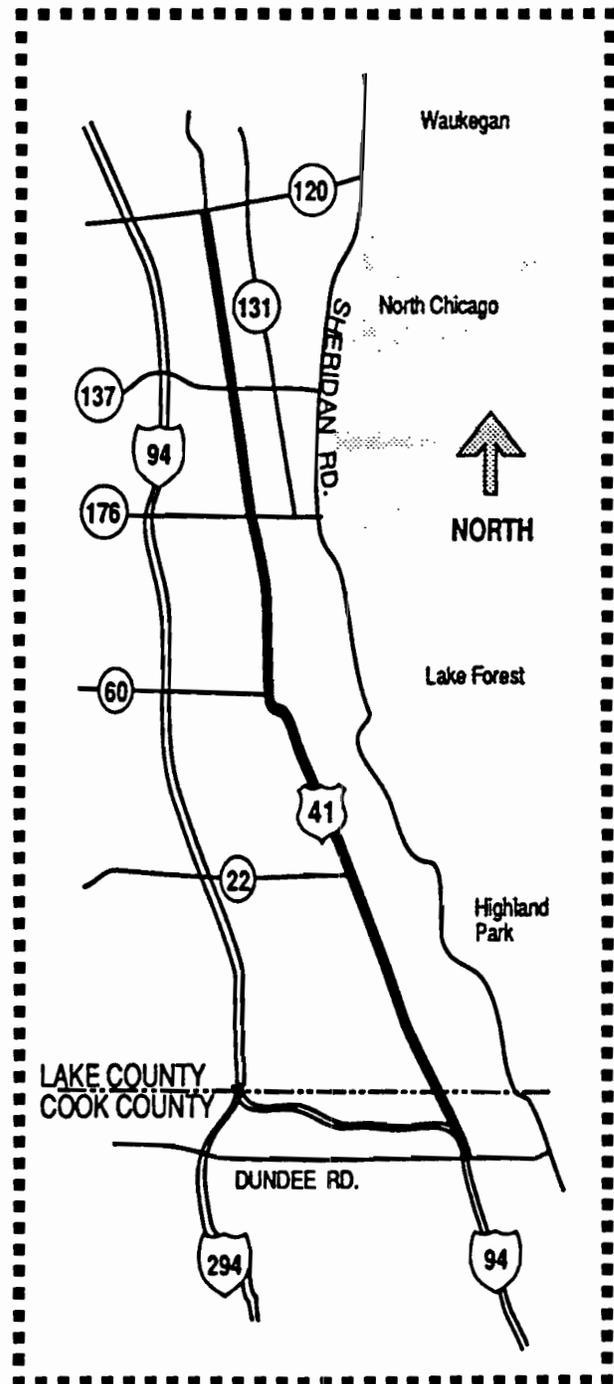
Studies of SRA Routes

The concepts and standard developed thus far and modified or enlarged upon as work progresses will be applied to the entire 1,340 miles of SRA routes in five consecutive studies. This study, being accomplished by the consulting firm of CH2M HILL, Inc., is concerned with a total of 305 miles of SRA routes in 12 corridors. The routes selected for this phase of the SRA study process reflect a variety of area types—from rural U.S. 14 in McHenry County to suburban settings such as Barrington Road in Cook County or County Farm Road in Du Page County, and urban Pershing Road and Archer Avenue in the City of Chicago. The resultant plans for each of these routes will include both short- and long-term improvements. Studies will be made of additional sets of roadways each year beginning in 1992 until the entire SRA system has been completed.

A second part of this project consists of identifying and evaluating performance parameters to be used for increasing the effectiveness of various improvements along the SRA routes. This work will be carried on concurrently with the individual SRA corridor analyses.

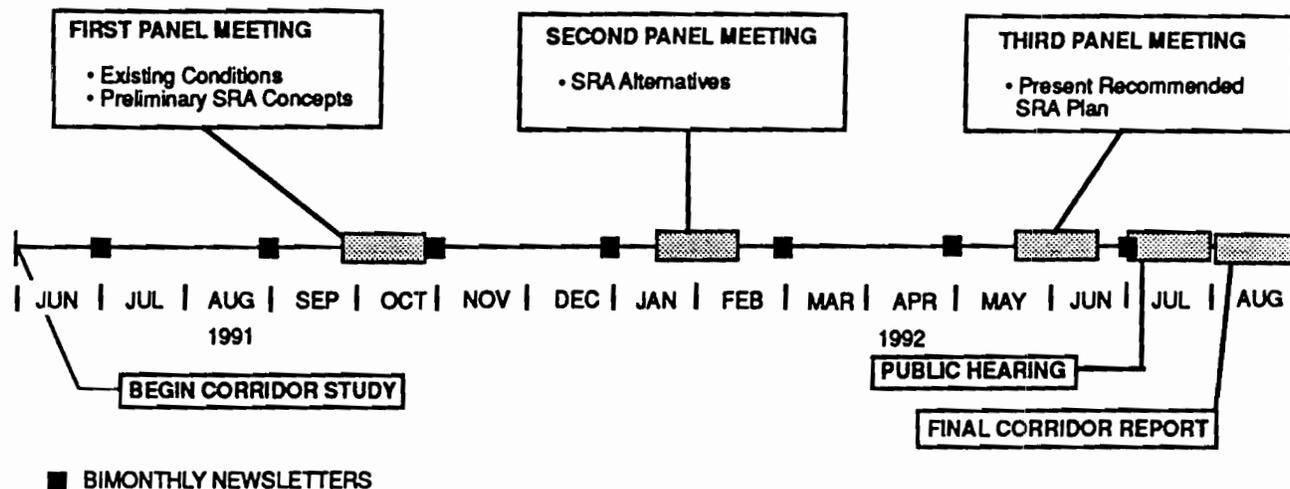
The U.S. 41 Corridor

The map to the right shows the extent of the U.S. 41 SRA Corridor that is the concern of this Advisory Panel. The U.S. 41 Corridor extends from the I-94 connection to the Illinois Tollway, just north of Dundee Road on the Edens Expressway to Illinois 120 (Belvidere Road) in Cook and Lake Counties. The total length of this corridor is approximately 14 miles.



STUDY PROCESS AND SCHEDULE

CORRIDOR 1—U.S. 41 FROM I-94 TO IL-120



ROLE OF THE ADVISORY PANEL

Who should be on the Panel?

The panel is composed of government representatives of jurisdictions along this corridor. The panel may also wish to add representatives from business and community organizations along the route.

What are the duties of the Panel?

The panel is responsible for reviewing and commenting on the study recommendations and conclusions. Panel members also assist the consultant team by identifying and assembling specific data and information about land use, transportation, and development within their respective jurisdiction. During July and August, the Chicago Area Transportation Study (CATS) will be contacting the advisory panels on behalf of the consultant team to gather corridor-specific data.

How often will the Panel meet?

There are three planned Panel meetings involving the consultant, the Illinois Department of Transportation, and CATS. The Advisory Panel may also elect to meet at other times. It would be the responsibility of the coordinator of the Panel to inform members of topics and arrange the program.

Will the consultants be available to meet separately with representatives of all the communities along the route?

No. The Advisory Panels are the only formal community contact included within the contract for consultant services. However, the consultant team does plan to meet informally with community officials, as needed, to gather information and identify local concerns.

SPOTLIGHT ON THE SPOTLIGHT

What to Expect in Future Editions. . .

The SRA Spotlight will be issued about every 2 months during the course of the study. Future issues will be designed to keep you abreast of study progress and answer your questions. Some features of future Spotlights will be:

- Reports on project developments such as panel meetings, public hearings, and other forums;
- A regular section presenting answers to questions raised at corridor meetings for this corridor, or in other corridors if the information would be universally useful;
- A status report to keep you up-to-date on study findings, and recommendations; and
- Announcements of forthcoming activities that will involve panel members and others in the corridor.

There is also a form on the facing page that you are encouraged to use to give us your views and ideas regarding future issues of the Spotlight.

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SRA SPOTLIGHT
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Publisher:

The Illinois Department of Transportation

Editor:

CEMHILL

For:

The Strategic Regional Arterials Plan

Advisory Panel

Coordinator:

Mark Schmidt
Lake County Division of Transportation

Panel Members:

Highland Park
Lake Bluff
Lake Forest
North Chicago
Northbrook
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Waukegan

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SRA SPOTLIGHT

U.S. 41 CORRIDOR ADVISORY PANEL

SRA ROUTE TYPES

The extent of the Strategic Regional Arterial (SRA) network was described in Newsletter Number One. It consists of 1340 miles of existing roads in Northeastern Illinois, encompassing 146 route segments in the six-county area. Within this network there are significant differences in the roadway environment which determine how various types of routes may function in the system. Three different types of SRA routes have been designated, corresponding to three different types of roadway environment

- **Urban Routes**
- **Suburban Routes**
- **Rural Routes**

The designation of route types within the overall SRA system reflects the density of development within the different portions of the region. The projected density of households for the year 2010 was used as the criterion for defining density of development for the route types. Densities which correspond to each of these route types are:

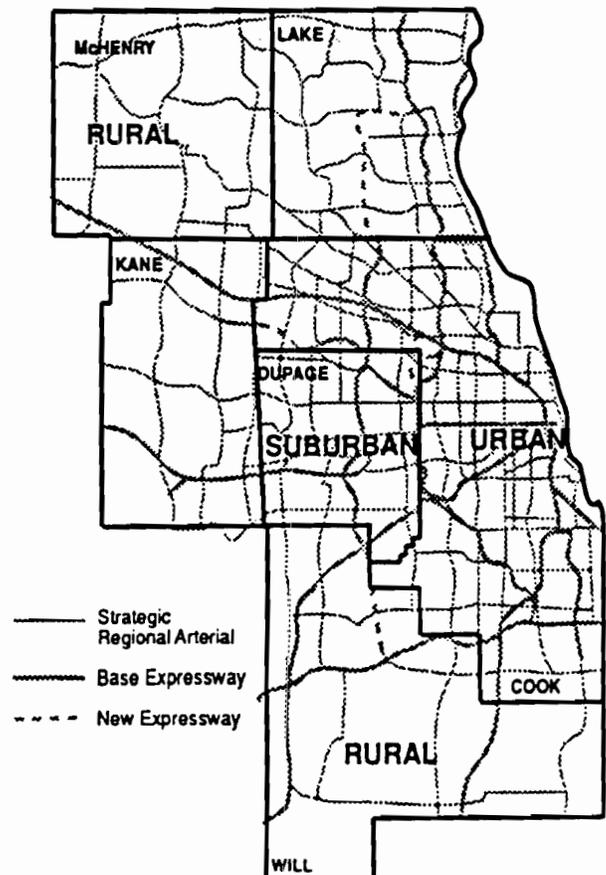
- **Urban routes:** Densities over 5.0 households per acre by 2010.
- **Suburban routes:** Densities between 0.5 and 5.0 households per acre by 2010.
- **Rural routes:** Densities less than 0.5 households per acre by 2010.

The areas for each route type are shown in the accompanying map. Urban routes are located in the City of Chicago and adjacent portions of more densely

developed suburbs such as Oak Park. Suburban route designations encompass most of suburban Cook and Lake Counties, all of DuPage County, and the more developed portions of McHenry, Kane and Will Counties. Within each of the three areas, continuity of route type is maintained based upon the overall density of 2010 development.

The *Design Concept Report*, prepared in 1990 and endorsed by the Policy Committee of the Chicago Area

2010 STRATEGIC REGIONAL ARTERIAL SYSTEM



ROADWAY FEATURES RELATED TO TYPE OF FACILITY

Transportation Study (CATS) earlier this year, set out desirable characteristics for each type of SRA route in year 2010.

Urban Routes

The desirable cross-section for SRA routes in urban areas is shown below. It consists of two traffic lanes in each direction, preferably with a median to separate the traffic flows and provide protection for turning vehicles. An additional curb lane may be provided in some circumstances for use by buses or other high-occupancy vehicles (HOV's). Curb parking is not recommended; it should be replaced in offstreet facilities wherever possible.

All major intersections on urban SRA routes would be signalized and interconnected into signal networks or signal systems with pedestrian actuation where needed. Intersections would also provide left- and right-turn lanes where right-of-way is available.

Transit service enhancements would be considered on urban SRA routes which accommodate bus routes. Actions would also be taken to manage access thereby improving traffic operations and enhancing safety.

Suburban Routes

The desirable cross-section for SRA routes in suburban areas is shown below. Recommended features are three through lanes in each direction, a raised median and turn lanes at intersections. Capacity increasing measures also include signal synchronization, transit and pedestrian amenities, and policies related to access and parking.

Major intersections and interchanges with other SRA routes are of prime concern in the suburban areas (and in rural areas, discussed next). Left- and right-turn lanes would be provided at all major signalized intersections. At many suburban intersections, turning movements are very high and may warrant double left turn lanes. A grade-separated interchange would be considered, at intersections between two SRA routes, if right-of-way is available and if conditions warrant.

Access management is another key consideration

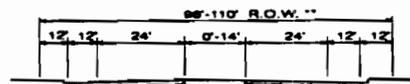
in suburban areas. It is recommended that access to abutting properties be limited to right-in, right-out traffic movements. In suburban areas where there are numerous curb cut access points to properties, these may be combined into a single point.

Rural Routes

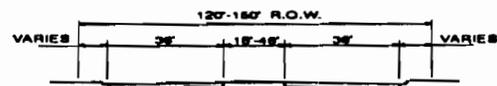
Desirable cross-sections for SRA routes in rural areas are shown below for facilities with and without frontage roads. The rural SRA route would consist of two travel lanes in each direction with left-turn lanes at all intersections and a wide median. As with suburban routes, all major intersection would be signalized and a grade-separated interchange would be considered wherever two SRA routes intersect.

Frontage roads would be considered on rural SRA routes if there are a number of closely spaced driveways and/or groupings of potentially dangerous intersections. Particular attention would be paid to the treatment of frontage road intersections at cross streets that access the SRA systems.

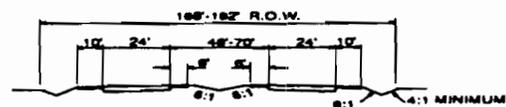
CROSS SECTIONS



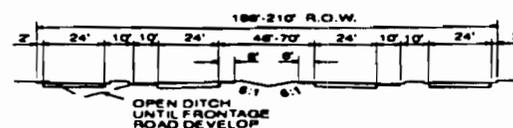
URBAN



SUBURBAN



RURAL



RURAL WITH FRONTAGE ROADS

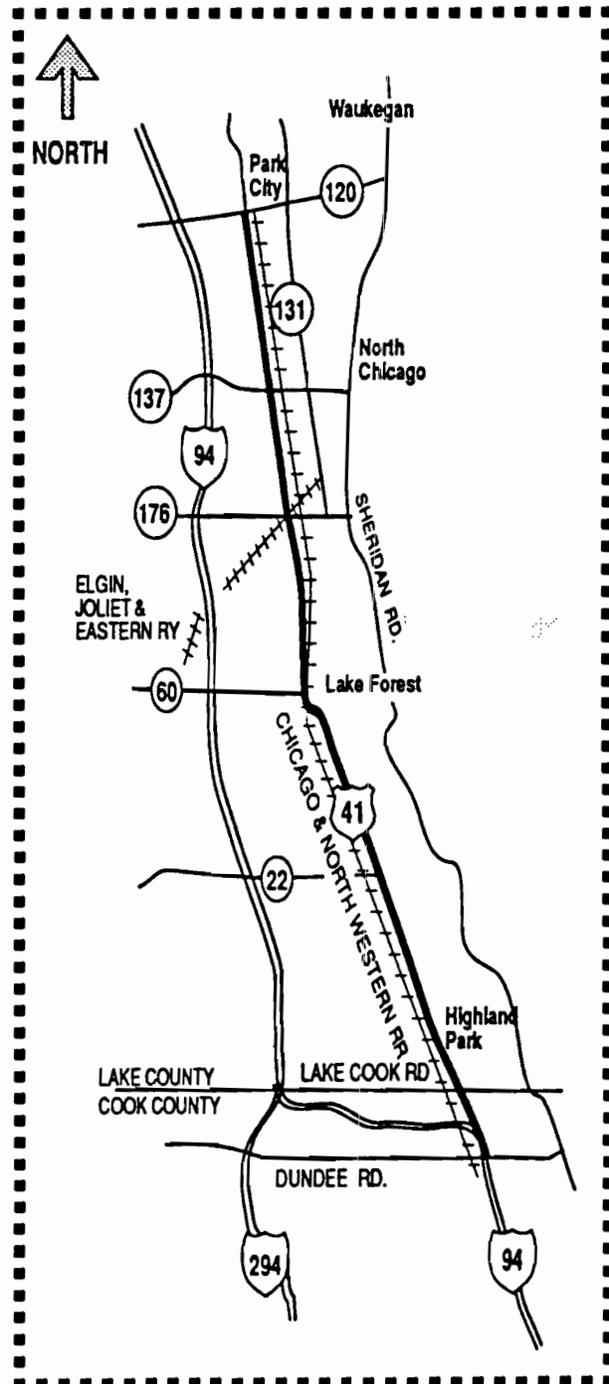
ROUTE TYPE CONSIDERATION IN THE U.S. 41 CORRIDOR

The U.S. 41 Corridor

The U.S. 41 corridor is designated as a suburban SRA from the south junction of I-94 to Illinois Route 120. The ultimate 2010 desirable characteristics for a suburban SRA route could include three lanes in each direction, turn lanes at intersections, and a raised center median. The desired right-of-way could range from 120 to 150 feet.

The existing cross section of U.S. 41 between Illinois Route 120 and Clavey Road is two lanes in each direction, 10-foot paved shoulders, and center medians with and without barriers. Right-of-way varies from 100 to 210 feet. For the segment of U.S. 41 between Clavey Road and the south junction with I-94, the existing cross section is three lanes in each direction, 10-foot paved shoulders, center median with a traffic barrier, and a 300-foot right-of-way.

Future considerations could include providing additional grade separations, consolidating multiple access points, developing alternative access off U.S. 41, and improving traffic control, particularly at intersections in close proximity to the Chicago and North Western railroad.



YOU CAN HELP

There are a number of ways that you, as a panelist for this SRA route segment, can assist in producing the best and most acceptable plan for this corridor.

- A call has gone out earlier for copies of background data, reports, and other information pertaining to the SRA route. It is extremely important that the project engineers and planners have access to previous as well as ongoing work. If you have not yet responded please provide copies to the panel coordinator as soon as possible. Also, if there are any additional areas of concern that you feel should be considered in this process, your panel coordinator should be made aware of this information.

- Please plan to attend panel meetings. These are important sessions that can set the tone for the remainder of the planning study.

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SRA SPOTLIGHT
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Publisher:

The Illinois Department of Transportation

Editor:

CHEMILL

For:

The Strategic Regional Arterials Plan

Advisory Panel

Coordinator:

Mark Schmidt

Lake County Division of Transportation

Panel Members:

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Lake Bluff - N. David Graf

Lake Forest - Charles F. Clarke, Jr.

North Chicago - Bobby E. Thompson

Northbrook - Richard Falcone

Park City - Robert Allen

Waukegan - Haig Paravonian

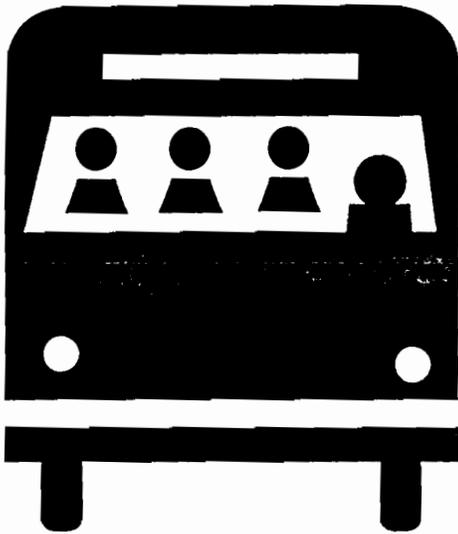
Cook County - Glenn W. Frederichs

Lake County - Martin G. Buehler

SRA SPOTLIGHT

U.S. 41 CORRIDOR ADVISORY PANEL

PUBLIC TRANSIT



The success of today's transportation system and the viability of its future depend on a "balanced" system, one that provides a mixture of modes and optimizes mobility in terms of convenience, comfort, safety, and economy. A key element of this balanced system has long been to give preferential treatment to public transit and other high-occupancy vehicles (HOV).

The Strategic Regional Arterial (SRA) system is intended to accomplish certain specific objectives within the overall transportation system, one of which is to enhance public transportation and personal mobility. This may be accomplished by:

- Improving access to rail transit stations
- Improving operating conditions for buses and other vehicles
- Identifying opportunities for future transit facilities
- Maintaining pedestrian accessibility

These strategies are being investigated for application in plans for each of the SRA routes under study.

Improved Transit Station Accessibility

Existing transit stations along SRA routes will be evaluated for potential improvements to increase accessibility from the SRA. Increased accessibility may motivate more people to make regional trips utilizing transit, thereby reducing the number of vehicles on the SRA. Accessibility could be improved by one or more of the following techniques.

- **Actuated Traffic Signals**—Transit station usage is extremely intensive during peak periods. Incorporating traffic signals with phasing and timing that responds to varying daily traffic levels will make transit stations more accessible and reduce delays. If new traffic signals are proposed at transit stations, they should meet the established traffic warrants and spacing of signals criteria.
- **Turn Lanes**—To maximize through traffic movements for vehicles not wishing to access transit stations, channelized right- and left-turn lanes could be constructed for vehicles turning into transit stations. If demand is high enough, dual left- and/or right-turn lanes might be constructed. Appropriate storage bays for turning vehicles must also be implemented.
- **Parking Improvements**—Parking lot expansion for commuters will be investigated. Preferential parking stalls nearest to transit stations could be designated for HOV. Secure bicycle parking also should be provided at most suburban transit stations.
- **Pedestrian Grade Separations**—If substantial parking for a transit station is located on the opposite side of a SRA, grade separation for the pedestrian movement could be considered. This would tend to reduce delays on the SRA caused by at-grade pedestrian flow, and would also improve safety and convenience for the pedestrians.

Improved Operating Conditions for Buses

A number of transit enhancements will be considered both to relieve traffic congestion and improve operating conditions for buses.

Bus Service on Rural SRAs

Bus services operating on rural SRAs should, if possible, be limited to express service. The buses should have signal preemption capability that can be deployed when they are running behind schedule. Because of the high-speed characteristics of these facilities, flag stops are not considered appropriate. Wherever possible, bus stops on these routes should be planned as public-private cooperative ventures in conjunction with activity centers. These off-the-road sheltered stops would also serve connecting routes and incorporate park-and-ride facilities. They would be located at 2- to 5-mile intervals. Bus stops should be located on the actual SRA routes when there are no opportunities for off-road facilities, and/or to serve riders transferring from connecting services.

Bus Service on Suburban SRAs

Similar to bus services for rural SRAs, bus services on suburban SRAs should be express buses. Where possible or feasible express bus service should be equipped with priority signal preemption capability that can be deployed when they are running behind schedule. Bus stop locations should occur every one-half to 1 mile. Variable factors to consider in locating the stops are:

- Whether there are intersecting bus routes with a corresponding potential for transferring riders; and
- Whether there are significant residential, commercial/retail, or office developments to be served along the route.

The stops would be designed as turnouts and would accommodate connecting services. Walkways to stops of intersecting services would facilitate transfers and promote safety. Near-side and far-side bus stop configurations would be planned to minimize distance between connecting lines.

Bus Service on Urban SRAs

On urban SRA routes that accommodate bus service, a number of transit service enhancements will be reviewed to determine their potential for relieving traffic congestion. One basic technique would be to remove parking from the bus travel lanes, and strictly enforce parking restrictions. Signal system modification represents another potential area for enhancement.

Bus stop turnouts are not considered practical on urban SRAs. On a route-specific basis, however, both the locations and spacing of bus stops will be reviewed. Major objectives would be to eliminate stops in excess of one per block, and to eliminate conflicts with right turns. Where the blocks are short, as in the central area, stops could be located at every second block.

Exclusive Bus Lanes

Another strategy to improve travel times is to establish exclusive lanes for buses and HOV during the morning and evening peak travel periods. This approach would be reserved for SRAs with at least three traffic lanes in each direction (see Figure 1, which illustrates the "diamond lane" concept). A companion measure essential to the effectiveness of exclusive lanes is minimizing access points to the roadway by eliminating curb cuts wherever possible.

Figure 2 illustrates median bus lane treatment on an urban SRA route. If this treatment is adopted, automobile left turns from the urban SRA route should be permitted only at other SRA routes.

Lanes on urban SRA routes could also be dedicated to buses that travel in the reverse direction from the normal traffic flow. Figure 3 gives an example of a typical transit contra-flow lane. Contra-flow lanes have been used in downtown Chicago, and have been very effective in reducing both bus travel times and bus operating expenses. However, because of accident potential, transit contra-flow lanes are generally only recommended when additional lanes cannot be added easily because of space limitations and where reserve capacity is available in the non-peak direction.

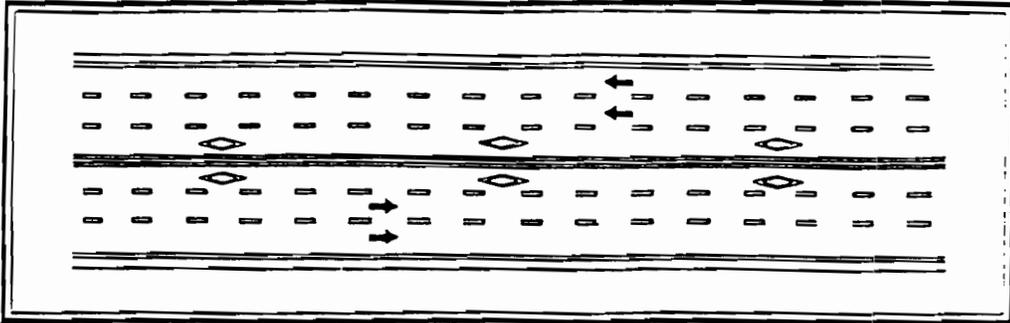


Figure 1 "Diamond Lanes"

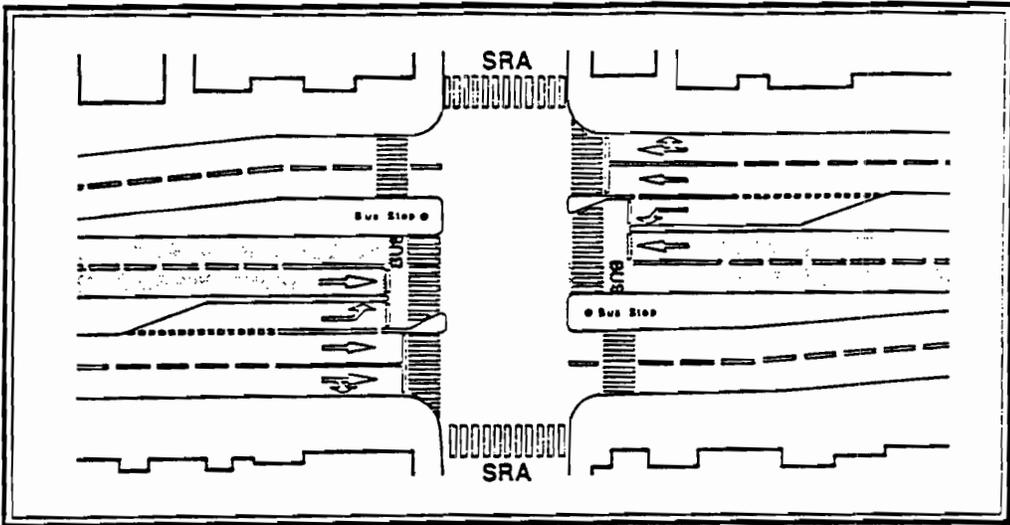


Figure 2 Center Bus Lane Treatment - Urban SRA

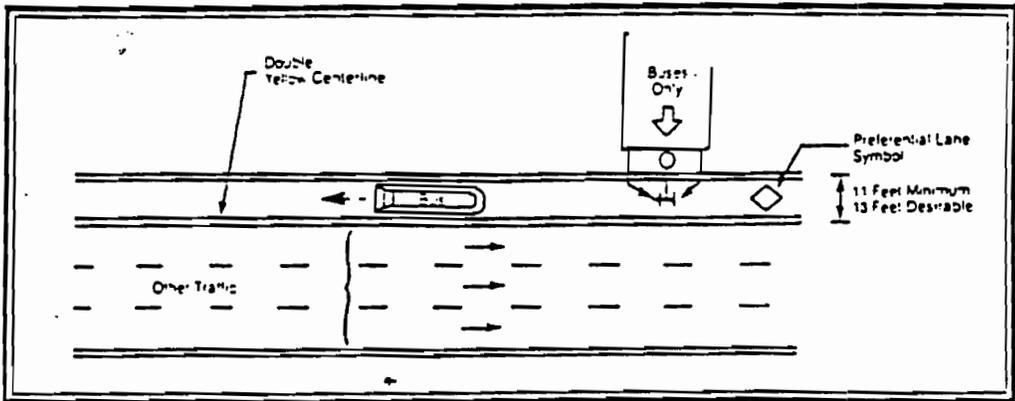


Figure 3 Typical Transit Contra-Flow Lane

Identifying Opportunities for Future Transit Facilities

Plans for SRA routes will consider opportunities to incorporate future transit and associated facilities such as:

- Busways
- High-Occupancy Vehicle (HOV) Lanes
- Ridesharing Facilities

Furthermore, SRA routes will consider incorporating future light - rail systems or circulator and shuttle systems where future plans already exist.

Maintaining Pedestrian Accessibility

Safe movement and accessibility are key issues for bicycles and pedestrians. The urban SRA corridors are likely to experience the greatest concentration of pedestrians and cyclists. The density of developments coupled with shorter trip-making encourage these travel modes. Additionally, the urban SRA routes experience heavy traffic volumes. In these urban areas, close parallel routes are usually present and continuous. These parallel facilities should be identified as bicycle routes so that the SRA routes can focus on their primary responsibility—carrying regional traffic. The design of most urban SRA routes already includes sidewalks for pedestrians and should continue to do so under maximum design. Handicapped access ramps for pedestrians also will be considered at intersections and curb cut locations.

On rural and suburban SRA routes, more options are available for handling pedestrian and bicycle access. For example, while right-of-way availability is still a critical issue, dense development immediately adjacent to the roadway may not be as common an occurrence as in urban areas. In certain cases provisions for bicycles and pedestrians may be accommodated within the SRA right-of-way itself. In these situations, alternative parallel routes may not always be available. The choice of how to provide access within the SRA corridor will be based on each unique situation. Where an existing bicycle and pedestrian facility already exists, the goal is to have a continuous system of bicycles and pedestrian facilities.

U.S. 41 Project Status

To date, about 30 percent of the study of U.S. 41 is complete. In September, IDOT and the consultant team held the first Advisory Panel Meeting. At this meeting, the existing conditions of the U.S. 41 corridor were reviewed with panel members. The second Advisory Panel Meeting is scheduled for late January or early February. Advisory Panel members will be contacted in the near future to set the date, time, and location. At this second meeting, the panel will discuss long-range alternatives for improvements to the U.S. 41 corridor. The third Advisory Panel Meeting is scheduled to take place in the spring of 1992, and a Public Hearing is scheduled tentatively for the summer of 1992.

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SRA SPOTLIGHT

U.S. 41 CORRIDOR ADVISORY PANEL

Relationship of Transportation Planning to Land Use and Development

Land Use and the SRA Plan

The success of today's transportation system and the viability of its future depend upon integrating arterial improvements with future development plans. Road improvements have the potential to stimulate land use changes, which in turn, can impact the efficiency of the transportation system. Improved accessibility, a common component of transportation system improvement plans, can influence land development, particularly when combined with other contributing factors such as land availability, market trends, local zoning and land use policies, water and sewer extension policies, and proximity to population centers.

The Strategic Regional Arterial (SRA) network, which consists of 1,340 miles of existing roads, encompasses 146 routes in Cook, DuPage, Kane, Lake, McHenry, and Will Counties. Within this network there are significant differences in the roadway environment that determine how various types of routes may function in the system. Land use impacts also will vary, depending upon whether the route traverses an urban, suburban, or rural area. In rural or suburban areas, there may be large tracts of vacant land that may undergo development, requiring coordinated access; in urban areas, maintaining or improving access and parking to existing developments are primary issues.

In high-demand areas, consideration of access management and design improvements are necessary to ensure maintenance of a good level of service. A key element of the SRA plan is to balance the goals of an arterial's function, to carry high volumes of long-distance traffic, with existing and future land use access needs. This may be accomplished by:

- Understanding future regional growth trends; and
- Understanding and accommodating local planning efforts.

Understanding Future Regional Growth Trends

By the year 2010, substantial increases in population, number of households, and employment are projected for the Chicago metropolitan region. Total population is projected to grow by 17.2 percent—from 7.1 million in 1980 to over 8.3 million by 2010. Population growth will be most significant outside of Cook County (which contains the city of Chicago) in the suburban counties. Each of the six counties, with the exception of Cook County, is projected to grow by nearly 50 percent over the 30-year period (1980 to 2010). The following table details population growth and percent change over the 30-year period.

Projected Population Change, 1980-2010				
County	1980	2010	Population Increase	Percent Change
Cook	5,253,700	5,567,400	313,700	6.0
DuPage	658,800	985,600	326,800	50.0
Kane	278,400	426,100	147,700	53.1
Lake	440,400	640,700	200,300	45.5
McHenry	147,900	235,800	87,900	59.4
Will	324,500	472,400	147,900	45.6
Region	7,103,600	8,327,900	1,224,300	17.2

Source: Northeastern Illinois Planning Commission

Changing demographics have altered household structure, bringing a dramatic increase in the number of single-person and single-parent-headed households, a factor that will continue to shape markets in the coming years. In the region, the number of households is projected to increase by 31.1 percent (774,000 new house-

U.S. 41 Corridor

holds) between 1980 and 2010—reaching over 3.2 million. Nearly half of the new households will be in Cook County, which will add close to 350,000 households. Lake, Kane, McHenry, Will, and DuPage Counties will see the greatest percent change—with households increasing by well over 50 percent of 1980 levels.

Projected Household Change, 1980-2010

County	1980	2010	Household Increase	Percent Change
Cook	1,879,400	2,228,000	348,600	18.5
DuPage	222,000	368,500	146,500	67.0
Kane	93,700	160,100	66,400	70.9
Lake	139,700	240,200	100,500	72.0
McHenry	49,100	87,800	38,700	78.8
Will	103,100	170,900	67,800	65.7
Region	2,486,700	3,260,700	774,000	31.1

Source: Northeastern Illinois Planning Commission

The region's employment is projected to increase by 34.6 percent by 2010—to over 4.5 million jobs. Cook, DuPage, and Lake Counties will continue to be the major employment centers in the region. Employment in DuPage County is projected to more than double over the 30-year time period—from 284,700 to 641,500 jobs. In Lake County, the number of jobs will increase from 162,000 to 306,700 between 1980 and 2010.

Projected Employment Change, 1980-2010

County	1980	2010	Employment Increase	Percent Change
Cook	2,697,000	3,249,100	551,100	20.5
DuPage	284,700	641,500	356,800	125.3
Kane	119,100	174,400	55,300	46.4
Lake	162,000	306,700	144,700	89.3
McHenry	47,000	73,200	26,200	55.7
Will	91,700	134,100	42,400	46.2
Region	3,401,400	4,579,100	1,777,700	34.6

Source: Northeastern Illinois Planning Commission

Understanding and Accommodating Local Land Use Plans

To provide an SRA corridor plan that addresses future development, comprehensive land use plans requested from each community have been integrated into the SRA transportation planning effort. From these land use plans, it is possible to make a better determination of:

- Potential future access locations
- Need for frontage roads, collector roads, etc.
- Optimal future traffic signal locations
- Potential for development of transit plans

In existing or future areas of intense commercial development, SRA corridor planning can focus on:

- Consolidating driveways, coordinating closely-spaced access points
- Mitigating impacts to on-street parking
- Optimal median types and dimensions (such as raised versus flush medians)

In residential areas, or near parks and schools, the corridor plan can focus on:

- Accommodating pedestrian activities
- Addressing aesthetic issues to minimize adverse visual impacts of corridor improvements

It is important to note that local units of government control land use and development. The SRA corridor plan attempts to coordinate future transportation needs based on community plans, but if land use policy changes, or if a land use plan is not implemented, the transportation system will be affected. Thus, a good transportation system depends upon implementation of effective land use controls and enforcement of land use plans.

Land Use Considerations in the U.S. 41 Corridor

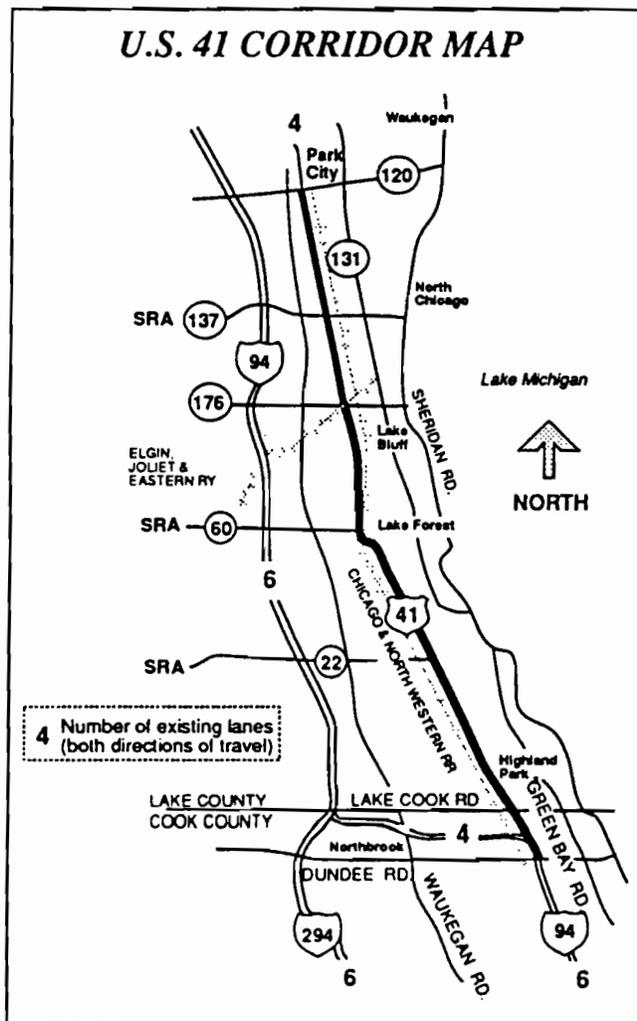
This SRA segment includes areas along U.S. 41 from Illinois Route 120 south to the I-94 interchange. The corridor is shown on the accompanying map. This segment of the corridor is classified as a "suburban" SRA.

U.S. 41 Corridor

Notable areas where land use is changing, or where trends imply future potential access concerns, are:

- From Illinois Route 120 to Illinois Route 176, industrial land use will continue to develop. In the vicinity of Illinois Route 137, some office development is occurring, and existing industrial development is expected to intensify.
- Through Lake Forest and Highland Park, the adjacent land use will remain predominantly residential.
- From Illinois Route 22 to Clavey Road, land use along the corridor will remain commercial and industrial.

Considerations for mitigating potential adverse impacts of future development could include providing access control, requiring additional right-of-way reservations for frontage roads, or providing enhanced access to the development or site.



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U.S. 41 Corridor Project Status

The SRA study of the U.S. 41 Corridor is temporarily on hold. It is anticipated that the study will resume shortly. At that time, the second Advisory Panel Meeting will be scheduled and panel members will be notified. At the second panel meeting, alternative improvements under consideration will be presented and discussed.

SRA SPOTLIGHT

U.S. 41 CORRIDOR ADVISORY PANEL

The Function of a Strategic Regional Arterial

For streets and highways in metropolitan areas to operate efficiently, the functions they are to perform must be classified, and the types of facilities that best accommodate these functions must be identified. Facilities designed specifically for a given type of movement suit that purpose best; matching use and design helps to ensure consistent, uniform flow, which contributes to operational efficiency and safety.¹ An area's street and highway system can be classified schematically by relating the proportion of *movement* function to *access* function. This concept is illustrated graphically in the accompanying chart. At its functional extreme, a local access or residential street is devoted almost entirely to providing access to abutting properties; the freeway, on the other hand, serves only the movement function.

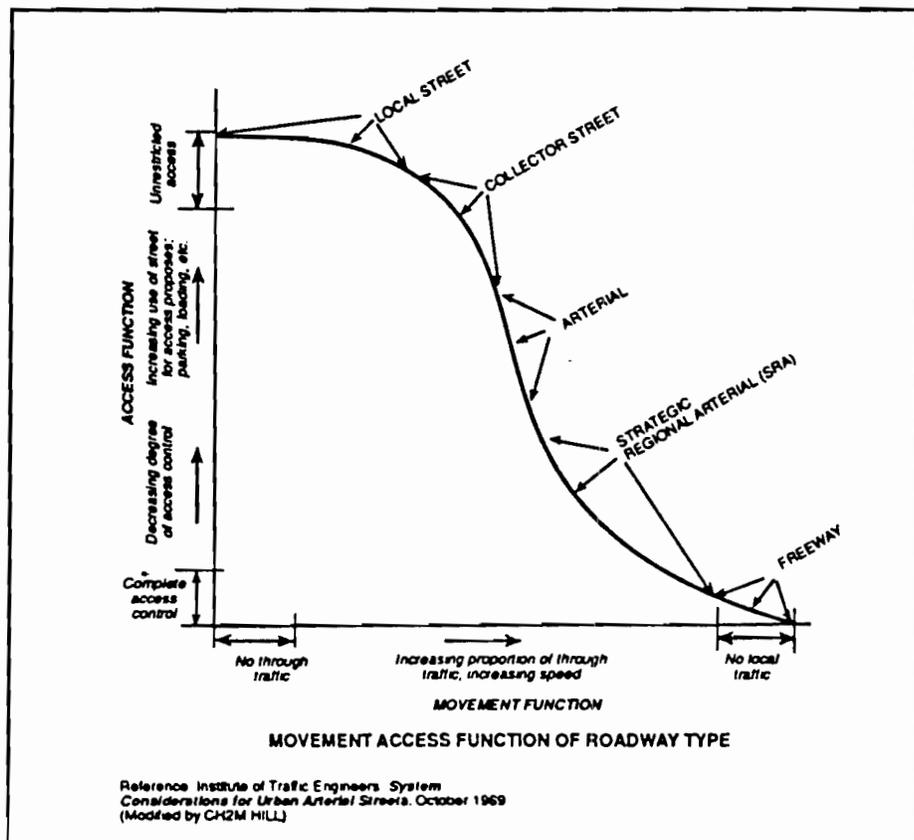
The Illinois Department of Transportation (IDOT) has designated 1,340 miles of existing roadways in northeastern Illinois as *Strategic Regional Arterials* (SRAs). This functional classification falls between the general "arterial" category and "freeway" class.

SRAs are intended to provide more of the movement function, and less access to abutting land uses, than

"arterial" roadways. Also, on SRAs trip lengths will be longer and movement will be faster than on other arterial or collector streets. However, despite the focus on accommodating the movement function, considering the access function also is vital because SRA routes pass through numerous villages and cities.

SRA Benefits

Communities affected by SRAs often ask: "What is achieved by the SRA system?" or "How will SRA improvements benefit my community?" The remainder



¹Gruen Associates. *Traffic Circulation Planning for Communities*. 1974.

of this newsletter addresses and provides answers to these questions.

Local communities benefit from SRA designation and planning by realizing the following improvements:

- Enhanced traffic safety
- Improved traffic operations
- Reduced environmental impacts
- Reduced neighborhood impacts
- Increased local land use and transportation planning

These benefits may result from physical improvement of SRA routes and/or the overall planning process leading to implementation of the SRA concept.

Improvement Benefits

Benefits in safety, traffic operations, and the environment result directly from SRA improvements to the number and arrangement of driving lanes, traffic and access controls, and lane arrangements at intersections.

Safety

Driver and pedestrian safety on SRAs may be enhanced by improving intersections and medians, by controlling access, and, in some instances, by restricting or prohibiting parking.

Intersection Improvements

Research shows that adding a channelized left-turn lane at an intersection reduces accidents significantly. Although adding turning lanes is the most obvious example of a physical intersection improvement, coordinating traffic signal timing between several intersections or revising signal phasing, which are less obvious, also are important improvement considerations. Separate signal phases for pedestrians and cyclists also may be implemented to enhance safety on a SRA.

Median Improvements

Providing a raised or a painted median for a SRA separates opposing traffic flows and affords a "refuge" for pedestrians crossing the street. Two-way left-turn lanes that allow left turns at all locations along the SRA

have been shown to result in accident reductions of 25 percent or more.

For higher-speed rural facilities, dramatic safety improvements result when a four-lane divided highway can be implemented (versus a two- or four-lane undivided roadway).

Access Management

Frequent access drives along a SRA—with consequent turns into and out of roadside development—are another source of accidents. Research shows that restricting the frequency of driveways, or restricting left turns at driveways at a minimum, will result in a lower accident rate. Improved access management, which goes along with development of the SRA system, also can enhance driver and pedestrian safety.

Parking Regulation

Eliminating or restricting curb parking on some portions of the SRA system will not only promote better traffic flow, but will eliminate accidents that may be attributed to parking and "un-parking" maneuvers. In order to support local activity and to satisfy parking demand, parking spaces that are removed from the curb usually will need to be replaced in off-street facilities, where parking can be managed easily and accessed safely.

Traffic Operations

Along with safety enhancements, physical improvements to the street system such as adding lanes, providing a median, or controlling access also promote better traffic operations. Drivers will be able to complete their journey on a SRA with fewer starts and stops, and at consistent, acceptable, and safe speeds.

Environmental Impacts

Good traffic operations produce an important benefit: reduced fuel consumption and a resultant air quality improvement. Vehicles travelling smoothly emit less pollutants than vehicles under congested flow conditions. In the Chicago metropolitan area, which has been designated a "severe non-attainment area" for air quality, maintaining smooth, efficient traffic operations is critical. Motor vehicles contribute as

U.S. 41 Corridor

much as 60 percent of ozone-forming pollutants—a significant component of the smog that occurs on hot days. Pollutant emissions are a particular problem in areas of congestion; high emissions result from frequent stops, long periods of vehicle idling, and very low speeds. More efficient traffic flow on the SRA network, therefore, will help the Chicago area to meet its clean air objectives.

System Benefits

Along with direct safety, operations, and environmental benefits that will result from SRA improvements, there also are several important systemwide advantages to be gained from the SRA program.

Neighborhood Impacts

Ultimately, the objective of designating functional classifications for the street and highway system is to ensure that the specific roadway category is used by the type of driver for which it is intended. When “through” traffic intrudes into residential neighborhoods, the blame almost always can be placed on inadequacies in the arterial system (which the drivers should have used for those trips instead). A key objective of planning and providing an effective SRA system is to afford and to promote a viable travel alternative and, consequently, to rid local streets of unnecessary and unwanted through traffic. The result will be safer, quieter, cleaner, and generally more pleasant residential neighborhoods.

Business District Impacts

Many SRAs pass through local business districts. Optimizing traffic flow into and through the business district at safe speeds can help the district to retain its vitality and to reinforce consumer attraction. It is important to strike a balance between the needs of shoppers and pedestrians, and the needs of drivers approaching and passing through the business district. Relocation of on-street parking, special attention to transit stops, and selected intersection improvements all serve to maintain and to enhance both accessibility to the business district (and improve SRA operations).

Land Use and Transportation Planning

The present, ongoing SRA studies fall under the category of feasibility studies or advance planning. The various improvements to the SRA system that are proposed in these plans will be implemented in increments over a relatively long time span. The plans take on added importance, therefore, as the framework for a comprehensive long-range transportation program.

Once the number of traffic lanes and access controls for a particular SRA have been determined, local communities along the route will be able to implement plans and regulations to preserve the required right-of-way, to plan for access to future development, to provide adequate setbacks, and to support appropriate zoning. Because each SRA route penetrates numerous communities, a long-range comprehensive plan also affords local agencies an opportunity to cooperate and coordinate their land use and transportation planning efforts, which will facilitate implementation.

SRA Benefits for U.S. 41

The SRA plan for the U.S. 41 corridor should produce a range of benefits to the public and the local communities it serves. Alternatives for improvement are still under consideration. Recommended improvements will be designed to improve the existing safety and operation of the corridor, to relieve congestion, to provide greater capacity, to improve air quality, and to minimize environmental and other potential impacts.

Corridor Planning Status

The U.S. 41 Corridor Advisory Panel met on September 12, 1991. Since that meeting, at which existing conditions and concerns were presented to the panel, the SRA study of U.S. 41 has been on hold temporarily. It is anticipated that the study will resume shortly, at which time the second advisory panel meeting will be scheduled and panel members will be notified. At the second panel meeting, alternative improvements under consideration will be presented and discussed.

SRA SPOTLIGHT

U.S. 41 CORRIDOR ADVISORY PANEL

Environmental Considerations in SRA Transportation Improvement Planning

Discussion of Issues

In planning and implementation of roadway design projects, engineers and officials frequently face environmental considerations that complicate the projects' standard engineering aspects. Environmental considerations play a significant part in engineering design decisions, as highway designers and planners deal with the stringent requirements of various environmental regulatory agencies, and state and local governments (see table on page 2). Typical roadway design environmental issues include air quality, wetlands, and impacts to both sensitive land uses and to publicly-owned land (socioeconomic impact and potential land use change to the area also are considered, as discussed in Newsletter No. 4). Plans to avoid, minimize, or mitigate such impacts are integral to the design of a project and, ultimately, affect engineering solutions.

As part of the SRA project, an environmental analysis component has been conducted to inventory existing conditions and to identify environmental and land use characteristics that may conflict with, or be affected by, proposed roadway improvements. This initial inventory and identification would be supplemented by detailed analysis of these environmental effects as individual projects proceed to more advanced design. This newsletter reviews notable environmental and land use issues typically encountered in transportation projects, and discusses how they impact design decisions.

Wetlands

Wetlands are areas that are inundated or saturated by surface or groundwater, and support a variety of plant and animal species adapted to these conditions.

Wetlands generally include swamps, marshes, bogs, and similar areas, and:

- Filter pollutants naturally;
- Enhance water quality;
- Provide natural watershed storage;
- Control flooding;
- Reduce erosion;
- Provide habitat for bird and animal life; and
- Provide aesthetic, recreational, educational, and socioeconomic benefits.

Because of these values, wetlands are protected by a variety of regulations at the local, state, and federal levels. Provisions for wetland protection, restoration, or replacement often are required before a project can proceed.

The presence of wetlands in the vicinity of road improvements influences location and design decisions. If possible, the project must *avoid* damage to wetlands. If avoidance is impractical, the project then must attempt to *minimize* adverse environmental impacts. Lastly, if wetland losses are unavoidable, the project's owner must arrange to *compensate* for destroyed or degraded wetlands through a process of restoring damaged wetlands or creating new ones.

Parkland

Public parkland is protected by federal regulatory provisions, and special effort must be made to preserve and protect such lands. These provisions apply to public recreation areas, including forest preserves; conservation districts; publicly-owned golf courses; state, county, or local parks; and sites and structures listed in the National Register of Historic Places.

Projects that would acquire or adversely affect public recreation land require additional federal

... continued on page 3

Federal Legislation for Resource Protection

Legislation	Resource Affected	Responsible Agency	Summary
<i>Section 4(f) Evaluation</i>	Public park and recreation land; historic resources	Federal Highway Administration	Requires consideration, consultation, and alternative studies to determine that there are no feasible and prudent alternatives to the use of land from a publicly-owned park, recreation area, or wildlife and waterfowl refuge of significance, as determined by the official officer having jurisdiction. Also must address measures to minimize harm. Applies to properties eligible for the National Register of Historic Places.
<i>Section 6(f) of the Land and Water Conservation (LAWCON) Act</i>	Public recreation land developed with LAWCON funding	Federal Highway Administration	Recreation land purchased or improved under the LAWCON Act cannot be used unless replacement land of equal value, use, and size can be supplied. Precedes completion of the Section 4(f) Evaluation.
<i>Section 106 of the Historic Preservation Act</i>	Cultural resources	Advisory Council on Historic Preservation	Requires evaluation of the proposed project's effect on properties included, or eligible for inclusion, in the National Register of Historic Places, and allows the Advisory Council a reasonable opportunity to comment prior to project approval. Requires documentation of special effort to avoid or to minimize harm to any landmark that may be affected adversely. Precedes completion of the Section 4(f) Evaluation.
<i>Section 404 of the Clean Water Act</i>	Waterways and wetlands	U.S. Army Corps of Engineers and U.S. EPA	Requires permit for discharge of dredged or fill materials into jurisdictional waters of the United States, including wetlands. These waters include navigable waters and their tributaries, interstate waters, lakes, and intermittent streams.
<i>Wetlands Executive Order 11990</i>	Wetlands	*Federal Highway Administration	Directs federal agencies to avoid unnecessary alteration or destruction of wetlands, and requires implementation of actions to minimize the loss or degradation of wetlands affected by a federal project, or by any project that receives federal funding.

continued from page 1 . . .

regulatory review and approval, and must include all possible measures to minimize harm. These measures might include replacement of lands, replacement of facilities impacted by the project, restoration of disturbed areas, incorporation of design features to minimize or avoid impact, or monetary compensation.

Sensitive Land Uses

Sensitive land uses also are a factor in road improvement and design decisions. Typical sensitive land uses include hospitals, schools, cemeteries, police and fire departments, and other community facilities. Emergency access is one consideration; roadway changes can impact access to and from facilities such as hospitals and police and fire departments. Noise standards (moving a roadway closer to buildings may exceed acceptable noise levels) and business and residential relocation issues are other factors to be considered. Finally, effort should be made to avoid impact to these sensitive facilities because they are integral to the physical and social fabric of the community. Whenever possible, adjustments in road design should be made to avoid disrupting such facilities.

Air Quality

Improved traffic operations produce an important benefit: reduced fuel consumption and a resultant air quality improvement. Vehicles traveling smoothly emit less pollutants than vehicles under congested flow conditions. In the Chicago metropolitan area, which has been designated a "severe non-attainment area" for air quality, maintaining smooth, efficient traffic operations is critical. Motor vehicles contribute as much as 60 percent of ozone-forming pollutants—a significant component of the smog that occurs on hot days. Pollutant emissions pose a particular problem in areas of congestion; high emissions result from frequent stops, long periods of vehicle idling, and very low speeds. More efficient traffic flow on the SRA network, therefore, will help the Chicago area to meet its clean air objectives.

How Do These Environmental Considerations Affect Roadway Design?

Each of these environmental considerations contributes to the basic SRA improvement concept and affects design solutions. Engineering design is tailored to avoid or minimize effects by:

- Adjusting the alignment (e.g., focus widening to one side of the facility or the other; realign the roadway to avoid an impact)
- Incorporating retaining walls to minimize the amount of right-of-way needed
- Adjusting cross-sectional features, such as median width, to minimize the right-of-way needed
- Implementing curb-and-gutter and closed drainage systems to minimize right-of-way taking

In some cases, the presence and location of sensitive or protected land uses affect the basic SRA corridor concept. In keeping with overall planning objectives, the ability to implement a full, desirable SRA cross section must be balanced against the environmental impacts that could result. Decisions to "downsize" a corridor segment because of environmental concerns have been made on many SRA corridors.

Environmental Concerns and SRA Planning for U.S. 41

The study to determine recommended improvements for U.S. 41 will consider numerous environmental issues, including wetlands, parkland, forest preserves, sensitive land uses etc. Alternatives will attempt to avoid, or to minimize and/or mitigate, effects to these and other environmental concerns along the U.S. 41 SRA corridor.

From Illinois 120 to south of Illinois 176, the primary environmental issues concern wetlands and their proximity to U.S. 41. Wetlands are particularly predominant south of Illinois 120, north of Illinois 137, and near the Elgin, Joliet, and Eastern Railway crossing.

U.S. 41 Corridor

From Illinois 176 to south of West Park Avenue, spot locations exist where wetland areas are close to the roadway. In addition, sensitive land uses are adjacent to the corridor. Notable land uses of concern are the Lake Forest Hospital north of Deerpath Avenue, a church at the intersection of Deerpath Avenue and U.S. 14, and a former landfill south of the Illinois 22 intersection. Buena Park, at the U.S. 14 intersection of Old Elm Road, also will affect alternatives at this location.

South of West Park Avenue to I-94, environmental concerns are primarily associated with wetlands and sensitive land uses. Wetlands are located south of the Deerfield Road interchange, and sensitive land uses along this segment include the Sunset Valley Golf Course and the Chicago Botanical Gardens.

These environmental concerns will have a direct influence on the alternative development process.

Corridor Status

The U.S. 41 corridor advisory panel last met on September 12, 1991. Since that meeting, at which existing conditions and concerns were presented to the panel, the SRA study of U.S. 41 has been temporarily on hold. In the past month, the study has restarted, and we anticipate scheduling the second advisory panel meeting late in the fall. Panel members will be notified of the date, time, and location in advance of the second panel meeting. At the second advisory panel meeting, alternatives under consideration will be presented and discussed.

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SRA SPOTLIGHT

U.S. 41 CORRIDOR ADVISORY PANEL

SRA Project Implementation

Throughout the Strategic Regional Arterial (SRA) planning process, many questions have arisen about the timing of improvements, the need for and scope of further work, and opportunities for continued public involvement. This newsletter is intended to address the process by which SRA plans are translated to actual transportation projects.

Background

The planning process actually began over 5 years ago with the study and designation of the 1,300-mile SRA system. The Chicago Area Transportation Study (CATS), Illinois Department of Transportation (IDOT), and Northeastern Illinois Planning Commission (NIPC) were involved in this effort. Local governmental input and public hearings were an important aspect of the SRA system designation.

SRA Corridor Planning Studies— “Pre-Phase I”

Following the designation of the system, IDOT proceeded with corridor-specific planning work. This work is the subject of the ongoing SRA study.

The work is referred to as “Pre-Phase I” because of its unusual nature. Projects typically proceed from a needs identification directly to Phase I studies (described below). In the case of SRA planning work, IDOT is developing longer-range plans for the SRAs to serve as a framework for future Phase I efforts. This approach has a significant advantage—it establishes an overall plan (including right-of-way, access control, and other features) well in advance of Phase I work and actual construction, which may be 10 years or more in the future. This early activity enables local communities to conduct land use and transportation planning with knowledge about the eventual future of the SRA.

The SRA studies, once completed for the entire SRA system, also will provide valuable information on programming needs.

The SRA corridor studies include: data collection, development and testing of alternatives, coordination with local agencies, environmental screening, improvement recommendations, and a public hearing. Issuance of a final corridor report by IDOT completes this effort. Once issued, the SRA plan represents a statement of intent regarding the ultimate cross section, right-of-way needs, intersection and interchange options, and access features.

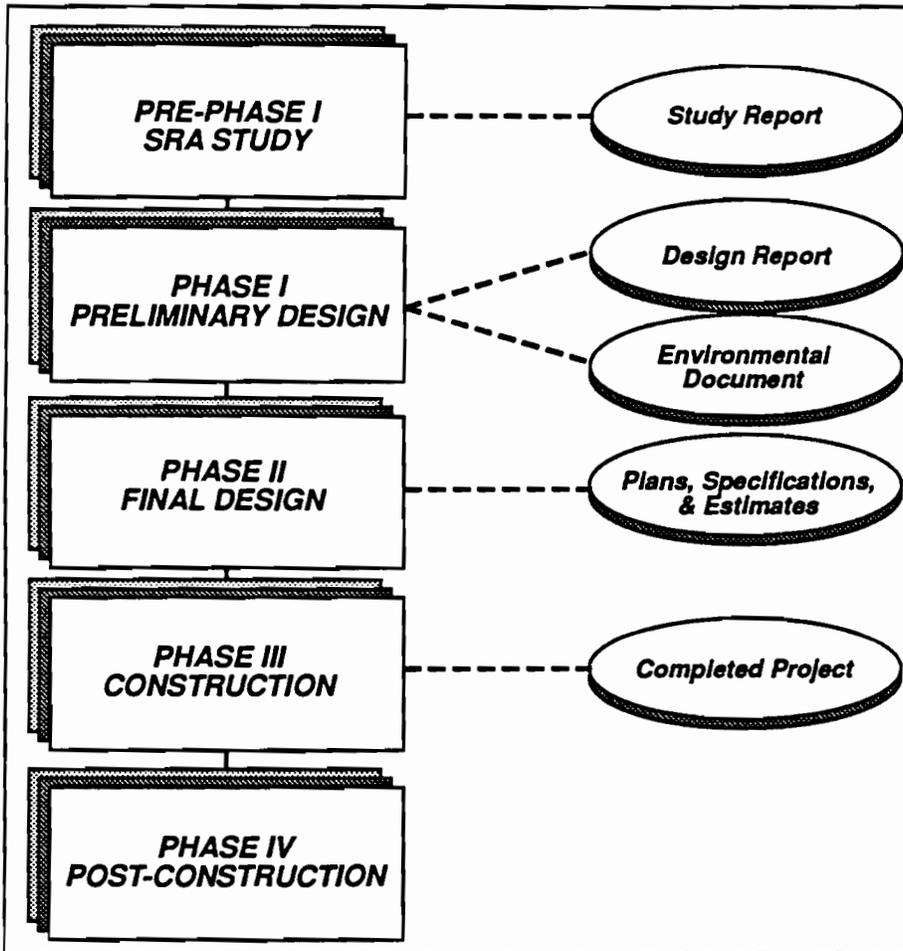
Programming SRA Improvements

Although each SRA report identifies project priorities in general terms, the SRA “Pre-Phase I” effort does not develop a specific timeframe for SRA projects. IDOT, with input from local units of government, continually develops and executes a 5-year program of transportation projects. It is anticipated that segments of SRA corridors will be placed on the program as specific needs arise and funds are made available.

For state routes, once an SRA improvement is included in IDOT's 5-year program, the ensuing implementation steps follow the process illustrated in the accompanying figure (see following page). For SRAs that are not state routes, a similar process would be followed under the appropriate county or municipal jurisdiction.

Phase I Studies

Phase I, or the Preliminary Design phase, is the next step in the implementation process following this SRA study. The engineering and environmental analyses begun in the Pre-Phase I study would be carried one step further. The recommended improvement plan would be developed in more detail, with major design features



Phase II Studies— Final Design

Phase II, the Final Design phase, would commence upon approval of the engineering and environmental products of Phase I. Final plans, specifications, and estimates would be prepared for the proposed improvements, community coordination would continue, and methods would be developed to mitigate any environmental impacts. Identification and acquisition of right-of-way also occurs in this phase of work. Depending on the size and complexity of a project, Phase II can take from 1 to 3 years to complete.

Phases III and IV— Construction and Post-Construction

Phase III and Phase IV, construction and post-construction activities, follow the design phase. Monitoring of environmental effects and traffic operations is an important element of the post-construction program.

The question is often asked, "How long will all of this take?" Unfortunately, there is no clear answer. The time between the end of any phase and the beginning of the next phase depends on the availability of funds, and the perceived importance of the project relative to other projects. The timing of programming a project and moving it through the various phases is also a function of the extent of local governmental support for the project.

Considering the total length of routes comprising the SRA system (over 1,300 miles) and the magnitude of improvements that are being recommended, it is a virtual certainty that the implementation period would cover a fairly long timespan after completion of the SRA study.

specified, and a Design Report would be prepared. An environmental report (fulfilling the Illinois and National Environmental Policy Act requirements), also would be prepared. This report would include detailed studies of air and noise impacts, identification of specific wetland and other environmental impacts, and development of mitigation plans to accommodate the impacts.

A program of public involvement represents an important aspect of Phase I studies. This program typically would include public information meetings, newsletters, press releases, and meetings with communities and interest groups. Prior to final project approval, Public Hearing(s) also would be held.

Phase I studies entail comprehensive and detailed engineering and environmental studies. For most projects, a 2- to 3-year time period is required to perform all Phase I work.

U.S. 41 Corridor

In any event, it is clear that once a specific project is identified by IDOT or others, it is generally a minimum of 5 years, and often as many as 8 years, before the project is completed and operational.

SRA Planning Activities for U.S. 41

Since the last newsletter, there has been very little activity on the U.S. 41 SRA study. However, the study has restarted as the last newsletter reported. It is anticipated that the second Advisory Panel meeting will be scheduled for sometime in the spring of 1993.

At the second Advisory Panel meeting, alternatives under consideration for the U.S. 41 corridor will be reviewed with panel members. Improvements under consideration will consist of broad, system-type improvements such as basic number of lanes and interchange or intersection considerations. Comments received at the second panel meeting will be used as input to development of the detailed recommended improvement plan.

After the second panel meeting, the recommended plan will be developed. The Draft Final Report will be distributed to members of the Advisory Panel for their review. A third panel meeting will be scheduled to review and to discuss the recommended improvements for the corridor and revisions to the Draft Final Report.

A Public Hearing will be held after the third Advisory Panel meeting. At this Public Hearing, which will be held in Lake County, comments will be solicited from the public. These comments, and the comments received at the third Advisory Panel meeting, will be used to shape the final recommended plan and SRA report for the U.S. 41 corridor.

.....
SRA SPOTLIGHT
.....

Publisher:
The Illinois Department of Transportation

Editor:
CEMHILL

For:
The Strategic Regional Arterials Plan

Advisory Panel

Coordinator:

Mark Schmidt
Lake County Division of Transportation

Panel Members:

Highland Park - Daniel M. Pierce, Mayor
Lake Bluff - N. David Graf, President
Lake Forest - Charles F. Clarke, Jr., Mayor
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Superintendent of Highways
Lake County - Martin G. Buehler,
Director of Transportation

**Public Hearing
Meeting Responses**

TO: Illinois Department of Transportation

COPIES: Rich Starr/IDOT
Tim Neuman/CH2M HILL

FROM: Dick Stafford/CH2M HILL

DATE: May 31, 1994

SUBJECT: U.S. 41 SRA Public Hearing

PROJECT: CHI 31495.01.A5

This memorandum summarizes and/or paraphrases written and oral comments taken by IDOT, the consultant team staff, and the court reporter at the U.S. 41 public hearing held on December 1, 1993. Responses to the comments are delineated in bold following the appropriate comments.

Mr. Martin Buehler-Director of Transportation of Lake County

The county opposes the proposed relocation of the existing North Shore Bikepath to the north side of Illinois 176 through the Illinois 176 and U.S. 41 interchange. The county recommends the bikepath cross U.S. 41 south of the interchange.

How the bikepath crosses U.S. 41 will ultimately be a function of the interchange alternative selected at this location. A number of alternatives could be considered for the bikepath crossing of U.S. 41/Illinois 176, including at-grade or grade separated crossings. Any at-grade crossing should be a well marked signalized intersections. Costs, benefits and impacts of the various alternatives must be investigated before any decision is made. During Phase I studies of this location the solution to the bikepath crossing will be more fully studied and a recommendation will be developed.

Mr. Frederick G. Wacker, III-President Village of Lake Bluff

The following are concerns, comments and questions made by the Village of Lake Bluff:

At the intersection of Illinois 176 and U.S. 41 village approval has been given to a car dealership in the southeast quadrant and Liquid Controls is operational in the southwest quadrant. Given the value of these developments the interchange at Illinois 176 and U.S. 41 in the Draft-Final Report should be re-evaluated.

MEMORANDUM

Page 2

May 31, 1994

The Final Report has been revised to show various alternatives which reduce the impacts to these two properties. Note, however, some right-of-way acquisition will be required in order to improve this interchange.

There are three large diameter utility lines running under U.S. 41. The interchange configuration shown would likely require modification. Costs associated with these utility lines should be identified as part of the preliminary evaluation of alternatives.

It is conceivable that all alternatives shown in the Final Report will impact these lines. Actual costs of relocating/replacing utilities will be part of Phase I studies. Furthermore, trade-offs and cost-benefit analyses will be performed during Phase I studies.

The impact of widening Illinois 176 east of the C&NW Railroad are unspecified, etc.

The intent of the plan is not to change the typical cross section of Illinois 176. The intent of the plan is to provide adequate intersection capacity at the ramp terminal intersections with Illinois 176. The proposed plan will be revised to clarify the intent of the plan.

It is unclear how property owners currently with direct access to U.S. 41 will benefit by restricting access to ramps from Illinois 176.

Access off of U.S. 41 is restricted and limited to the ramps from Illinois 176 to ensure safe exiting and entering from the interchange. It is not an acceptable engineering design to permit local access off interchange ramps or the ramp tapers. Restricting access to U.S. 41 was not recommended to "benefit" or negatively impact property owners. The recommendation was developed to ensure safe access and egress to/from the interchange.

The level of detail presented in the SRA reports are planing level and do not reflect detailed engineering. Future Phase I studies will better identify impacts, benefits and costs.

The U.S. 41 plan reflects an increase in the width of the existing right-of-way along the east side of U.S. 41 north of Illinois 176.

The intent of the proposed plan is to indicate the need to acquire additional right-of-way in order to develop adequate ramp tapers and the six lane cross section. In addition, the local access road along the west side of U.S. 41 serving the fire station and other land uses will require additional right-of-

MEMORANDUM

Page 3

May 31, 1994

way. The intent of the plan was not to acquire the office building along the east side of U.S. 41. Based on field investigations it appeared as though impacts to existing land uses on the east side would be less than on the west side. Therefore the right-of-way acquisition is shown along the east side. If in fact 10 feet of additional right-of-way cannot be acquired, adjustments could be made to the cross section to minimize the right-of-way requirements. Future studies will determine ultimate right-of-way requirements.

Has the Lake County Department of Transportation commented on the bikepath crossing of U.S. 41?

Yes. See the response to the Lake County comment above.

What is the likely construction schedule and source of financing for this project.

There has been no construction schedule established for any of the SRA routes. The design year for planning purposes has been established as the Year 2010. No priorities have been established for SRA projects. Because the SRA system consists of more than 1300 miles of arterials, priorities for improvements on the SRA system must eventually be established.

No funding has been programmed for any SRA improvements. Future funding sources are yet to be determined, but will likely be a combination of Federal, State and local funding.

Rhett W. Butler, Mayor-City of Lake Forest

Lake Forest submitted a formal position paper documenting their concerns and questions. A response to their position paper was submitted to the City. Responses to the position paper are attached at the end of this memorandum.

Joseph A. Vanderwerff-Village Engineer City of North Chicago

The city's long range plans call for development of the State-owned property south of Illinois 137 and west of U.S. 41. The location of the proposed signal south of Brompton Avenue would not be conveniently located to serve future development. The city would prefer that the signal be located at either Bittersweet or Brompton Avenue.

The distance between Bittersweet Avenue and the signal at Illinois 137 does not meet SRA criteria for signal spacing. The spacing between Brompton Avenue and Illinois 137 meets signal spacing criteria of 1/4 mile. The

M E M O R A N D U M

Page 4

May 31, 1994

proposed plan, however, does not recommend a signal be planned at this location. The location proposed in the SRA report (0.73 miles south of Illinois 137) was selected to be compatible with a possible future diamond interchange at Illinois 137. A future signal spaced 0.73 miles from Illinois 137 would provided adequate distance to develop interchange ramps and ramp tapers. The signal would ultimately be placed 1/4 mile from the end of the ramp tapers.

Drainage in the area of Brompton Avenue and U.S. 41 is poor. We request that the proposed plan include the necessary improvements to drainage.

The SRA report has documented the existing drainage concerns in this area. As stated in the SRA report right-of-way above and beyond that required for roadway improvements may be required for drainage. Determination of drainage needs would required a more detailed engineering study and would be evaluated in future IDOT Phase I studies.

The city is concerned over the safety of the Illinois 137 and U.S. 41 intersection. It is requested that this study consider the feasibility of providing safety devises at this intersection.

It is beyond the scope of this planning study to do a feasibility study of various safety devises at this location. As part of this SRA study accident data were obtained from IDOT files for 1987, 1988 and January to October of 1989. Analysis of this data did not identify an existing safety problem. Current accident data may however, identify a problem. The final SRA report will note the need for investigation of this intersection.

The city is concerned over the third through lane along U.S. 41 at the approach to the Illinois 137 intersection. Motorists are using this lane as a by-pass lane, creating a hazardous situation. It is our understanding that the proposed plan will eliminate this condition.

The proposed SRA plan recommends developing a continuous six lane cross section (three lanes in each direction of travel). This would eliminate the existing "by-pass" condition described above.

A desire was expressed by the City Council for the construction of an overpass at Illinois 137 similar to what was constructed at Clavey Road.

MEMORANDUM

Page 5

May 31, 1994

A future interchange at U.S. 41 and Illinois 137 will be identified in the final SRA report as a "possible" post 2010 improvement.

Other Comments Made by the General Public

A comment was made that the bikepath crossing U.S. 41 at Illinois 176 should be grade-separated either through tunnels or bridges rather than crossing at grade through the proposed signalized intersections.

The treatment of the bikepath across U.S. 41 will depend on the ultimate configuration of the interchange at Illinois 176. Alternatives could include crossing at-grade or above or below grade. The ultimate treatment of the bikepath crossing will be designed with the intent to minimize the number of potential conflict points with vehicle traffic while maintaining a reasonable cost effective solution. The final determination would be made during Phase I studies of this interchange.

Four businesses along the west side of U.S. 41 between Old Mill Road and West Park Avenue expressed their concerns regarding the two alternatives presented. Concerns include right-of-way acquisition and the loss of frontage and the negative impacts associated with the frontage road behind the commercial properties.

Because of the magnitude and spacing of access points to land uses in this area it is essential that the Ultimate SRA plan provide for safe access into these land uses while providing the necessary through capacity required along U.S. 41. To accomplish this two alternatives were developed. The first alternative would provide a continuous right turn lane on the outside of the through travel lanes. The estimated additional right-of-way required would be a maximum of 15 feet. from the west side of U.S. 41. Phase I studies will determine the exact right-of-way needs, and will further study the impact to adjacent land uses. During Phase I studies alternatives that minimize impacts (such as reducing the inside shoulder) would be evaluated against impacts to land uses. The level of design required to investigate these various alternatives is beyond the SRA study.

The second alternative would be to develop a frontage road behind the existing businesses parallel and adjacent to the Commonwealth Utility Line. This alternative is considered an ultimate, long range alternative requiring the cooperation and coordination of the Utility, the railroad, the local businesses, Highland Park and IDOT.

MEMORANDUM

Page 6

May 31, 1994

If the "jug-handle" is removed at the intersection of Illinois 22 and U.S. 41 and replaced with a right turn lane what would be done with the left over right-of-way?

Phase I studies would determine future right-of-way requirements. At that time if excess right-of-way exists, what to do with it would be determined.

Three comments were received concerning noise and air quality impacts associated with the widening of U.S. 41. Concerns were expressed that no consideration was given to mitigation of these impacts.

As part of the Phase I study process an environmental assessment (EA) must be performed to address environmental concerns. A key element of the EA is to assess impacts of noise and air quality as a result of the improvement. In addition, techniques for mitigating identified impacts would be developed.

A comment was made that there is over 150 feet of vacant, inaccessible right of way between U.S. 41 and the C&NW Railroad from Deerpath Road south to Illinois 60.

This strip of right-of-way is primarily the property of the C&NW railroad. This existing vacant land is used as embankment for the railroad and drainage for U.S. 41. In an effort to maintain open drainage and minimize the need for increased detention/retention it is desirable to maintain the ditches and open drainage on this side of the roadway. Therefore, symmetrical widening is recommended.

Concern was expressed that the inadequate sight distance to the signalized intersection at U.S. 41 and Illinois 60 has not been addressed. Future bus stops and park and ride facility at this location would further exacerbate this problem.

The horizontal alignment of U.S. 41 on the approach to this intersection has been relocated and adjusted to improve and increase the sight distance to the signal at Illinois 60. The location of bus stops or park and ride facilities would be located such that they do not impact sight lines to the intersection.

A comment was made that a "signal free interchange" should be planned and installed at Illinois 60 and U.S. 41 to accommodate future traffic demand.

An interchange of any kind at this location would require substantial right-of-way and construction cost. Significant impacts and right-of-way acquisition would result. Based on the CATS forecast traffic demand and the proposed

MEMORANDUM

Page 7

May 31, 1994

improvements to intersection capacity and horizontal alignment, adequate design year operations are predicted.

A comment was made questioning the feasibility of local access roads in areas where existing drainage is poor.

The appropriate location for future access roads would be determined during Phase I studies. The intent of the SRA plan is to document the need and approximate location for such roadways. Drainage needs including detention ponds would also be identified during this phase.

Concern was expressed that by continuing the six lane section north of Clavey Road northbound traffic may not understand that they left the freeway. This may result in a serious accident problem at the signalized intersection of West Park Avenue, similar to the accident problem that was at Clavey Road before the interchange was constructed.

By replacing the signalized intersection at Calvey Road with a grade-separated interchange, the distance to the first downstream signalized intersection has increased substantially. The increased distance is used to warn and alert drivers that they no longer are traveling on a freeway and they are approaching a signalized intersection. This has significantly reduced the accident experience along this stretch of U.S. 41.

Adding additional lanes to U.S. 41 will encourage more traffic to use U.S. 41.

Expanding U.S. 41 to six lanes (three lanes in each direction of travel) would be implemented as part of a long range transportation plan for the region. The long range plan includes improvements to other roadways in the area, the extension of Illinois 53 and other transit improvements. Therefore, it is not anticipated that traffic would divert from an existing facility to U.S. 41 as a result of U.S. 41 improvements.

A comment was made concerning the right-of-way in the southwest corner of U.S. 41 and Illinois 176 and the resulting conflict to the car dealership and manufacturing company.

The Draft-Final Report has been revised to show a range of alternatives at this location. The right-of-way requirements at this location have been reduced in all alternatives. However, some right-of-way acquisition will be required in order to improve this intersection.

M E M O R A N D U M

Page 8

May 31, 1994

The Illinois Trailriders has requested a number of recommendation be considered between Illinois 120 north to I-94.

The SRA study of U.S. 41 extends from I-94 north to Illinois 120. The request do not apply to the U.S. 41 SRA study.

A comment was made that a roadway connecting Westleigh Road and Illinois 60 would be desirable to promote safe east-west travel without using U.S. 41.

This alternative was investigated and discussed with Lake Forest staff. Based on their review it was rejected due to the encroachment and impacts to residential properties. Any reconsideration of this alternative would rely on the City of Lake Forest to initiate future study.

A comment was made suggesting that the SRA report should provide pedestrian overpasses north of Clavey Road.

The SRA plan recommends reconstruction/relocation of the pedestrian overpass north of Clavey Road in the vicinity of Deerfield Road. IDOT would rely on Highland Park to assist in determining the appropriate location for an overpass.

Westleigh Road seems to have a high number of accidents.

Accident data provided by IDOT for this study did not identify an accident problem at this location.

A request was made for consideration of increased earth berms on the east side of U.S. 41 south of Deerpath.

The need for increased earth berms or other noise and/or visual barriers would be evaluated during Phase I studies where environmental impacts will be identified and mitigation would be developed.

Consider cooperative funding with the Toll Authority. When the Deerfield Toll Plaza is rebuilt re-route traffic from the Edens Expressway north of the Toll Plaza (No Toll Collection). Remove the Toll Plaza north of Illinois 176.

These type of recommendation would be the responsibility of the Illinois State Toll Highway Authority, not the Illinois Department of Transportation.

M E M O R A N D U M

Page 9

May 31, 1994

At the intersection of Illinois 60 there seems to be a lack of capacity along the eastbound approach to the intersection.

There is a lack of capacity along the Illinois 60 approach to U.S. 41. The proposed SRA plan recommends to increase capacity along this approach.

A comment was made that the Sand and Gravel Business already has an access road and that they have no Com Ed Easement.

No comment required.

TO: The City of Lake Forest
The Honorable Rhett W. Butler, Mayor
Members of the City Council

COPIES: Robert Kiely, City Manager
Kenneth Magnus, City Engineer

FROM: Rich Starr/IDOT
Dick Stafford/CH2M HILL

DATE: May 31, 1994

SUBJECT: U.S. 41 SRA Study

PROJECT: GLT 31495.01.A5
P-91-126-90 (PSB#68/3)

This memorandum documents responses to the City of Lake Forest's Position Paper regarding the proposed U.S. 41 Strategic Regional Arterial (SRA) corridor plan. The responses to each comment follow the City's statement.

A. Public Policy on Public Transportation

It would appear, through recent actions by the US Congress, that national public policy is moving toward public transportation initiatives and options. Employee trip reduction and investment in the Wisconsin Central commuter line are two recent actions that will have a profound effect on total average daily traffic counts on US Route 41, as well as other arterial and non-arterial streets. Why not focus the allocation of limited public resources on reducing traffic from our highways and offer them other more convenient and environmentally safe modes of public transportation?

Recent transportation policy as stated in the Intermodal Surface Transportation Efficiency Act of 1991, amendments to the Clean Air Act, etc., do emphasize other modes of travel, transportation demand management solution (TDMs), and other employee trip reduction measures.

The proposed improvements to U.S. 41 as outlined in the SRA report is one element of a system of improvements that are recommended as part of the SRA plan. The plan supports and encourages public transportation improvements. Proposed transit improvements that are outlined in the report include:

- Adding extensions of the Milwaukee District/North Line This extension would operate parallel to U.S. 41 approximately 1.3 miles to the west.

MEMORANDUM

Page 2

May 31, 1994

- Using the EJ&E Railway as a new commuter rail service.
- Improving existing bus service including improving and adding stops along U.S. 41.

Other improvements identified as part of the long range, 2010 transportation plan are considered as part of the SRA plan. These improvements, increased public transportation usage, as well as other TDMs and trip reduction measures will have an effect on traffic demand in the U.S. 41 corridor.

Therefore, modifications to U.S. 41 including expanding the cross section to six lanes, would be considered in conjunction with the above transportation improvements. Furthermore, a specific aspect to the long-range transportation plan in the area is the future expansion of the Tri-State Tollway north to Wisconsin. Plans to expand the U.S. 41 cross section to three continuous lanes in each direction of travel should not be considered until the effects of future Tri-State expansion have been evaluated.

With respect to the Wisconsin Central Commuter Line: This railine will operate more than six miles west of the corridor and will be operational by 1996. Effects on travel demand in the U.S. 41, associated with the Wisconsin Central line, will be evident shortly thereafter.

B. East-West Arterial Improvements

The State and particularly Lake County appear to have sufficient north-south arterial access, particularly in light of the recent decision to extend Illinois 53. Should we not focus our attention on the obvious deficiencies in our strategic regional arterial system, namely east-west thoroughfares? Improving north-south circulation will have a diminimous impact on relieving traffic congestion without first implementing improvements to east-west arterials.

Similar studies are taking place to upgrade existing east-west arterials. Specific SRA studies in the area include Lake-Cook Road, Illinois 22, Illinois 60, Illinois 137, and Illinois 120. The ultimate staging and phasing of arterial improvements would consider need, the effects of traffic circulation, and the ability to relieve traffic congestion.

C. I-94 Tollway

MEMORANDUM

Page 3

May 31, 1994

Why has the decision been made to increase traffic flows on U.S. Route 41 when paralleling this highway within one mile is another major north-south arterial--I-94 that is also scheduled for expansion/improvement? Improvements to tollbooths and various interchanges could significantly enhance the carrying capacity of I-94. This arterial seems more properly designed to handle the speed and volume of north-south traffic within Lake County rather than being programmed for US Route 41.

The intent of the U.S. 41 SRA plan is not to increase traffic flow on U.S. 41 or to shift traffic from the I-94 tollway (Tri-State) to U.S. 41. From a functional standpoint it is desirable to keep long-range regional through traffic including the majority of north-south trucks on the I-94 tollway rather than U.S. 41 or other north-south roadways. Therefore, as mentioned previously, expanding U.S. 41 to a continuous six-lane section (three lanes in each direction of travel) should not be implemented until the effects of the expanded tollway have been thoroughly evaluated.

D. Projected Growth and Average Daily Traffic (ADT)

As set forth in table 12 of the draft report and attached hereto as exhibit "A" it would appear that the increases projected in ADT for US Route 41 do not justify the magnitude of proposed expenditures and improvements. These projected ADT's along with recent changes in employee trip reduction, the planned Illinois 53 extension, the planned Tollway expansion, and the Wisconsin Central line should raise serious cost-benefit questions on the proposed US Route 41 improvements.

The transportation network that the CATS 2010 ADT forecasts modeled assumed that the above planned improvements were in place. Furthermore, the network also assumed full build out of the proposed SRA system.

As pointed out above, the need to expand U.S. 41 to six continuous lanes would only be considered as part of an overall system of transportation improvements that would increase the capacity of the tollway and other transit improvements. Based on these assumptions and the level of future traffic anticipated a six lane cross section would be required.

A. Environmental and Economic Impact

The areas adjacent to US 41 within the City limits are heavily residential, which could be seriously impacted by any improvement and increased traffic. The City would expect, at a minimum, that the State would control and minimize any negative impact that the proposed improvement would have in the adjacent residential properties. The City has

MEMORANDUM

Page 4

May 31, 1994

worked very hard to restrict, and where possible eliminate, the visual and developmental impacts along US Route 41 corridor. The City has been unique in its approach to protecting the corridor and should be given special design considerations in recognition of the residential character that adjoins this arterial.

Negative impacts to adjacent properties would be more thoroughly identified in future studies (i.e. Phase I studies). As part of these studies, alternatives would be considered to control and mitigate visual, noise, air quality, and other impacts. Furthermore, if the SRA improvements proceed, future studies would be required. These studies would involve the City of Lake Forest, and members of the community.

B. Noise Abatement

If the improvements are to proceed, the State should implement all known technologies to reduce the noise impact on the adjacent residential properties. This might include berms, barriers, etc., as well as the decision on pavement type (i.e., concrete vs. asphalt pavement).

As part of the Phase I study process, noise investigations will be performed. If noise levels exceed criteria established for residential uses (67 dba), noise abatement alternatives will be investigated. These could include earth berms or other noise mitigating barriers.

C. Park and Ride Locations

The proposed Park and Ride facility at the intersection of US Route 41 and Route 60 is inappropriate as it is in the middle of a residential area. In fact, preliminary plans have been submitted to the City by the owner of the property subdividing the designated property into residential lots.

The plan did not intend to identify or delineate an exact location for the park and ride lot. The intent of the plan was to address the desirability of providing park and ride facilities in the vicinity of SRA to SRA intersections. The note on the proposed corridor plan exhibit will be revised to clarify the intent of the recommendation.

D. Streetlights

MEMORANDUM

Page 5

May 31, 1994

The City policy has been to restrict the installation of high-illumination streetlights. The city would not look favorably upon the installation of lights that have been installed along US Route 41 south of Lake Forest.

IDOT will work with Lake Forest to address its concerns. Since the nature of land use along U.S. Route 41 is residential, the negative impacts associated high illumination lighting would be evaluated. Lighting design will also be part of future studies.

E. Additional Right-of-Way

The city would not look favorably upon the acquisition of additional right-of-way, particularly if it encroaches on residential property. Every effort should be made in the design to limit needed right-of-way acquisition through the installation of curb and gutter, etc. Where absolutely necessary, that additional right-of-way should be acquired away from residential properties (i.e., west side of US Route 41 between Old Elm Road and Westleigh Road).

Just south of Westleigh Road the plan indicates right-of-way acquisition of five feet on each side of the roadway. This would be required for grading and other roadside elements. In an effort to minimize right-of-way requirements along the east side of U.S. 41 curb and gutter is recommended. The estimate of right-of-way needs is considered conservative in that full 10 foot left and right shoulders are retained. Shoulders could be narrowed to eliminated right-of-way needs along the east side of the corridor. Ultimate right-of-way requirements may be less than the 5 feet identified.

F. Pedestrian Access

Further widening of US Route 41 would only exacerbate the dissection that this arterial causes the community. Any proposed improvements would need to incorporate pedestrian underpasses/overpass to permit safe and easy traveling of pedestrians and bicyclists from east and west of this arterial within Lake Forest.

While the draft plan has not indicated specific locations for pedestrian underpasses/overpasses, this does not preclude their implementation. During design studies IDOT will work with Lake Forest to locate and consider the appropriate pedestrian crossings. The safe accommodation of pedestrians across U.S. 41 is an essential element of any final improvement plan.

G. Deerpath Road Intersection

MEMORANDUM

Page 6

May 31, 1994

Given the limited right-of-way at this intersection, the City questions whether the State can properly design the geometrics for the intersection at Deerpath and US Route 41. Further, any improvement would have to incorporate upgrades to the undersized stormwater drainage system that currently exists in this area, and is under the jurisdiction of IDOT.

The right-of-way at this already compressed interchange location is less than desirable. The C&NW railroad paralleling U.S. 41 to the east further complicates the objectives of the proposed plan. Adequate geometrics will likely be possible. However, incorporating the design in this constrained location will in all probability require extensive retaining walls and structures. Furthermore, additional alternatives development would be performed in Phase I studies to determine the best interchange configuration (i.e., the potential for a single point diamond) and develop appropriate geometrics.

H. Signage

The City has very strict sign controls and would like to minimize any installations within its corporate limits.

The proposed corridor plan does not recommend changing or modifying existing U.S. 41 signage as part of the improvement plan.

I. Posted Speed Limits

Can IDOT realistically expect to achieve speed limits as proposed (65 mph) with three (3) signalized intersections within approximately one mile (Old Elm Road north to Route 60)? Is 65 mph speed limit warranted with adjacent residential development?

The plan does not recommend a 65 mph speed limit at any location along U.S. 41. The intent of the plan is not to increase speeds along U.S. 41. Future speed limits will be at maximum the existing speed limits.

J. Timetable

What is the realistic timetable for this project going forward? How do the US Route 41 priorities relate to other strategic regional arterial priorities throughout the State of Illinois? Should the State as a policy adopt east-west arterial improvements over north-south improvements?

MEMORANDUM

Page 7

May 31, 1994

There is no established timetable for the implementation of SRA projects. For planning purposes a design year of 2010 was employed. No funds have been programmed for SRA improvements. The SRA studies are in the planning stages in the development of roadway improvements (Pre Phase I). Many additional steps are required before implementation of corridor improvements. These include:

- A need has to be identified.
- Phase I studies (including environmental documentation and public involvement).
- *IDOT Programs Construction Funds*
- Phase II engineering (final plans are produced)
- Phase III construction

Priorities for SRA improvements have not been established. There are more than 1300 miles of arterials that have been designated as strategic regional arterials. The improvements developed in the SRA studies are to be used as a guide in the future improvement of the SRA roadways.

While the economic benefit to upgrade U.S. 412 may not be apparent to some today, the plan is intended to develop a framework for long range improvement alternatives into the next century. This report does not imply that the recommended SRA improvements are warranted today.

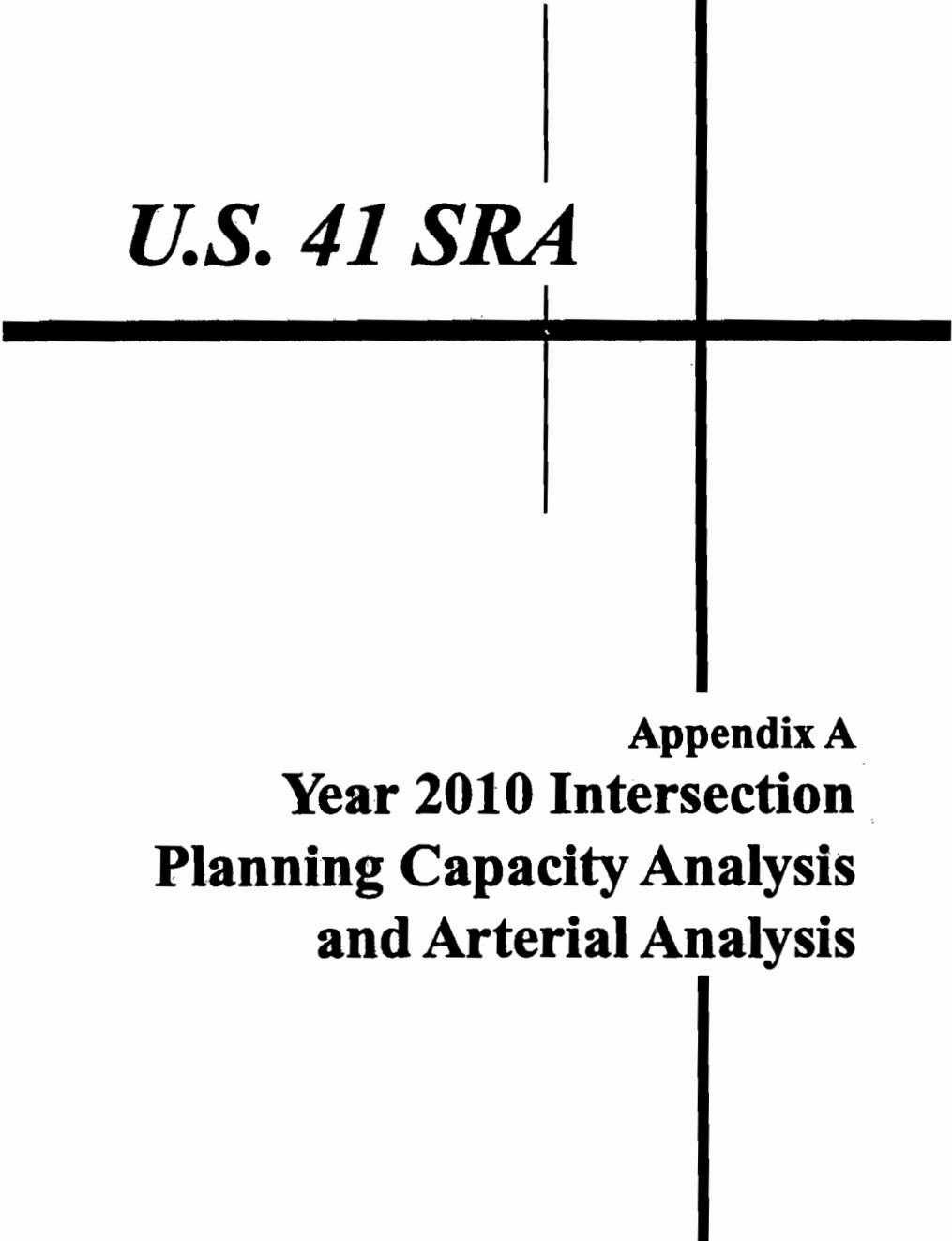
The intent of the enclosed memorandum is to adequately address the City of Lake Forest's concerns, questions and comments with regards to the U.S. 41 proposed plan. We look forward to working with Lake Forest and other communities as this process continues. Please feel free to contact the Illinois Department of Transportation with any additional questions.

Transcript available for review at Illinois Department of Transportation District I Headquarters.

IN RE:)
)
STRATEGIC REGIONAL ARTERIAL)
)
OPERATION GREENLIGHT)
)
U.S. 41)
ILLINOIS 120 TO I-94)

LAKE COUNTY PUBLIC HEARING

REPORT of comments made at the public hearing of the above-captioned study and summary of recommendations, taken before Joan M. Kenny, C.S.R., a Notary Public in and for the County of DuPage, State of Illinois, at the North Shore Moraine Hotel, 700 North Sheridan Road, Highwood, Illinois, on Wednesday, the 1st day of December, A. D. 1993, between the hours of 2:00 and 7:00 P. M.



U.S. 41 SRA

Appendix A
Year 2010 Intersection
Planning Capacity Analysis
and Arterial Analysis

TABLE A-1
U.S. 41
Year 2010 Intersection Planning Capacity Analysis

U.S. 41 AND:	U. S . 41						CROSS ROAD						TOTAL V/C				
	TWO-WAY ADT	K	D	ROADSIDE FRICTION	% TURNS	LT TURN VOLUME	LANES ON APPROACH	V/C	TWO-WAY ADT	K	D	ROADSIDE FRICTION		% TURNS	LT TURN VOLUME	LANES ON APPROACH	V/C
Amhurst Parkway	18800	10%	60	0.99	10%	113	LL-TTT TTT-R	0.25	12000	10%	60	0.94	30%	216	L-R	0.23	0.48
Martin Luther King Dr	20600	10%	60	0.99	10%	124	LL-TTT-R	0.25	20000	10%	60	0.94	20%	240	LL-TT-R	0.35	0.59
IL. 137	35900	10%	60	0.99	20%	431	LL-TTT-R	0.38	50600	10%	60	0.99	20%	607	LL-TTT-R	0.54	0.92
New Access	35900	10%	60	0.99	10%	215	L-TTT-R	0.48	5000	10%	60	0.94	30%	90	L-T-R	0.12	0.60
IL 60	41000	10%	60	0.99	20%	492	LL-TTT TTT-R	0.44	20000	10%	60	0.94	20%	240	LL-RR	0.20	0.64
Westleigh Rd	41000	10%	60	0.99	10%	246	L-TTT-R	0.55	12000	10%	60	0.94	30%	216	L-T-R	0.29	0.83
Old Elm Rd	43200	10%	60	0.99	10%	259	L-TTT-R	0.58	23,900	10%	60	0.94	30%	430	L-T-R	0.53	1.10
Parkside Dr	43200	10%	60	0.99	10%	259	L-TTT-R	0.58	5000	10%	60	0.94	30%	90	L-TR	0.19	0.77
IL 22	45400	10%	60	0.99	20%	545	LL-TTT-R	0.48	22300	10%	60	0.94	20%	268	LL-TT-R	0.39	0.87
West Park Ave	45400	10%	60	0.99	10%	272	L-TTT-R	0.61	12000	10%	60	0.94	20%	144	L-T-TR	0.26	0.86

**Table A-2
Suburban Arterial Level of Service Analysis Inputs
U.S. 41**

Intersection	Intersection Operations				Assumed Signal Operations						
	V/C ^a	Left Turn Volume ^a	Number of Left Turn Lanes ^a	G/C for Left Turn ^b	Thru G/C ^c	Capacity ^d	Cycle Length ^e	Arrival Type ^f	Progression Factor ^g	Spacing to Next Intersection	Arterial Type/Class and Speed ^h
Amburst Parkway	0.48	115	2	0.04	0.48	2316	120	III	1.000	3320	1-50
Martin Luther King Dr	0.59	125	2	0.04	0.38	1834	120	III	1.000	4060	1-50
IL. 137	0.92	430	2	0.14	0.27	1295	120	III	1.000	3850	1-50
New Access Road	0.60	215	1	0.14	0.66	3152	120	III	1.000	21120	1-50
Illinois 60	0.64	490	1	0.33	0.36	1732	120	III	1.000	3380	1-50
Westleigh Road	0.83	250	2	0.08	0.58	2781	120	III	1.000	5880	1-50
Old Elm Road	1.10	260	1	0.17	0.35	1699	120	III	1.000	4120	1-50
Parkside Dr	0.77	260	1	0.17	0.58	2784	120	III	1.000	3450	1-50
Illinois 22	0.87	545	2	0.18	0.37	1776	120	III	1.000	4470	1-50
West Park Avenue	0.86	270	2	0.09	0.62	2973	120	III	1.000		1-50

^a From Intersection Planning Capacity Analysis--Table A-1

^b G/C for left turns = $\frac{\text{Left-turn Volume/Left-turn Lanes}}{1,500}$

^c G/C for through movement = $\frac{V/C \text{ for U.S. 41}}{V/C \text{ for Intersection}}$ - G/C for Left Turns

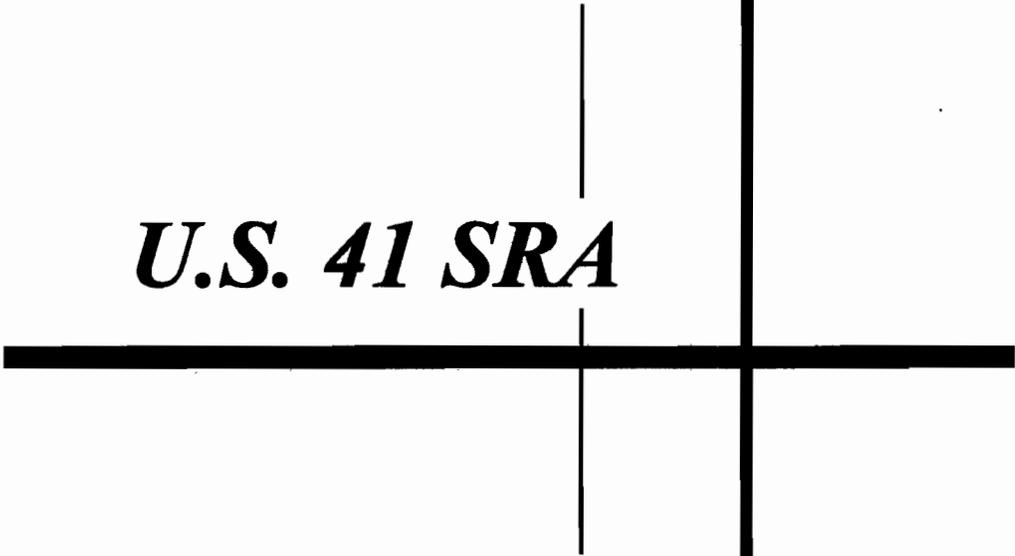
^d Capacity = 1,600 x number of through lanes x G/C (for through movement)

^e Assumptions:
 2-Phase signals: 60-90 seconds
 3-Phase signals: 90-100 seconds
 4-Phase signals: 120-150 seconds

^f Assume Type III, IV, or V, depending on spacing of signals relative to SRA guidelines per Highway Capacity Manual

^g Per Highway Capacity Manual Table 11-6

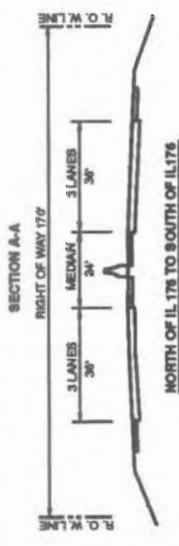
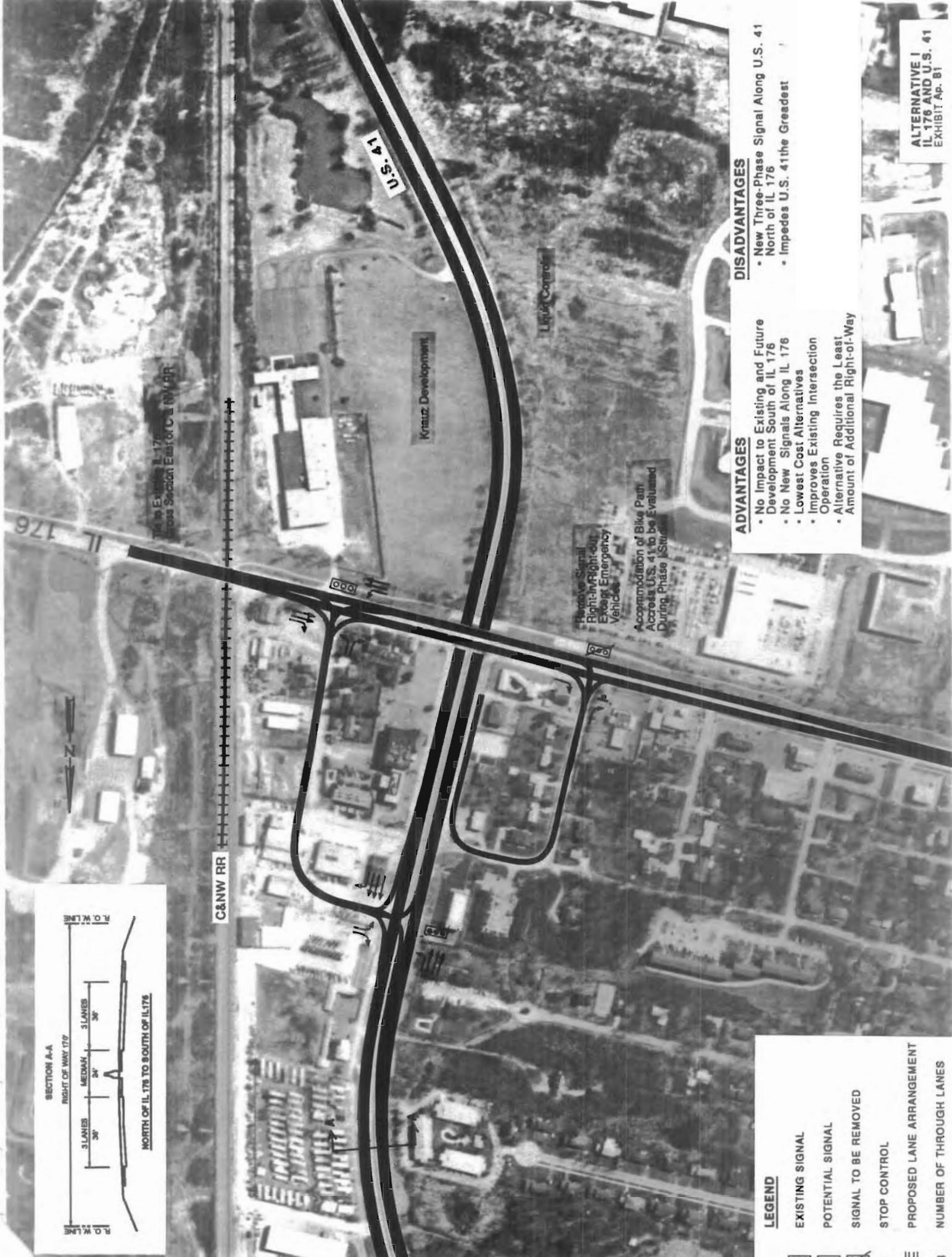
^h Per Highway Capacity Manual - Assume Type III for urban SRAs



U.S. 41 SRA

Appendix B
U.S. 41 and Illinois 176
Interchange/Intersection
Alternative





DISADVANTAGES

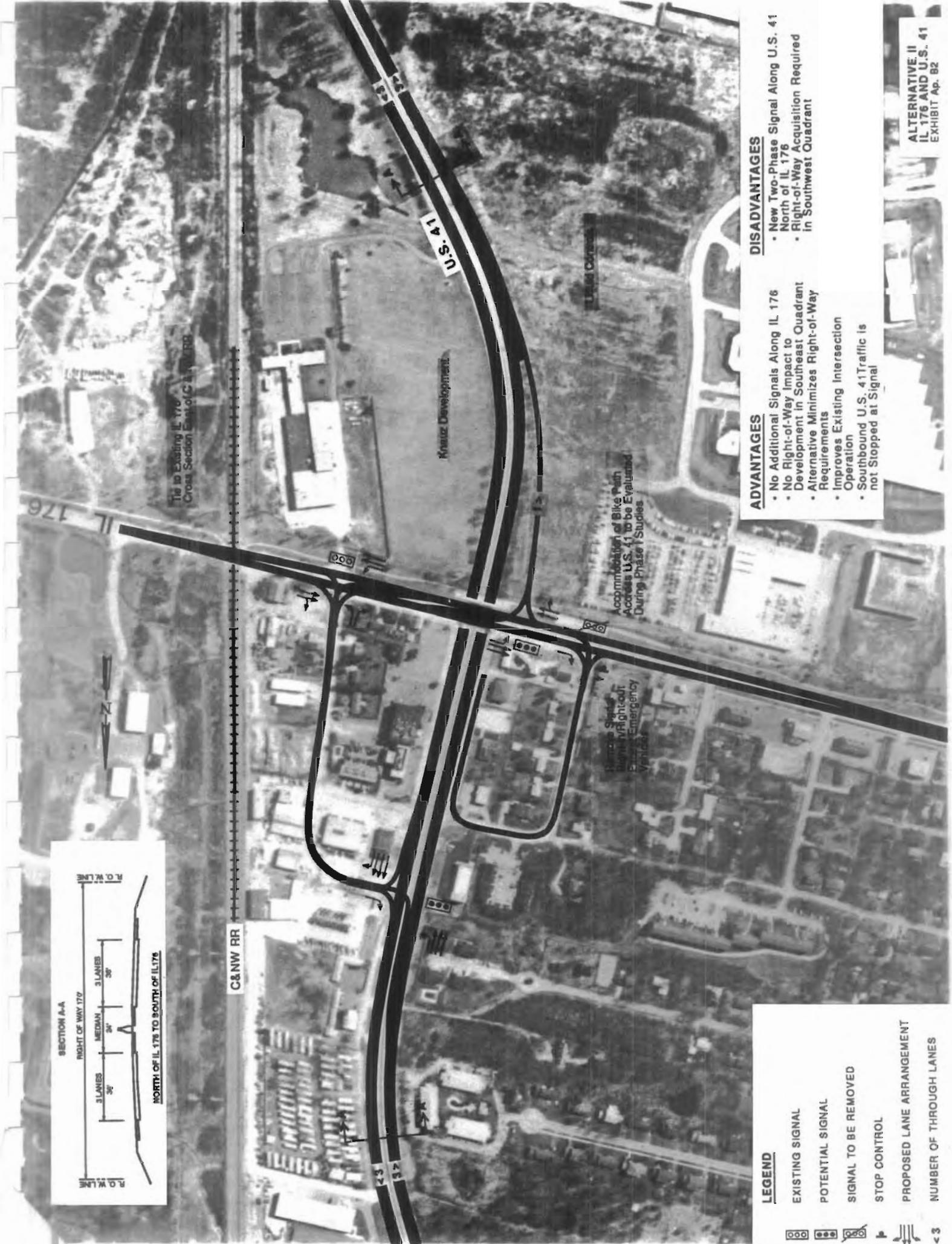
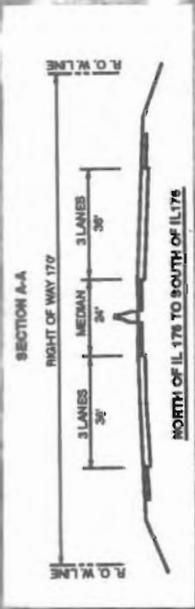
- New Three-Phase Signal Along U.S. 41 North of IL 176
- Impedes U.S. 41 the Greatest

ADVANTAGES

- No Impact to Existing and Future Development South of IL 176
- No New Signals Along IL 176
- Lowest Cost Alternatives
- Improves Existing Intersection Operation
- Alternative Requires the Least Amount of Additional Right-of-Way

- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - STOP CONTROL
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF THROUGH LANES

ALTERNATIVE I
IL 176 AND U.S. 41
EXHIBIT Ap. 81



ADVANTAGES

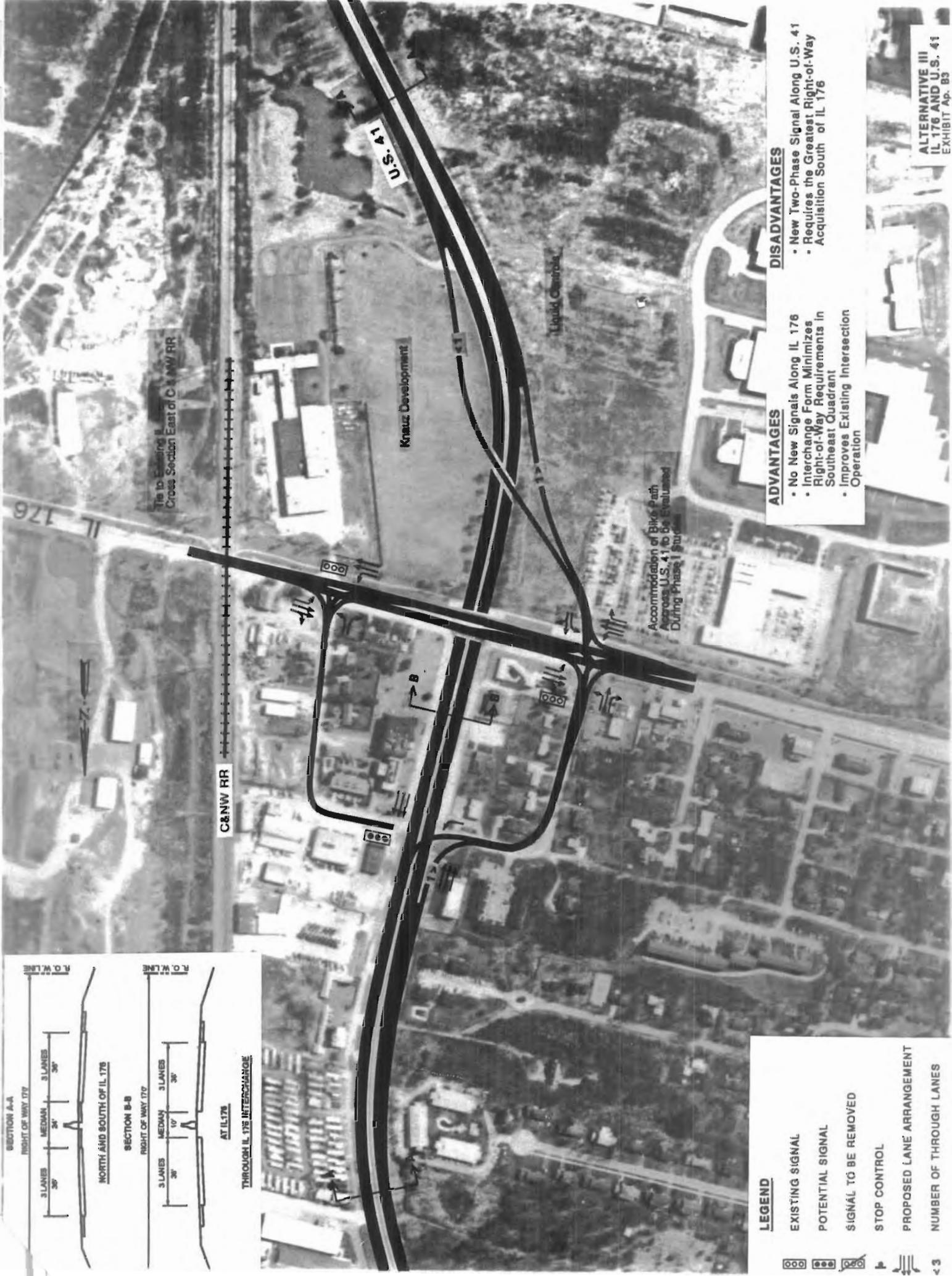
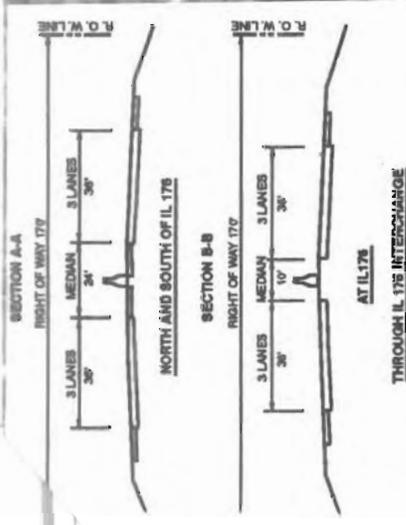
- No Additional Signals Along IL 176
- No Right-of-Way Impact to Development in Southeast Quadrant
- Alternative Minimizes Right-of-Way Requirements
- Improves Existing Intersection Operation
- Southbound U.S. 41 Traffic is not Stopped at Signal

DISADVANTAGES

- New Two-Phase Signal Along U.S. 41 North of IL 176
- Right-of-Way Acquisition Required in Southwest Quadrant

LEGEND

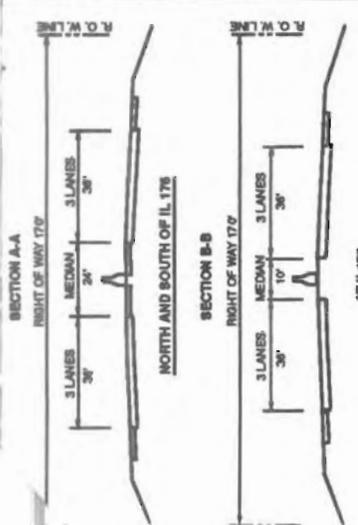
- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- STOP CONTROL
- PROPOSED LANE ARRANGEMENT
- NUMBER OF THROUGH LANES



- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - STOP CONTROL
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF THROUGH LANES

- ADVANTAGES**
- No New Signals Along IL 176
 - Interchange Form Minimizes Right-of-Way Requirements in Southeast Quadrant
 - Improves Existing Intersection Operation

- DISADVANTAGES**
- New Two-Phase Signal Along U.S. 41
 - Requires the Greatest Right-of-Way Acquisition South of IL 176



AT IL 176
THROUGH IL 176 INTERCHANGE

ADVANTAGES

- No New Signals Added to U.S. 41
- No Right-of-Way Required Just North of IL 176
- Compressed Interchange Form Minimizes Right-of-Way Requirements South of IL 176
- Improves Existing Intersection Operation

DISADVANTAGES

- New Three-Phase Signal Along IL 176
- 3 Closely Spaced Signals Along IL 176
- High Cost Structure Over U.S. 41 at IL 176
- High Cost Alternative

LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- STOP CONTROL
- PROPOSED LANE ARRANGEMENT
- NUMBER OF THROUGH LANES