

Please handle w/care!

Strategic Regional Arterial U.S. 14

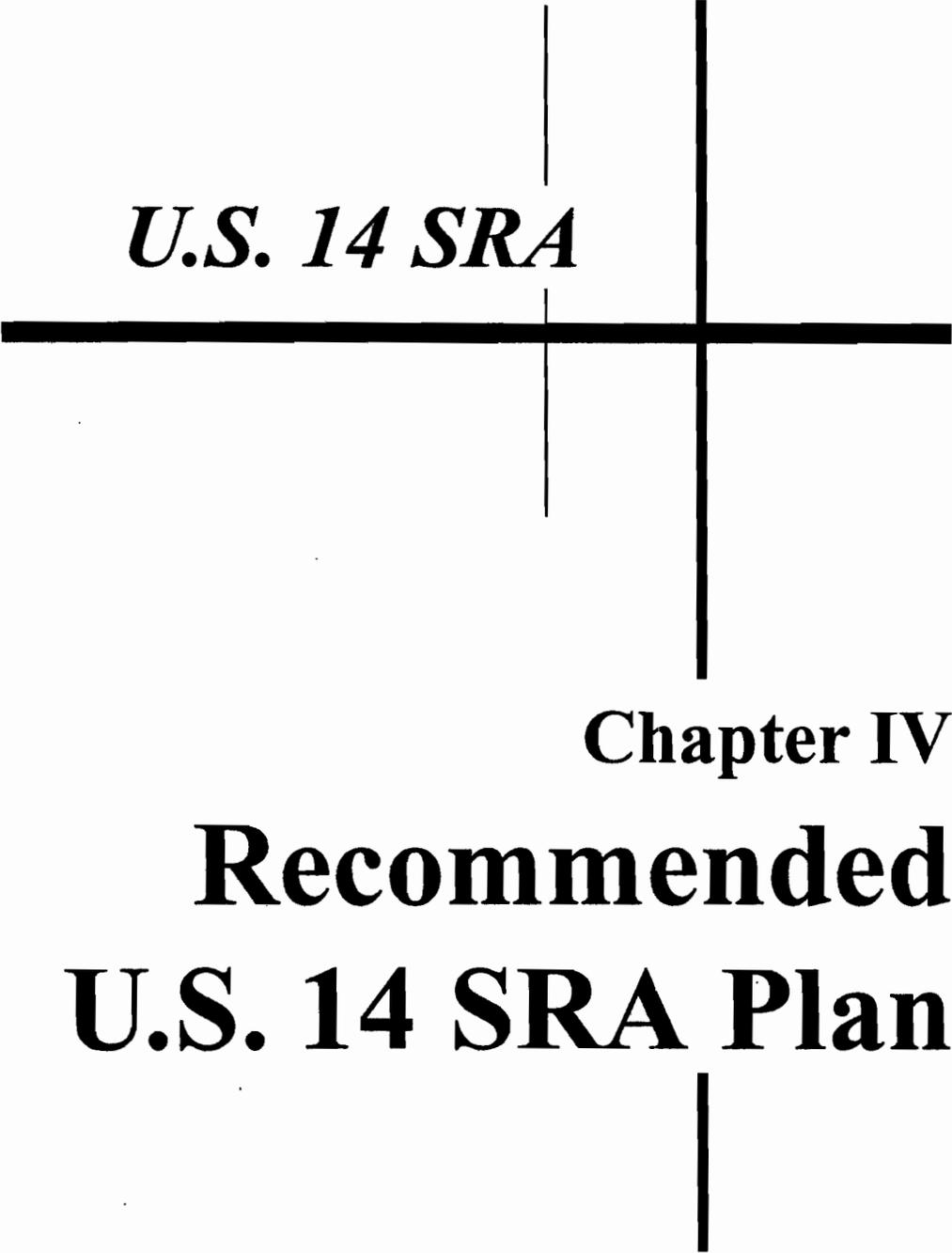
*from Illinois-Wisconsin state line
to Palatine Road*



Operation
GreenLight

Illinois Department of Transportation

April 1993



U.S. 14 SRA

Chapter IV

**Recommended
U.S. 14 SRA Plan**

Chapter IV

Recommended U.S. 14 SRA Plan

This chapter details the recommended concept for the U.S. 14 SRA corridor. For clarity, the discussion is organized according to the segments described in Chapter II (see page II-1). For each segment, this chapter presents specific geometric and/or operational recommendations, and unique features or special roadway designs.

The plan is supplemented by an evaluation of its operational characteristics (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 are presented for each segment of the U.S. 14 corridor. All costs are based on unit, generalized costs as furnished by IDOT for SRA planning purposes, with 1991 established as a base year.

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 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 a design of the proposed roadway in relation to the existing roadway. The traveled way (i.e., edge of pavement to edge of pavement) is highlighted on the plan. Additional right-of-way requirements, lane arrangements at intersections, locations of proposed and existing signals, and the proposed typical SRA cross section also are shown.

Segment I—“Harvard” (State Line Road to Bunker Hill Road)

Segment I runs from the Wisconsin State Line to Bunker Hill Road, a distance of about 10½ miles. It includes U.S. 14 through unincorporated McHenry County and the town of Harvard (see Exhibits C-1 to C-7).

Cross Section and Geometric Characteristics

The recommended cross section reflects the planned rural characteristic of adjacent land use. As shown in Exhibits C-1 to C-7, U.S. 14 would be constructed as a four-lane, divided highway with an open median of 40 feet, full right shoulders, and open drainage. Generally, this improvement could be constructed within 160 to 180 feet of right-of-way.

The roadway dimensions reflect full SRA standards, with the exception of the median. A 40-foot median is proposed to be consistent with previously planned and implemented improvements for U.S. 14 further south.

Exhibits C-1 to C-7 show the recommended widening scheme. Beginning at the north project limit, all widening would occur to the west side of U.S. 14, with the existing two-lane road converted to the northbound lanes, and new southbound lanes constructed. The 90-foot right-of-way requirement to the west would result in the acquisition of a number of businesses in the town of Big Foot. These acquisitions are necessitated by the existence of cemetery and historic property on the east side of U.S. 14.

Proceeding south, widening is transitioned to the east side of the existing roadway to avoid conflicts with farmhouses and buildings in the vicinity of Hebron Road. Widening continues to the east, with the existing road serving future southbound lanes and new roadway carrying northbound traffic, as far as Crowley Road (see Exhibit C-2).

The northern terminus of a U.S. 14 bypass of Harvard would occur in the vicinity of Crowley Road. Exhibit 6 shows three distinct corridors that were studied for the bypass. Based on a review of available, published data, a “Far East,” “East,” and “West” bypass were identified as likely alignments. Appendix B summarizes an



U.S. 14 - PROPOSED BYPASS PLAN

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SRA Strategic Regional Arterial Planning Study **EXHIBIT 6**

Scale: 0 1000 2000 feet

evaluation of all three alignments. Note that more extensive engineering and environmental studies will be required to establish a bypass route's feasibility and specific alignment, or preferred alignment.

Assuming a bypass alignment is designated as the SRA corridor around Harvard, the existing U.S. 14 roadway in Harvard would revert primarily to local use. Exhibits C-3 to C-5 refer to the existing roadway as "Old U.S. 14," and indicate no roadway improvements as part of the SRA plan.

South of Harvard (see Exhibits C-6 and C-7), the bypass would rejoin the existing corridor at a location between Windy Hill Road and Lindwall Road, depending on the alternative. Exhibit C-6 shows cross section and geometric improvements for the SRA assuming selection of a west or east bypass. Widening occurs entirely to the west to minimize residential impacts and to avoid a conflict with the wildlife preserve south of Streit Road (see Exhibit C-7). The two intersections of Windy Hill Road and U.S. 14 should be reconstructed to correct the skew angles. The far east bypass alignment rejoins existing U.S. 14 in the vicinity of Lindwall Road. The Lindwall Road and Lembcke Road intersections should be reconstructed to eliminate undesirable skew angles. South of Lindwall Road, the SRA alignment would be transitioned to enable widening to the east to avoid conflicts with the Plum Tree Golf Course. (Any right-of-way acquisition from the golf course would appear to affect as many as four holes.)

Four locations along U.S. 14 in this segment are located within floodplains. The area of the floodplain that lies on the road indicate that the improvement could impact them. Compensatory storage would be considered for the fill or material placed within the floodplain. Whether or not the storage would be provided would depend on the significance of the encroachment and the extent to which local ordinances are considered.

Traffic Control, Operations, and Safety

The rural character of U.S. 14 defines the nature and extent of safety and operational improvements within the SRA plan. These improvements include traffic control at intersections, expected safety effects of the four-lane divided facility, and safety and operational impacts of the bypass.

The traffic control diagrams at the top of each exhibit depict intersection locations, traffic control, and spacing. The SRA plan for Segment I identifies no existing or future signalized locations.

Note that Illinois 173, another SRA route, currently intersects with U.S. 14 in the town of Harvard. With the proposed bypass plan, this intersection would occur outside of Harvard. As noted in Appendix B, it is possible that the Illinois 173 SRA plan will also call for a Harvard bypass. Regardless of the location of the Illinois 173/U.S. 14 intersection, this Segment I location may require a signalized intersection. As noted in the exhibits, all other crossing roadways would be stop-controlled. The SRA plan calls for realignment of many of these roadways to intersect at safer, 90-degree angles. In addition, when reconstruction of U.S. 14 occurs, care should be taken to ensure that sufficient intersection sight distance is provided for all stop-controlled intersections. Profile adjustments or intersection relocation may be necessary.

The exhibits also indicate locations of proposed median openings, for which SRA design criteria specify a separation of ½ mile. Median openings are shown relative to existing land uses given these criteria. Where an existing driveway accesses U.S. 14 and no opening is shown, it is the intent of the plan that the driveway accommodate only right-in/right-out movements.

The traffic control and geometric plan for Segment I should improve both the operations and safety of U.S. 14 significantly. A long-range ADT volume of up to 19,000 vpd can be accommodated at the desired level of service C, during peak periods for typical rural SRAs. This volume is significantly greater than the CATS year 2010 forecasts for Segment I.

In terms of safety, the existing two-lane highway functions in a typical manner, with accident rates on the order of 2.5 to 4.0 accidents per MVM (see Exhibits A1 to A7). Rates for four-lane divided highway are typically 40 to 50 percent lower, with severe head-on and passing-related accidents reduced significantly. Elimination of U.S. 14 through traffic from the town of Harvard should improve safety substantially (accident rates within the town are as high as 9.44 accidents per MVM). Lower traffic volumes and rerouting of those volumes to a safer facility also should improve overall network safety measurably.

Public Transportation

The Metra C&NW Northwest commuter rail line operates immediately northeast of and parallel to the U.S. 14 corridor. Metra is currently evaluating extending the McHenry Branch of this line to Richmond (just 2 miles south of the Wisconsin border). In addition, an improved, uniform sign system providing directional signs to the Harvard Metra Station is recommended. Because of growth in ridership and the limited reserve capacity of existing parking at the Harvard Metra Station, it is recommended that additional parking be identified, as necessary, for future use.

Although there are no proposed bus route additions for this section of U.S. 14, as population and development increase, more bus routes may be warranted. These turnouts could be provided within the recommended right-of-way. Furthermore, bus waiting shelters and paved sidewalks for pedestrians also should be considered. Appropriate standards for locating and marking bus stops should be followed.

Consideration also should be given to preservation of right-of-way at or near the proposed intersection of the future U.S. 14 bypass and "Old U.S. 14," for a future park-n-ride facility. This facility also could accommodate traffic from the Illinois 23 and Illinois 176 SRAs.

Construction and Right-of-Way Costs

The consultant's opinion of the total cost of the recommended plan for Segment I ranges from \$53.3 to \$42.0 million in 1991 dollars depending on the bypass alternative (see Table 17). This cost includes roadway and intersection reconstruction, right-of-way acquisition, and structure reconstruction. (In Segment I, new and/or

reconstructed bridges are required for four separate structures over the Lawrence Creek, Piscasaw Creek, Metra C&NW Railroad, and Rush Creek.)

The roadway construction cost is estimated to be \$44.9 to \$39.1 million, which includes conversion of the existing two-lane roadway to a four-lane divided highway, and construction of a bypass of 4.3 to 6.0 miles. Included in bypass costs are an at-grade SRA-to-SRA intersection with Illinois 173, and new structures over the Metra C&NW Railroad, Piscasaw Creek, and Lawrence Creek.

The right-of-way acquisition cost is based on the estimated costs of the various types of land that would be acquired. It is estimated that between 101.5 and 192.5 acres of right-of-way will need to be acquired at a cost of \$2.9 to \$5.4 million in 1991 dollars.

Table 17 Opinions of Construction and Right-of-Way Cost for SRA Improvements Along Segment I (State Line Road to Bunker Hill Road) of U.S. 14 (1991 Dollars)	
Roadway Reconstruction	\$37,900,000 to 32,100,000
Intersections/Interchanges (Illinois 173 SRA and Illinois 23 SRA)	2,000,000
Structures and Retaining Walls (Four Separate Bridges over Lawrence Creek, Piscasaw Creek, Metra C&NW Railroad, and Rush Creek)	5,000,000
Other	-0-
Subtotal	44,900,000 to 39,100,000
Right-of-Way	5,420,000 to 2,860,000
TOTAL	<u>\$50,320,000 to 41,960,000</u>

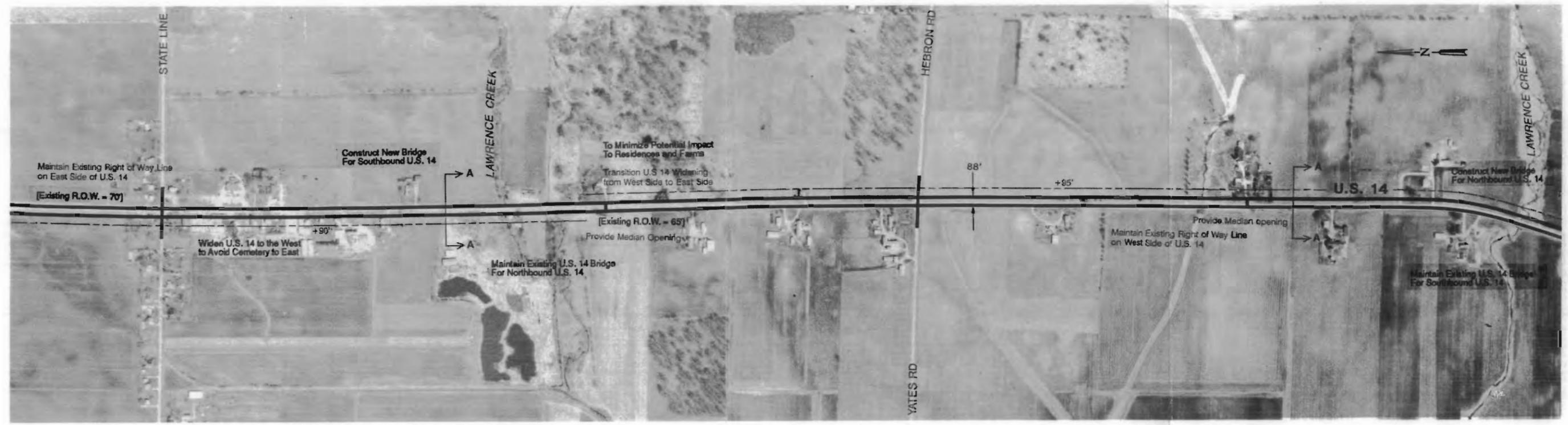
TRAFFIC CONTROL AND LANE ARRANGEMENT

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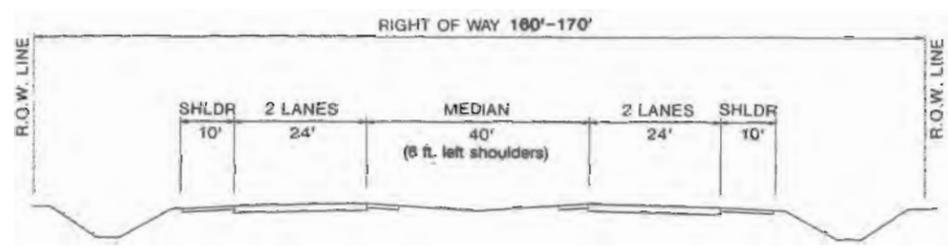
STATE LINE RD
All Crossroads Stop Controlled Unless Otherwise Indicated

HEBRON RD



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



ROADWAY SECTION A-A
STATE LINE RD TO SOUTH HEBRON RD

U.S. 14 - PROPOSED PLAN

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TRAFFIC CONTROL AND LANE ARRANGEMENT

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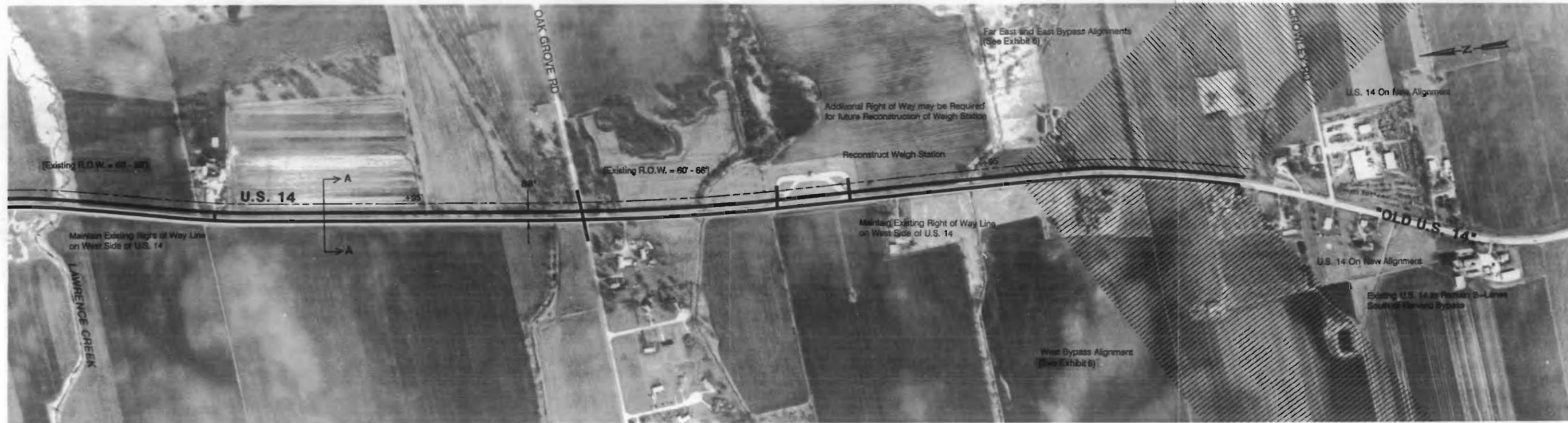
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OAK GROVE RD

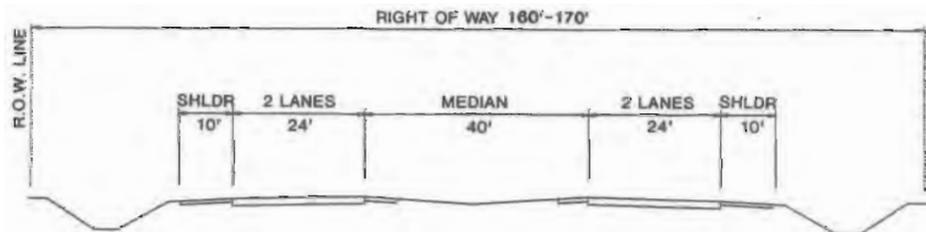
CROWLEY RD

All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



ROADWAY SECTION A-A
NORTH OF OAK GROVE RD TO SOUTH OF CROWLEY RD

U.S. 14 - PROPOSED PLAN

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U.S. 14 - PROPOSED PLAN

Prepared by CRIZM HILL in association with
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SRA Strategic Regional Arterial Planning Study **EXHIBIT C-3**

Scale: 0 100 200 feet



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U.S. 14 - PROPOSED PLAN

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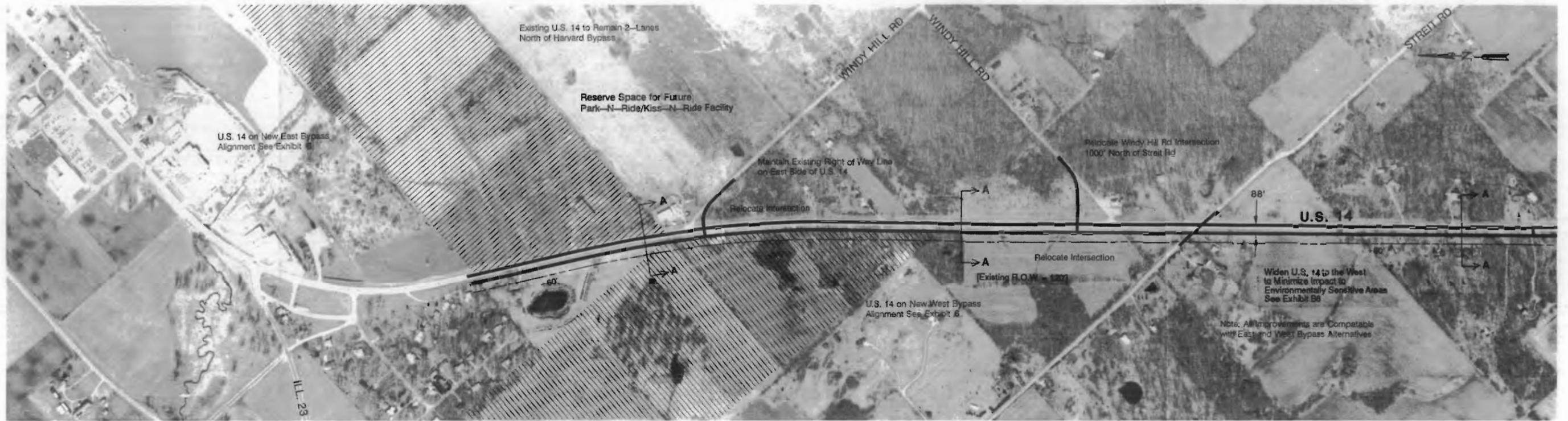
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SRA Strategic
 Regional
 Arterial EXHIBIT C-5
 Planning Study

Scale: 0 100 200 feet

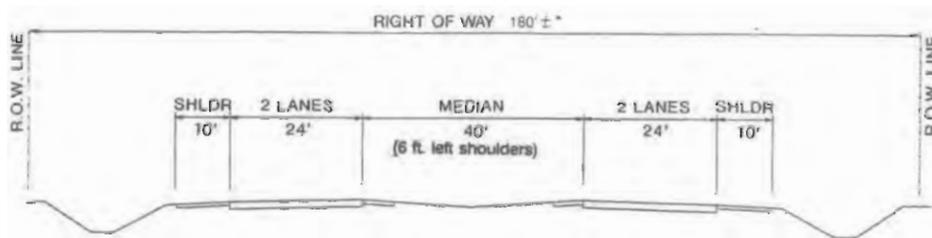


WINDY HILL RD
All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



ROADWAY SECTION A-A
SOUTH OF IL 23 TO SOUTH OF STREIT RD

*Future Right of Way to Produce Roadside Dimension:
Compatible with that Along Existing U.S. 14

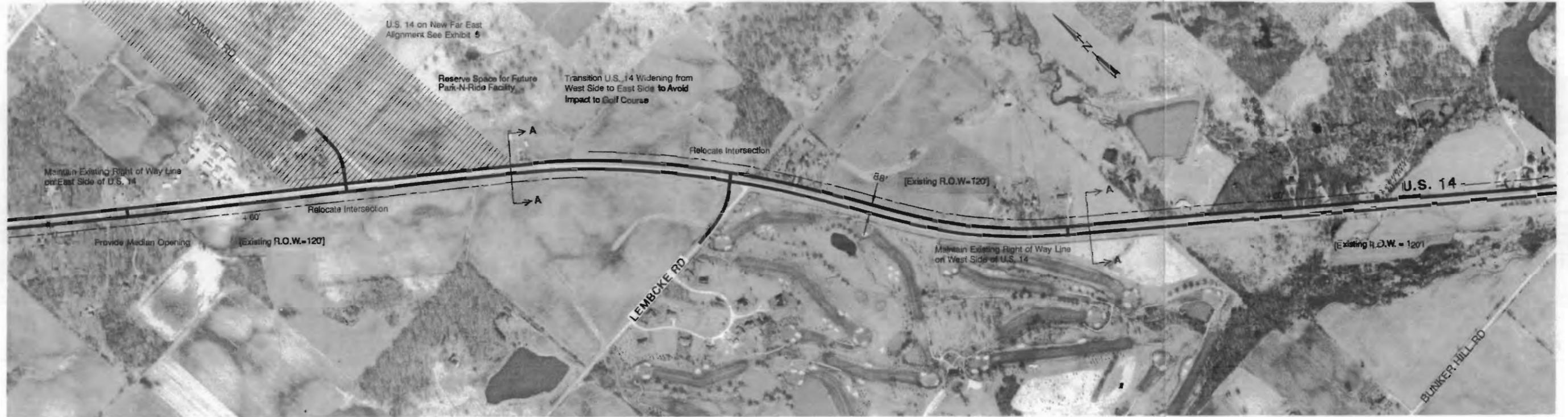
U.S. 14 - PROPOSED PLAN

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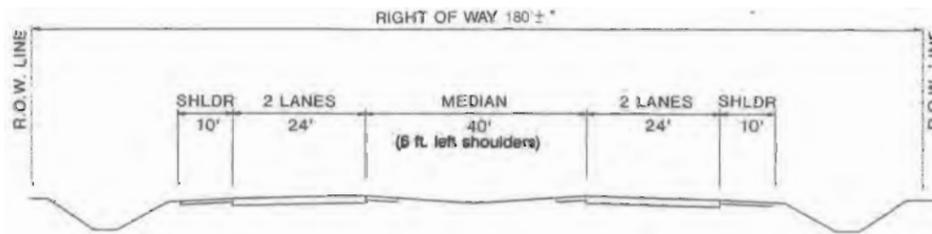


All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



ROADWAY SECTION A-A
LINDWALL RD TO BUNKER HILL RD

Future Right of Way to Produce Roadside Compatible with that Along Existing U.S. 14

U.S. 14 - PROPOSED PLAN

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

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Scale: 1" = 200'

**Segment II—“Woodstock”
(South of Lembcke Road to Ridgefield Road)**

Segment II, approximately 13½ miles long, runs southeast from south of Lembcke Road to Ridgefield Road (north), north of Crystal Lake. It includes U.S. 14 through portions of unincorporated McHenry County, including the community of Woodstock (see Exhibits C-8 to C-13).

Cross Section and Geometric Characteristics

The recommended rural-type cross section reflects the planned rural characteristic of existing and future low-density development. Exhibits C-8 to C-13 show the proposed cross section of U.S. 14. As proposed, U.S. 14 would be constructed as a four-lane divided highway, with an open 40-foot median, full right shoulders, and open drainage. Generally, the cross section shown could be constructed within 160 to 200 feet of right-of-way depending upon existing terrain.

The dimensions of the proposed cross section reflect desirable SRA standards, with the exception of the median. As with Segment I, a 40-foot median is recommended, to be consistent with previously planned and implemented four-lane segments of U.S. 14 south of Illinois 120.

Exhibits C-8 to C-13 diagram the recommended widening scheme for Segment II. From south of Lembcke Road to roughly Paulsen Road in unincorporated McHenry County, all widening would occur to the east side of U.S. 14. The existing two-lane U.S. 14 would be converted to the new southbound lanes, with the two new northbound lanes constructed in newly-acquired right-of-way. These new northbound lanes would tie into the recommended widening scheme recommended in Segment I. The Bunker Hill Road/U.S. 14 and Paulsen Road/U.S. 14 intersections should be reconstructed to remove the existing skew angles, which would provide a safe intersection with better operations. Relocation of these intersections also would provide greater intersection spacing, especially between the intersections of Paulsen Road and Deep Cut Road.

South of Paulsen Road to south of Deep Cut Road, the widening transitions to the west side of the existing corridor. This widening scheme is incorporated to eliminate impacts to existing farmhouses and to maintain the future alignment or centerline already developed and recorded. Widening continues to the west side of U.S. 14, with the existing roadway serving future northbound lanes and the new roadway carrying southbound traffic as far as Hartland Road (see Exhibit C-9). Through the Hartland Road intersection, the widening is transitioned back to the east side of U.S. 14 south to where it ties to the existing four-lane cross section at Illinois 120. The existing road would be used for the southbound lanes. The intent of this widening scheme is to develop the alignment of the recommended four-lane section consistent with the future centerline already established, and to achieve compatibility with the existing four-lane section north of Illinois 120. It is also recommended that the intersection at Illinois 120 be reconstructed, "closing up" the intersection to provide more conventional channelization and better operations, and to minimize the chances for wrong-way movements. See the intersection detail depicted in Exhibit D-1.

South of the Illinois 120 intersection, it is recommended that widening be continued to the east side of existing U.S. 14, utilizing the existing two-lane roadway for southbound lanes. Two new lanes would be constructed to the east as the new northbound lanes. This widening scheme would extend south to Lake Avenue where the roadway would tie into the existing four-lane, divided section. Right-of-way of 200 feet already has been reserved along this stretch of U.S. 14, and grading and structures already have been designed to accommodate the additional two-lane roadway. The intent of the recommended plan is to maintain total compatibility with work already completed. It is recommended that the intersection of Lake Avenue be converted to a more conventional intersection that accommodates traffic movements in all directions.

Proceeding south, approximately ½ mile from the Lake Avenue intersection with U.S. 14, widening is transitioned to the west side, south to the southern terminus of this segment at Ridgefield Road (north). Widening to the west would minimize impacts to existing farmhouses and buildings south of Lake Shore Drive. In this section of Segment II, the existing two-lane road would be used for the northbound lanes, with the new southbound lanes constructed in the newly-acquired right-of-way on the west side of existing U.S. 14. This improvement could be constructed within 170 feet of right-of-way. Between Lake Shore Drive and Doty Road, a two-way

frontage road is recommended on the west side of U.S. 14. The purpose of the frontage road is to serve anticipated development along this portion of the corridor. Note that two developments already have been proposed in this area: an industrial development off of Lake Shore Drive, and a hospital complex at the intersection with Doty Road. Access to development along this segment would occur from the frontage roads via intersections at Lake Shore Drive and Doty Road only. It is recommended that this frontage road be designed consistent with the internal roadway circulation plan being developed by the future medical complex development. These frontage roads could be extended, or other frontage roads could be implemented along other segments of U.S. 14, as land use plans are revised or new developments are proposed. The use of a frontage road system at this location specifically addresses the needs of known and anticipated development in this area.

Traffic Control, Operations, and Safety

The rural character of U.S. 14 defines the extent of safety and operational improvements within the recommended SRA plan, which include traffic control at intersections, spacing of intersections, and expected safety and operational effects associated with upgrading the existing two-lane roadway.

The traffic control diagrams shown at the top of each exhibit depict intersection control and spacing of existing and future signalized intersections, as well as recommended lane arrangements. Locations of future signals were identified based on existing and future land use, safety, and operational considerations, and overall system needs.

The traffic control plan recommends the intersection of Illinois 120 and U.S. 14 as a potential location for a future signal. The next intersection to the north would not occur until McGuire Road (installed in 1992) in Harvard. South from Illinois 120, the next signal is located at the intersection with Kishwaukee Valley Road. This signal was installed in the summer of 1992. The spacing of this signalized intersection is approximately 1.8 miles southeast of Illinois 120 and roughly 1.8 miles north of the next signalized intersection. A new signal is also recommended at Dean Street, between the signal at Kishwaukee Valley Road and the existing signal at Illinois 47.

The existing SRA-to-SRA intersection of Illinois 47 and U.S. 14 should be upgraded to include dual left-turn lanes and right-turn lanes on the U.S. 14 approaches (see Exhibit D-2). In addition to the geometric improvements recommended at the Lake Avenue intersection, a future signal also is recommended (an intersection detail is provided in Exhibit D-3); this signal would be spaced approximately $\frac{3}{4}$ mile south of Illinois 47 and 1 mile north of another proposed signal at Lake Shore Drive. The future signal at Lake Shore Drive would serve the ongoing industrial development in the area and provide access to the future frontage road. Another potential signal is shown at Doty Road, approximately 3,200 feet south of Lake Shore Drive. This signal is intended to serve as a principal access point to the future medical complex development located in the northwest quadrant of the intersection. The spacing of signals satisfies the signal spacing criteria established in the SRA Design Concept Report.

As noted on the exhibits, all other crossing roadways would be stop controlled. As the discussion of cross section and geometric characteristics in the paragraphs above indicates, the recommended SRA plan of improvements includes realignment of cross street intersections to intersect at close to right angles. Again, care should be taken to ensure that sufficient intersection sight distance is afforded for all stop-controlled intersections. Profile adjustments also may be necessary along with relocation of cross street intersections. Improvements to signalized intersections, such as addition of right- and left-turn lanes, also are incorporated at signalized intersections (see Exhibits C-8 to C-13). Table 18 summarizes a planning-level capacity analysis for selected intersections; for more detail see Appendix A.

The exhibits also indicate locations of proposed median openings. SRA design criteria specify that these openings should be no closer than $\frac{1}{2}$ mile apart. Recommended median openings are shown relative to existing land uses given these criteria. Where no obvious location exists, approximate locations for median openings have been identified. These locations can vary as long as they meet the $\frac{1}{2}$ -mile spacing criteria. Where an existing driveway accesses U.S. 14 and no opening is shown, it is the intent of the plan that the driveway serve right-in/right-out movements only.

The traffic control and geometric plan for Segment II should improve the operations, capacity, and safety of U.S. 14 significantly. A long-range ADT volume could be accommodated at the desired level of service C during peak periods for rural SRAs.

Table 18
Evaluation of Signalized Intersection Operations Along
Segment II (South of Lembcke Road to North of Ridgefield Road [North]) of U.S. 14

Intersection of U.S. 14 and:	Lane Arrangements ^b		Year 2010 ADT (vpd) ^c		v/c for Intersection ^d
	SRA	Crossroad	SRA	Crossroad	
Illinois 120*	LTT	L-R	14,600	20,00	1.01
Kishwaukee Valley Road*	L-TT-R	L-TR	12,100	12,000	0.75
Dean Street*	L-TT-R	L-TR	7,600	5,000	0.39
Illinois 47 (Eastwood Road)*	LL-TT-R	L-TT-R	15,200	23,300	0.63
Lake Avenue*	L-TT	L-R	15,500	12,000	0.68
Lake Shore Drive*	L-TT-R	L-TR	15,500	5,000	0.47
Doty Road*	L-TT-R	L-TR	15,500	5,000	0.47

Note: *Denotes SRA corridor.

^aAssumed for unavailable volumes: 20,000 vpd for major arterials, 12,000 vpd for minor arterials, 5,000 vpd for local roadways.

^bL = Left-turn lane; T=through lane; R=right-turn lane; and TR=through and right-turn lanes.

^cADT = Average Daily Traffic.

^dv/c = Volume to Capacity Ratio.

This volume compares to the CATS forecasted year 2010 volume of 5,200 to 14,200 vpd north and south of Harvard. With respect to safety, the existing two-lane highway operates in a typical manner with total segment accident rates ranging from 2.49 to 4.76 accidents per MVM. As stated in the Segment I discussion, accident rates for four-lane divided highways are typically 40 to 50 percent lower. Head-on and passing-related accidents would be reduced significantly. Intersection improvements discussed above, including changes to existing traffic control, also will improve the safety and the operation of existing intersections as well as the arterial itself.

Public Transportation

Similar to Segment I, the Metra C&NW commuter rail line operates parallel and to the east of U.S. 14. Although extensions or improvements have been recommended for this facility, improved signing for the Woodstock station is needed along U.S. 14. Signing improvements are recommended where U.S. 14 intersects with Illinois 120, Kishwaukee Valley Road, Dean Street, and Illinois 47 (a SRA).

Although there are no proposed bus route additions for this section of U.S. 14, as population and development increase, more bus routes may be warranted. Any future bus turnouts could be provided within the recommended right-of-way. Furthermore, bus waiting shelters and paved sidewalks for pedestrians also should be considered. Recommendations include reserving space at the intersection of Illinois 120 and U.S. 14 for the installation of a future bus shelter. Appropriate standards for locating and marking bus stops should be followed.

Consideration also should be given to preserving right-of-way at or near the proposed U.S. 14 and Illinois 47 intersection, for a future park-n-ride facility. This facility also could accommodate traffic from the Illinois 47 SRA.

Construction and Right-of-Way Costs

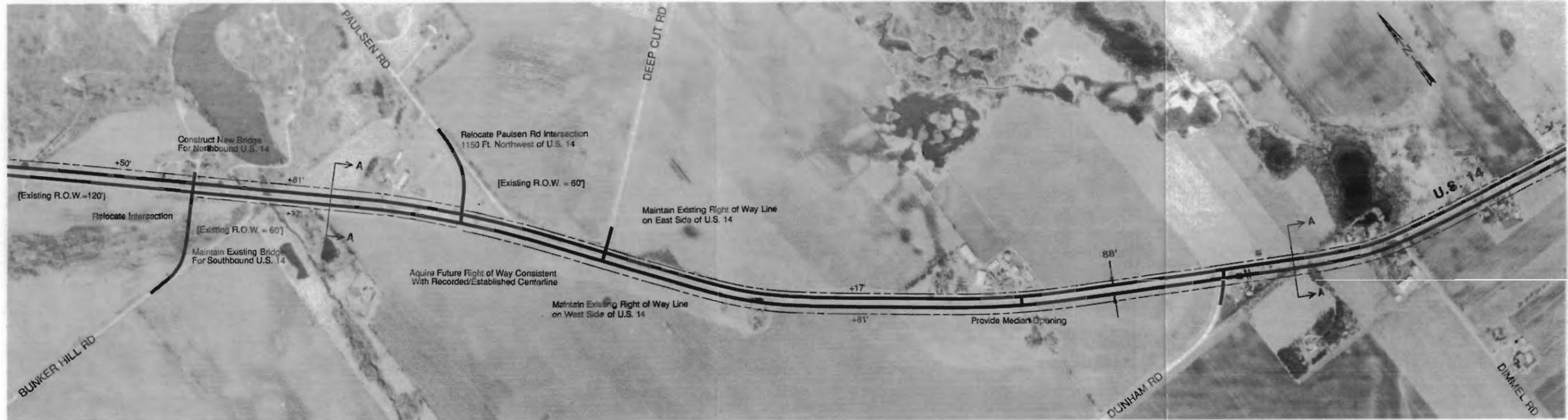
The consultant's opinion of the total cost of the recommended plan for Segment II is \$47.1 million in 1991 dollars (see Table 19). This total cost includes roadway and intersection reconstruction, right-of-way acquisition, and structure reconstruction. (In Segment II, new or reconstructed structures include the crossing of the north branch of the Kishwaukee River and South Street.)

The construction cost is estimated to be \$44.3 million, which includes converting U.S. 14 from a two-lane undivided roadway to a four-lane divided facility. 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 75.8 acres of right-of-way will need to be acquired at a cost of \$2.7 million.

Roadway Reconstruction	\$42,035,000
Intersections/Interchanges (Illinois 120, Dean Street, Illinois 47 [SRA], Lake Avenue, Lake Shore Drive, and Doty Road)	1,800,000
Structures and Retaining Walls (North Branch of Kishwaukee River)	500,000
Other	-0-
Subtotal	44,340,000
Right-of-Way	2,730,000
TOTAL	<u>\$47,070,000</u>

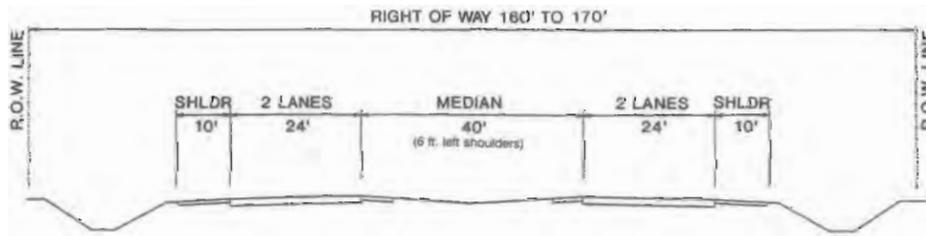


All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP

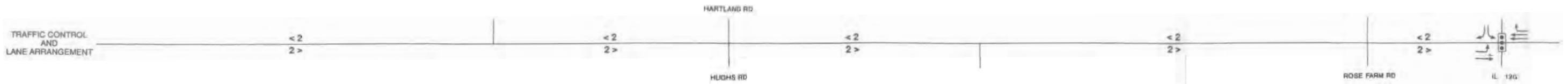


ROADWAY SECTION A-A
BUNKER HILL RD TO DIMMEL RD

U.S. 14 - PROPOSED PLAN

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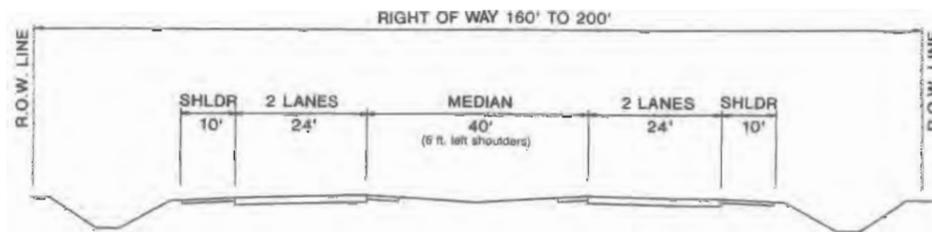


All Crossroads Stop Controlled Unless Otherwise Indicated.



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



ROADWAY SECTION A-A
WEST OF HARTLAND/HUGHS RD TO IL 120

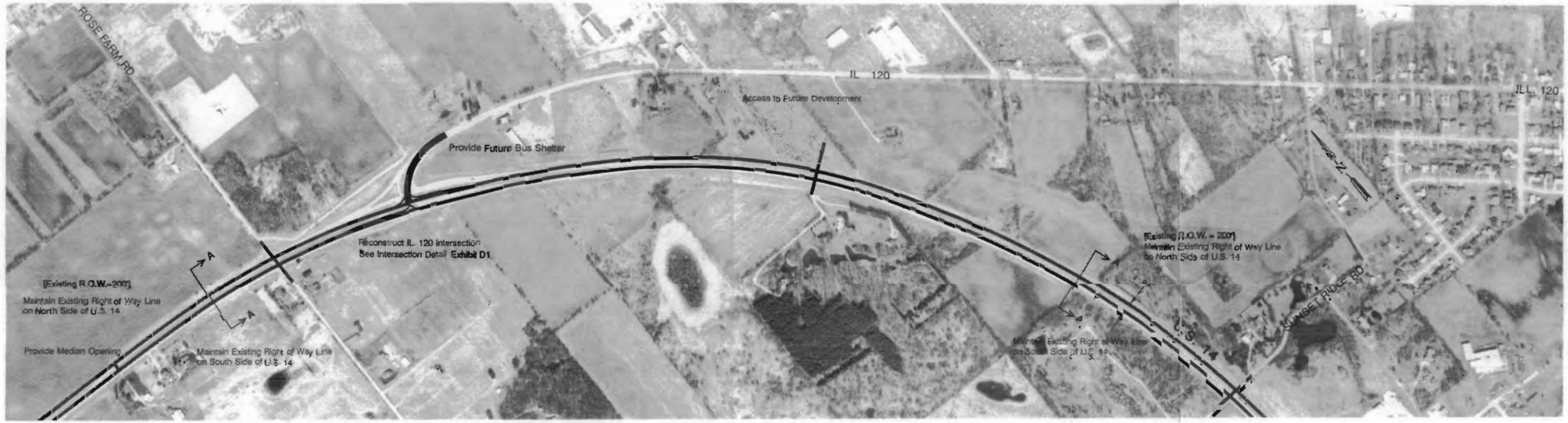
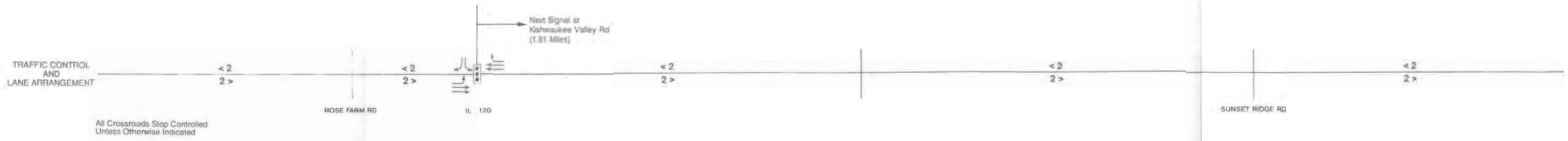
U.S. 14 - PROPOSED PLAN

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

ILLINOIS DEPARTMENT OF TRANSPORTATION

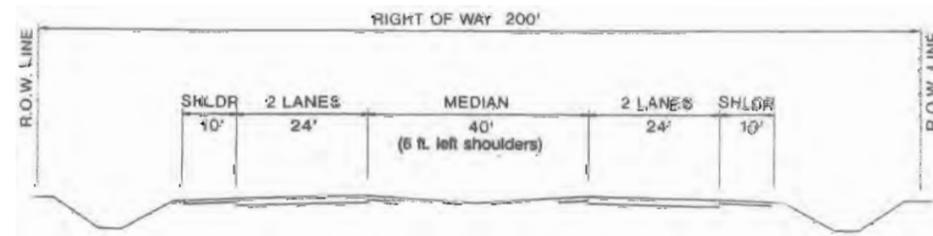


Scale: 0 200 400 feet



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP

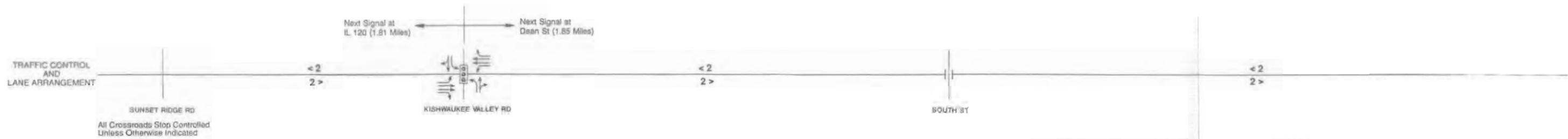


ROADWAY SECTION A-A
ROSE FARM RD TO SUNSET RIDGE RD

U.S. 14 - PROPOSED PLAN

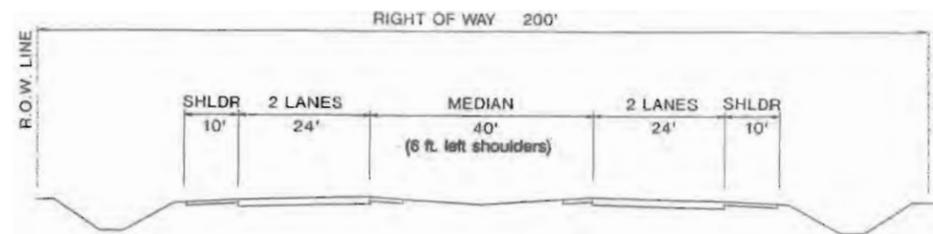
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LEGEND

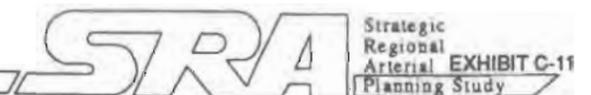
-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



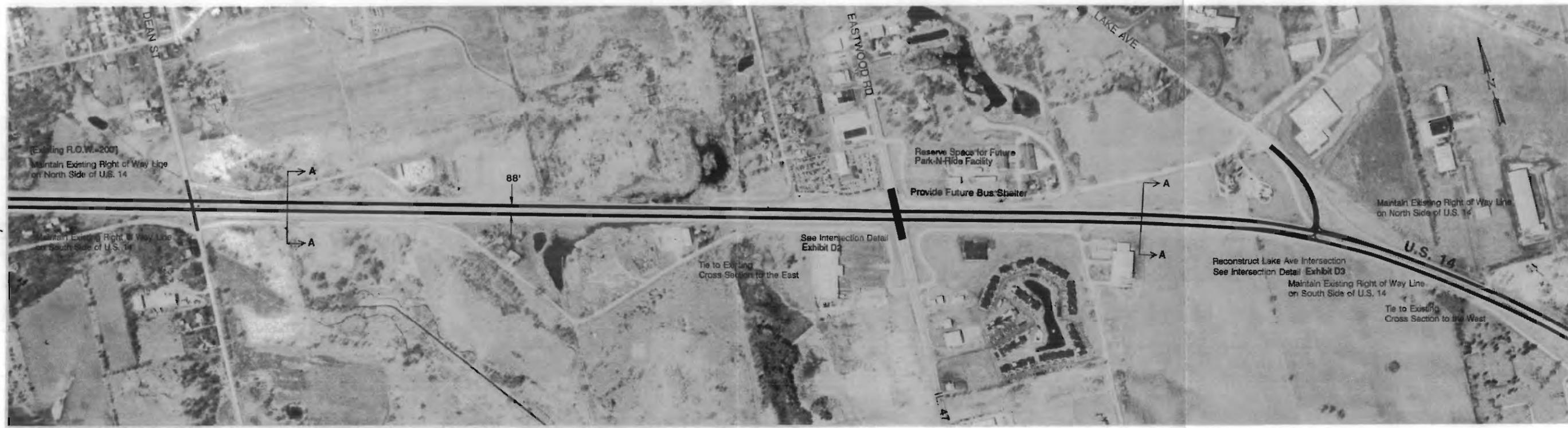
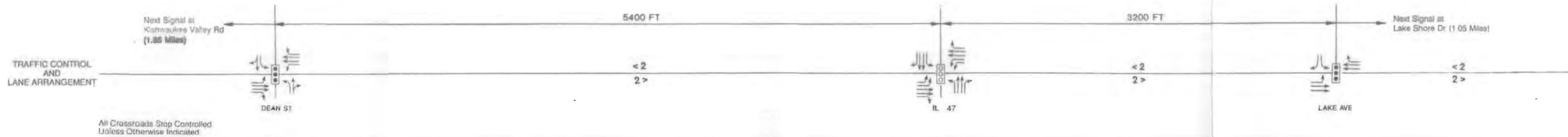
ROADWAY SECTION A-A
SUNSET RIDGE RD TO EAST OF SOUTH ST

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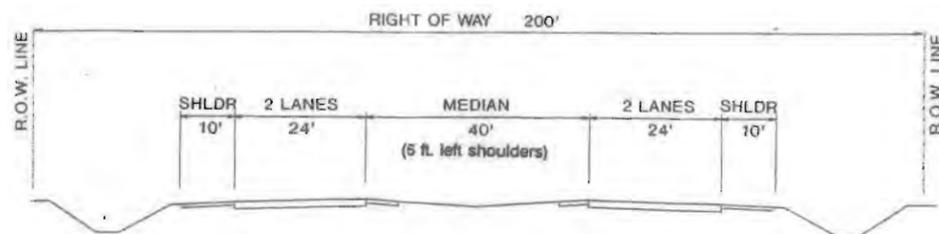


Scale: 0 200 400 feet



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP

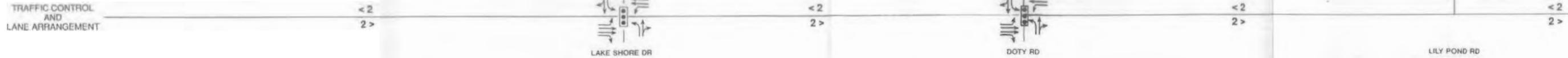


ROADWAY SECTION A-A
DEAN ST TO LAKE AVE

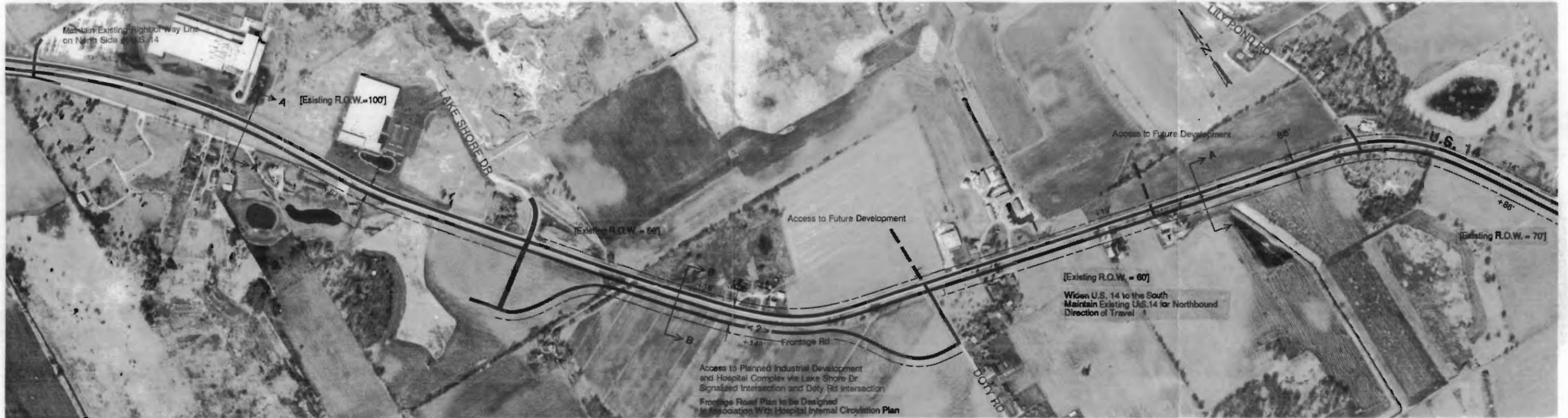
U.S. 14 - PROPOSED PLAN

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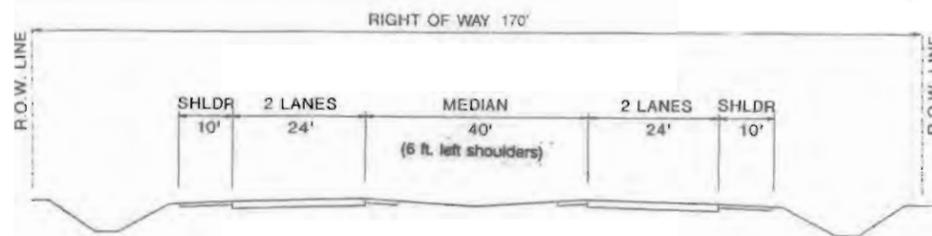


All Crossroads Stop Controlled Unless Otherwise Indicated

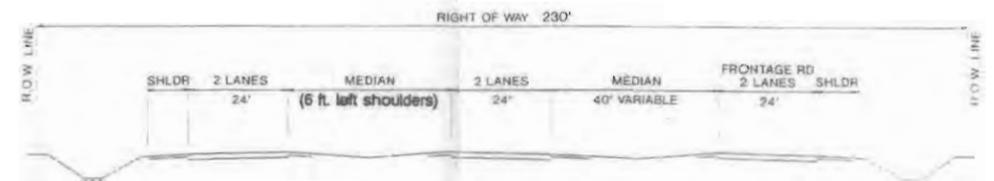


LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



ROADWAY SECTION A-A
WEST OF LAKE SHORE DR TO LAKE SHORE DR
DOTY RD TO LILY POND RD



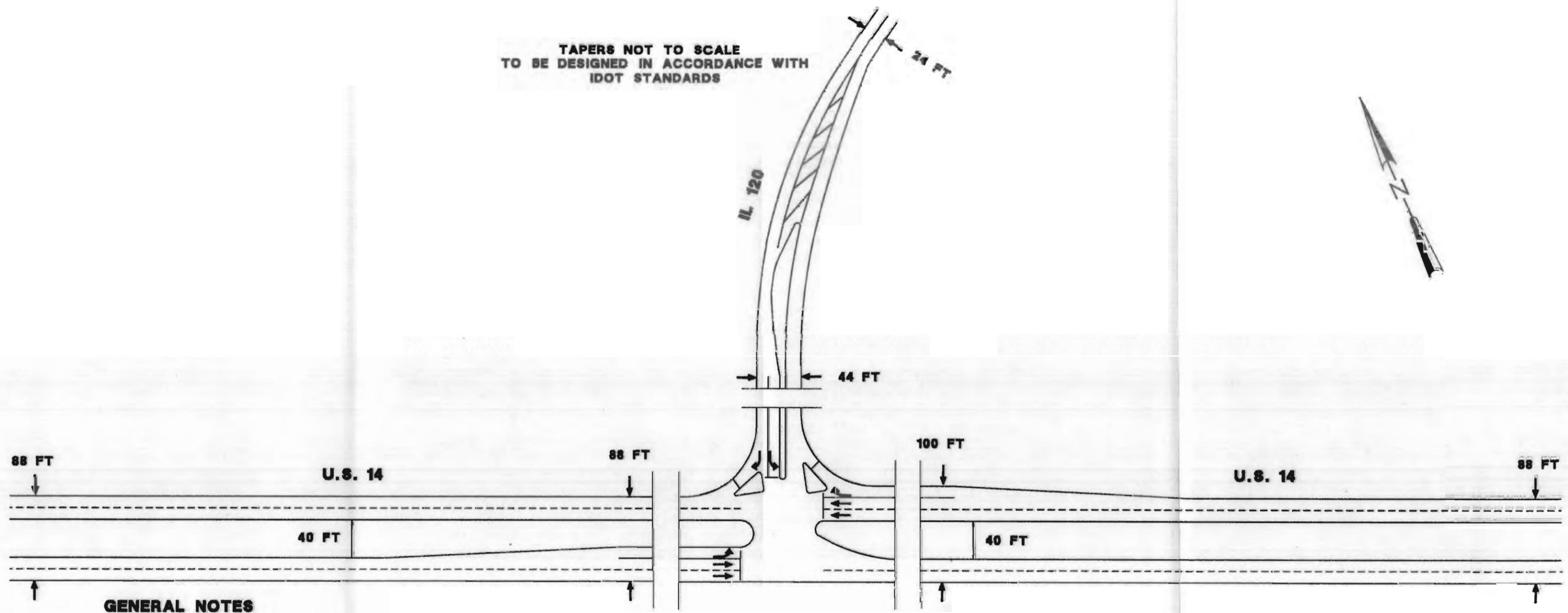
ROADWAY SECTION B-B
LAKE SHORE DR TO DOTY RD

U.S. 14 - 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.

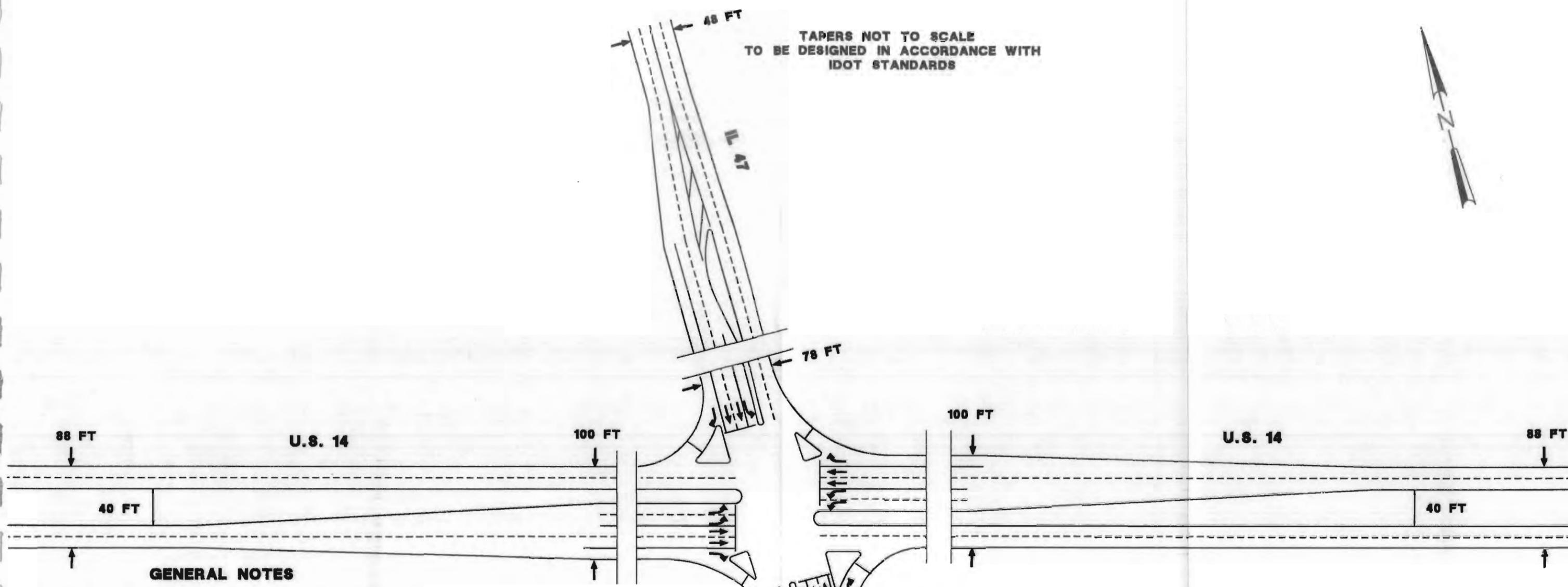
FINAL INTERSECTION APPROACH AND DEPARTURE GEOMETRY TO REFLECT LOCATIONS AND CHANNELIZATION REQUIREMENTS OF ADJACENT MINOR INTERSECTIONS.

**U.S. 14 AND IL 120
INTERSECTION DETAIL**



SCALE 1"=100'

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.

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

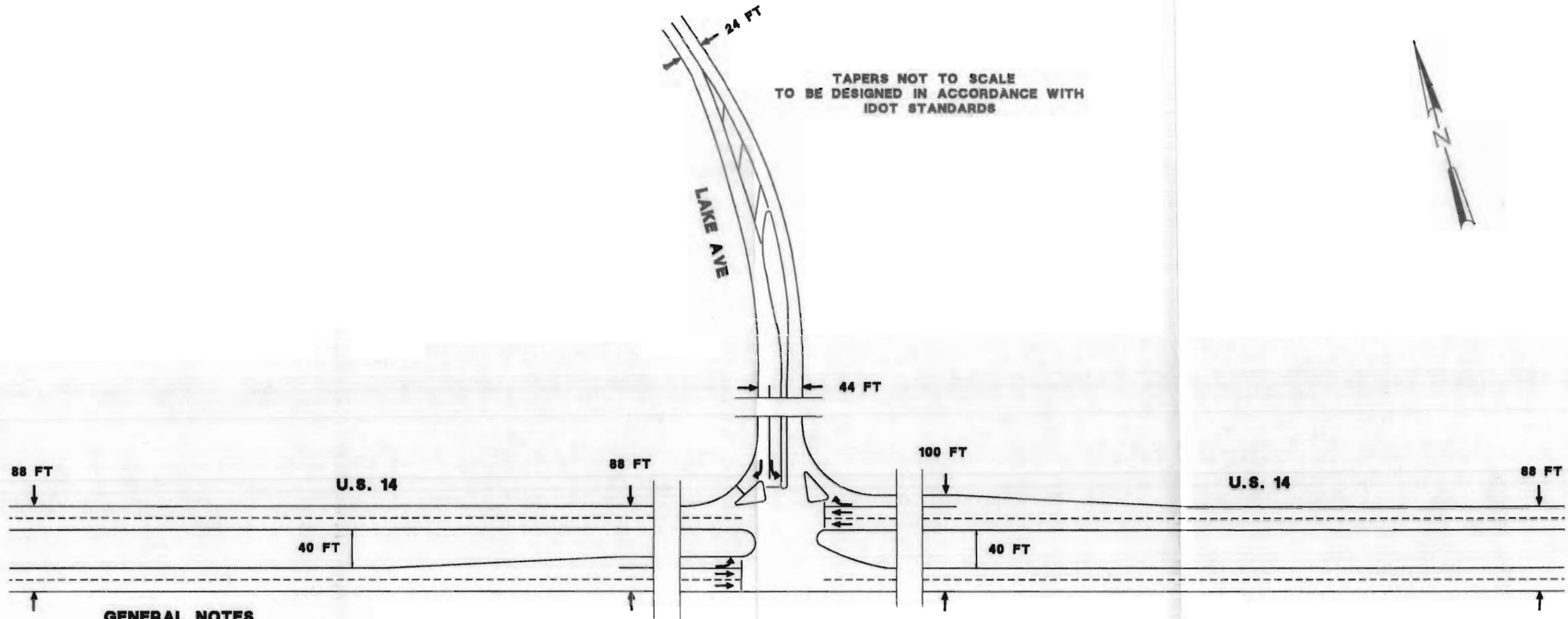
**U.S. 14 AND IL 47
INTERSECTION DETAIL**



SCALE 1"=100'

LAKE AVE
24 FT

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. 14 AND LAKE AVENUE
INTERSECTION DETAILS**



SCALE 1"=100'

Segment III—“Crystal Lake” (Ridgefield Road [North] to Cuba Road)

Segment III travels south from Ridgefield Road (north) to Cuba Road, approximately 14 miles. This segment of U.S. 14 passes through the communities of Crystal Lake, Cary, and Fox River Grove (see Exhibits C-14 to C-26).

Cross Section and Geometric Characteristics

The recommended cross section within this segment includes four basic lanes (two lanes for each direction of travel). The design of this cross section varies throughout this segment, with the median width ranging from 40 feet to 11 feet and the drainage design varying from open (ditch sections) to closed (curb and gutter sections with storm sewers).

South from Ridgefield Road (north) to just south of McHenry County College, the recommended cross section reflects the changing characteristics of adjacent land use from rural in nature to suburban. As shown in Exhibit C-14, the recommended U.S. 14 cross section would be constructed as a four-lane, divided highway with a 40-foot median. Although curb and gutter design would be introduced, open drainage would be maintained to help transition to the more suburban characteristics. This improvement can be constructed within 170 feet of right-of-way.

The widening scheme shown on Exhibit C-14 recommends that all widening occur to the west side of U.S. 14. This scheme would avoid any potential conflict with the Evangelical Lutheran Church at Ridgefield Road (north) and McHenry County College at Lucas Road. The existing two-lane roadway would operate as the new northbound lanes, while the southbound traffic would utilize new lanes constructed to the west. This cross section is compatible with the cross section in Segment II.

North of Lucas Road (see Exhibit C-14), at the existing horizontal curve, it is recommended that the median be reduced to a raised 18-foot median. The open drainage design (ditches) would be eliminated on the outside of the roadway and a closed drainage system would be employed. The cross section would continue to the south to south of Crystal Lake Avenue. It is at this approximate location where the rural SRA classification ends and the suburban SRA classification begins. The 18-foot median design is also consistent with existing and future land use in this area.

Furthermore, the raised median will enable control of cross median access as future development occurs between Lucas Road and Ridgefield Road. This cross section could be implemented within approximately 90 feet of right-of-way. The widening should occur about the existing centerline, requiring the acquisition of 5 to 15 feet of right-of-way from each side of the highway. In addition, realignment/relocation of Ridgefield Road (south) approximately 350 feet to the north is recommended, which would provide greater intersection spacing with the existing intersection at Illinois 176, and also would eliminate the existing skew angle intersection. This should improve the safety and operation of this intersection.

Within Crystal Lake, the four-lane cross section varies. From Crystal Lake Avenue to Dole Avenue, the long-range plan involves widening the existing pavement to provide full-standard, 12-foot-wide lanes, with a 12-foot flush median. The proximity of adjacent land use and the lack of additional right-of-way preclude the implementation of the desirable SRA median width through this segment. However, continuous left-turn protection is provided at all access points. This improvement can be accomplished within the existing right-of-way of 80 feet.

From Dole Avenue to McHenry Avenue, the existing cross section dimension and the existing parking lane on the east side of the road should be maintained. To do so, it is recommended that the existing 10-foot parking lane be reduced to 9 feet, and the existing two-way, 11-foot left-turn lane be reduced to 10 feet. The additional dimension should be added to the existing through lanes, thus providing 11½-foot lanes. Elimination of the existing on-street parking (generally a SRA objective), is not recommended here. There are relatively few existing spaces in the area, and no suitable off-street location could be identified to replace the parking. Expansion of the existing cross section to full/desirable SRA standards also was not practical because of the proximity of adjacent buildings and the resulting lack of available right-of-way.

From McHenry Avenue to approximately Virginia Road, maintaining the existing cross section is recommended. To maintain compatibility with the maximum cross section that can be developed on either side of this section, no expansion to the existing cross section is recommended.

South from Virginia Road to just west of Illinois 31, the recommended cross section calls for expanding the existing cross section by providing a 16-foot mountable (M-2.12) median. Although, the 16-foot median is slightly less than the SRA desirable 18-foot median, this median treatment would not impact adjacent land use and would be compatible with the cross section currently being planned to the south. Additional pavement widening should take place about the existing centerline. This improvement could be made within the existing right-of-way. Other plan recommendations include adding future access roads on the north side of the roadway between Crystal Point Mall and Pingree Road (see Exhibit C-18). These roads would provide access to both existing and future development. Existing access to U.S. 14 then could be consolidated and/or relocated to these new roadways. These new access roads would be connected to U.S. 14 via new signalized intersections along U.S. 14.

At Illinois 31, the 16-foot mountable median should be converted to a raised 16-foot median through the interchange. The existing cloverleaf interchange should be reconstructed. IDOT is currently studying alternatives for this location.

South from Illinois 31 to south of Cary Road, the recommended cross section is four basic lanes and a 16-foot mountable median. The existing horizontal curve south of Sands Road should be reconstructed to provide a smoother, 7-degree curve, which would require total reconstruction of the structure carrying the C&NW Railroad over U.S. 14. The recommended cross section is compatible with the July 1984 IDOT Phase I study. Existing right-of-way is sufficient in this area to implement the above recommendations.

Proceeding south from Cary Road through Cary to north of the Illinois 22 SRA intersection, maintaining the existing four-lane cross section is recommended. Widening the existing pavement is not possible within existing right-of-way. With the proximity of adjacent land uses and existing grades, widening to provide either 12-foot lanes or a wider median might result in significant impacts to existing land use. Furthermore, any widening would be incompatible with the newly-constructed five-lane structure over the Fox River. These conditions constrain cross-sectional improvements to the north and south of the river.

Other recommendations in this area include adjusting the profile of Cary Road to intersect at grade with U.S. 14. Cary Road should also be grade-separated with the Metra C&NW Northwest Railroad. These proposed recommendations are consistent with others documented in IDOT's July 1984 Phase I study for this area.

The existing intersection of Main Street and U.S. 14 opposite the Cary train station can remain as recently improved. Within the existing constraints (the proximity of the train station and the existing railroad tracks), additional geometric improvements (such as roadway relocations or lane additions) would impact the area adversely. Improvements in this area should focus on providing the most efficient signal timing and control possible, providing good signal progression along U.S. 14 through the existing signals at Main Street and First Street. The recommended plan also includes improving the connection between the Jandus Road Cut-off/Lake Julian Lane and U.S. 14. This would promote or enable traffic to/from U.S. 14 to/from Main Street to the west to use the Jandus Road Cut-off to bypass the U.S. 14/Main Street intersection. Lastly, the intersection at Spring Beach Road is shown relocated and reconstructed to eliminate the existing offset intersections and to provide a conventional four-leg intersection.

North and south of Illinois 22, between School Drive and Illinois 22 and between Illinois 22 and Doyle Road, the plan recommends implementing a raised 16-foot median (see cross section in Exhibit C-24). Primary access to development east of U.S. 14 would be accommodated off of School Drive and Doyle Road. Access to/from U.S. 14 would be restricted to right-in/right-out movement only. It is recommended that a third through lane be added northbound in advance of the intersection with Illinois 22 and be carried through the intersection. Roadway widening in this area would require approximately 5 to 10 feet of additional right-of-way. The plan calls for widening to take place to the east, eliminating any impact to the existing "savannah" area locked between U.S. 14 and the C&NW Railroad. However, widening to the east may impact an existing underground wastewater lift station located in the northeast quadrant of the U.S. 14/Illinois 22 intersection. Future Phase I studies would better estimate right-of-way needs required for these improvements.

South from Illinois 22 to Cuba Road, the existing cross section transitions from an urban four-lane design to a rural four-lane design, with a 40-foot depressed median and open drainage. Although there is sufficient right-of-way to accommodate additional basic lanes, it is recommended that the existing cross section be retained without further expansion, which would maintain the consistency and continuity of the four-lane facility and would tie into the four-lane sections proposed north and the south of this section.

Two locations along U.S. 14 within this segment are located within a floodplain, south of Doyle Road and north of Cuba Road at Flint Creek. Because no widening is to occur at these locations, compensatory storage does not need to be considered as a result of future improvements. However, in other locations, such as northern Crystal Lake, drainage requirements may result in the need to modify the existing profile of U.S. 14. A final determination of profile adjustments would be made in subsequent Phase I studies.

Traffic Control, Operations, and Safety

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 traffic signals and the location of median access control.

The diagrams along the top of each SRA plan exhibit indicate locations of proposed or ultimate signalized intersections, the lane arrangements at these intersections, and the spacing to adjacent signalized intersections. Median access breaks are shown on the plan, but are limited primarily to at-grade intersections. Where no median break is shown, it is the intent of the plan that vehicles entering or exiting driveways be restricted to right-in/right-out movements only. Intersection details for key intersections within this segment are provided in Exhibits D-4 to D-7.

In the northern portion of Crystal Lake along U.S. 14, the traffic control plan identifies three locations for potential signalized intersections. These locations include the intersections of U.S. 14 with Ridgefield Road (north), Lucas Road, and Ridgefield Road (south). These signals are located and recommended to serve future commercial development that is anticipated north of Crystal Lake. In locating these signals (and other future signals), SRA guidelines for signal spacing were referenced,

and local network considerations and future land uses were reviewed to fix the locations. South of Ridgefield Road (south) through Crystal Lake, the plan calls for retention of existing signals from Illinois 176 to Crystal Point Mall.

At Main Street in Crystal Lake, the existing signalized intersection would be upgraded significantly. To be consistent with plans of the City of Crystal Lake, Main Street would be upgraded to a four-lane arterial (two lanes in each direction of travel). U.S. 14 would be widened on the approaches to this intersection to develop a 30-foot median for dual left-turn lanes. In addition, the existing railroad tracks running north-south and parallel to Main Street would be removed and replaced with a bike path. An intersection detail of this area is provided in Exhibit D-5.

Upgrading the existing signalization, accompanied by increased capacity improvements, would serve long-range needs. Between the Crystal Point Mall and Pingree Road, two future signals are proposed to serve existing and future land use in this area, and to enable access to planned future access roads. The first signalized intersection is proposed at the location of a new north-south arterial planned by Crystal Lake (in the 1988 Crystal Lake Comprehensive Plan). This new roadway will intersect U.S. 14 approximately 550 feet east of the existing signal located at the entrance to a retail mall (see Exhibit C-18). Because of the proximity of this new signal to the existing signal serving the mall, the plan recommends removing the signal at the mall entrance when this new signal becomes operational. This modification would provide good signal spacing to the next signal to the west at Crystal Point Mall. The second potential signal would be located 1,500 west of Pingree Road. These new signals would serve existing and future land use in this area and would provide direct access to the recommended future access roads. These potential future signals approximately meet the SRA desirable signal spacing of greater than or equal to $\frac{1}{4}$ mile.

Illinois 31, another SRA route, currently intersects U.S. 14 in the town of Cary. The existing intersection is a cloverleaf interchange. Because an interchange study is being performed currently to determine an improved configuration of this interchange, specific plan improvements are not shown at this location. However, immediately east of Illinois 31 at Sands Road, a future signal is recommended to serve anticipated future commercial and industrial development. It is essential that plans for a new interchange configuration at Illinois 31 consider the proximity of this potential future signal.

The next recommended location for a major signalized intersection is at Cary Road. This location, discussed in the above section on geometric characteristics, would be converted from a grade separation to a new at-grade intersection. Through Cary, the only other location where a signal is proposed in the future is at the Jandus Road Cut-off; this future signal location would promote the movement to/from U.S. 14 to the south to/from Main Street to the west. This improvement is currently programmed in IDOT's proposed Highway Improvement Plan. See Table 20 for an evaluation of signalized intersection operations for Segment III.

The western terminus of Illinois 22, also a SRA, forms an at-grade "T-intersection" with U.S. 14. This existing signalized intersection would be upgraded significantly. Dual left-turn lanes would be provided on southbound and westbound approaches, and a third through lane would be added through the intersection in the northbound direction to increase capacity. The additional through lane should be developed at least 1,000 feet from the intersection, and extend 1,000 feet north of the intersection before it tapers back to two lanes. Other improvements include a dual right-turn lane westbound and a right-turn lane northbound. See the Illinois 22 intersection detail provided in Exhibit D-6.

Two new locations, north and south of Illinois 22, have been identified for potential signals. A new signalized intersection is proposed at the newly-constructed intersection of U.S. 14 and Foxmoor Drive, north of Illinois 22. This intersection would provide direct access to the growing commercial development in the northeast quadrant of U.S. 14 and Doyle Road, south of Illinois 22. The intersection also would serve as the primary access to commercial development in the southeast quadrant of the U.S. 14 and Illinois 22 intersection.

It is recommended that southbound right-turn lanes be added to the signalized intersections of U.S. 14 with Three Oaks Road, Kelsey Road, and Cuba Road. These lanes should be provided to accommodate vehicle queuing resulting from conflicts with the Metra C&NW Railroad crossing, which crosses these roads at grade. Furthermore, additional studies should be made to ensure that adequate turn-lane storage is provided for both the southbound right-turn and the northbound left-turn lanes.

Table 20
Evaluation of Signalized Intersection Operations Along
Segment III (North of Ridgefield Road to South of Cuba Road) of U.S. 14

Intersection of U.S. 14 and:	Lane Arrangements ^b		Year 2010 ADT (vpd) ^c		v/c for Intersection ^d
	SRA	Crossroad	SRA	Crossroad	
Ridgefield Road (north) ^a	L-TT-R	L-TR	15,500	5,000	0.47
Lucas Road ^a	L-TT-R	L-TR	15,800	5,000	0.48
Ridgefield Road (south) ^a	L-TT-R	L-TR	15,800	5,000	0.48
Illinois 176 ^a	L-T-TR	L-T-R	24,400	12,000	0.98
Woodstock Avenue ^a	L-T-TR	L-TR	24,900	5,000	0.70
Crystal Lake Avenue ^a	L-TT-R	L-T-TR	24,900	12,000	0.71
Dole Avenue ^a	L-TT-R	L-TR	52,100	12,000	1.55
McHenry Avenue ^a	L-T-TR	L-TT-R	52,100	12,000	1.28
Devonshire Lane ^a	L-TT-R	L-TR	37,800	5,000	0.89
Virginia Road ^a	L-TT	L-R	37,800	12,000	1.02
Teckler Boulevard ^a	L-TT-R	L-TR	24,800	5,000	0.66
Main Street ^a	LL-TT-R	L-TT-R	24,800	12,000	0.57
Crystal Point Mall ^a	L-T-TR	L-TR	24,800	5,000	0.70
East of Crystal Point Mall ^a	L-TT-R	L-TR	34,150	5,000	0.82
West of Pingree Road ^a	L-TT-R	L-TR	34,150	5,000	0.82
Pingree Road ^a	L-T-TR	L-TR	43,900	12,000	1.38
Sands Road ^a	L-T-TR	L-TR	33,800	5,000	0.91
Three Oaks Road ^a	L-TT-R	L-TR	39,500	12,000	1.21
Cary Road ^a	L-TT-R	L-TR	40,200	12,000	1.21
Main Street ^a	L-TT	L-T	40,200	5,000	1.02
First Street ^a	L-TT	L-R	41,800	5,000	1.02
Main Street ^a	L-TT	L-R	41,800	12,000	1.16
Lake Julian Road ^a	L-T-TR	L-TR	41,800	5,000	1.06
Lincoln Avenue ^a	L-T-TR	L-TR	55,700	5,000	1.34
Algonquin Road ^a	L-T-TR	L-TR	55,700	5,000	1.34
Illinois 22 ^a	LL-TT	LL-RR	55,700	23,900	1.11
Kelsey Road ^a	L-TT-R	L-TR	35,000	5,000	0.84
Cuba Road ^a	L-TT-R	L-TR	35,100	12,000	1.10

Note: ^aDenotes SRA corridor.

^bAssumed for unavailable volumes: 20,000 vpd for major arterials, and 12,000 vpd for minor arterials, 5,000 vpd for local roadways.

^cL = Left-turn lane; T=through lane; R=right-turn lane; and TR=through and right-turn lanes.

^dADT = Average Daily Traffic.

^ev/c = Volume to Capacity Ratio.

The proposed plan exhibits also indicate locations of proposed median openings or locations where median openings should be eliminated. Notably, between Illinois 22 and south of Cuba Road (see Exhibits C-25 and C-26), closing of existing median openings is recommended. Where existing median openings are maintained, they should be designed to adequately accommodate “U-turning” vehicles. Where an existing driveway accesses U.S. 14 and no opening is shown, it is the intent of the plan that the driveway serve right-in/right-out movements only. Exhibit D-7 shows intersection details of the U.S. 14 intersection with Cuba Road.

The traffic control and geometric plan for Segment III should improve the existing operations, capacity, and safety of U.S. 14. For this segment, it is especially important to provide good operations at the existing signalized intersection because these signals ultimately will control or constrain the operation of U.S. 14.

Within Crystal Lake, the planning-level capacity analysis identifies two intersections where the recommended plan would not accommodate the traffic volume forecasted by CATS. At Dole Avenue, the future overall intersection volume to capacity (v/c) ratio was computed at 1.55 and at McHenry Avenue the v/c was calculated as 1.28. Although both of these ratios are significantly greater than 1.00, it should be noted that the CATS forecast for these crossroads is significantly greater than the existing ADT along U.S. 14 (52,100 vpd forecasted versus 18,100 vpd recorded in 1989). Similarly, south of Pingree Road through Cary, v/c ratios somewhat greater than 1.00, assuming CATS forecasts, were calculated at most signalized intersections. The exceptions are at the signalized intersections at Sands Road and Kelsey Road, where v/c ratios are 0.91 and 0.84, respectively.

In general, the recommended plan outlined for this segment should be able to accommodate about 75 percent of the CATS forecast. This estimate is based on the capacity of this segment as defined by the operation of the signalized intersections along it. Because the CATS forecast originally assumed a six-lane capacity for U.S. 14, the v/c ratios discussed above are not surprising.

Public Transportation

The Metra C&NW Northwest commuter rail line currently serves this segment of the corridor at stations located in Crystal Lake, Cary, and Fox River Grove. Metra is evaluating an extension of the McHenry Branch of this line. Along with this plan, a

new station is proposed at Pingree Road to relieve the Crystal Lake Metra Station. Crystal Lake riders will have access to the McHenry Branch trains with the proposed extension, unlike the current arrangement. In addition, an improved, uniform sign system providing directional signs to the Crystal Lake and Fox River Grove Metra Stations is recommended. Considering growth in ridership and the limited reserve capacity of existing parking at the Cary and Fox River Grove Metra Stations, it is recommended that additional parking be identified, as necessary, for future use.

Although there are no proposed bus route additions for this section of U.S. 14, as population and development increase, more bus routes may be warranted. Future bus turnout areas will require 5 to 10 feet additional right-of-way. Furthermore, bus waiting shelters and paved sidewalks for pedestrians also should be considered. Appropriate standards for locating and marking bus stops should be followed. Recommendations include installing well-marked bus shelters in Crystal Lake at the McHenry County College and at the shopping areas served by Pace Route 806.

Consideration should be given to preserving right-of-way at the Illinois 31 and U.S. 14 interchange, and at the intersection of U.S. 14 and Illinois 176 for future park-n-ride facilities. In addition, a park-n-ride facility also should be located in the vicinity of the SRA-to-SRA intersection of U.S. 14 and Illinois 22 in Fox River Grove.

Construction and Right-of-Way Costs

The consultant's opinion of the total cost of the recommended plan for Segment III is \$40.5 million in 1991 dollars (see Table 21). This cost includes roadway and intersection reconstruction, right-of-way acquisition, and structure reconstruction. (In Segment III, new or reconstructed structures include a new structure to carry the Metra C&NW Northwest Railroad over U.S. 14, and a new structure to carry the Metra C&NW Northwest Railroad over Cary Road.)

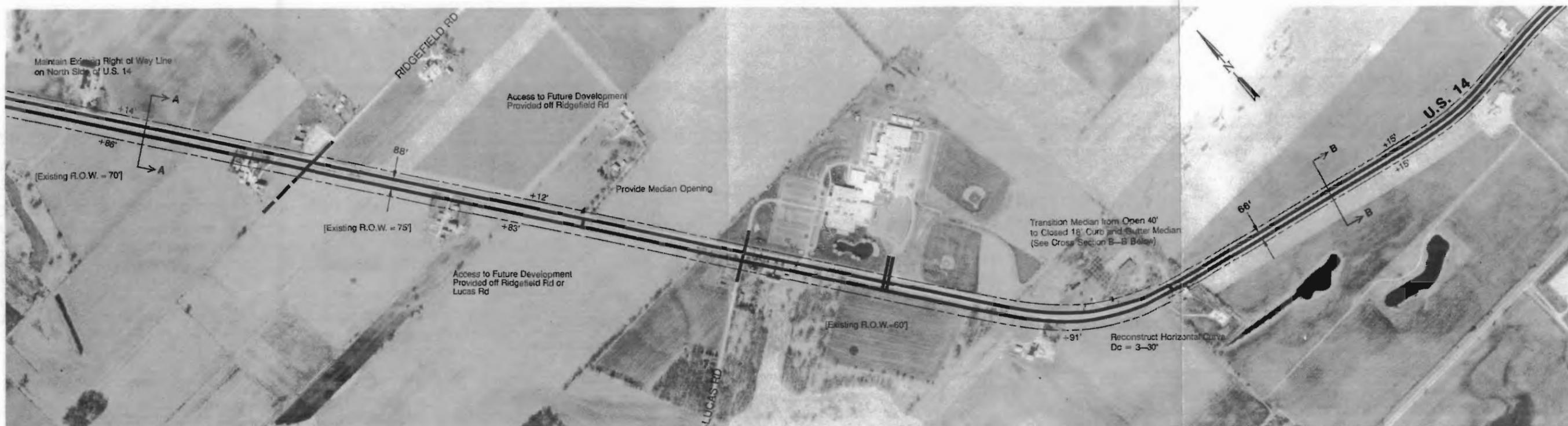
The construction cost is estimated to be \$37.0 million, which includes converting portions of U.S. 14 from a two-lane undivided roadway to a four-lane divided facility, widening the existing four-lane facility, and improving existing intersections. The right-of-way acquisition cost is based on the estimated costs of the various types of land uses that would be acquired. It is estimated that 11.9 acres of right-of-way will need to be acquired at a cost of \$3.4 million.

Table 21
Opinions of Construction and Right-of-Way Cost
for SRA Improvements Along Segment III (North of Ridgefield
Road to South of Cuba Road) of U.S. 14
(1991 Dollars)

Roadway Reconstruction	\$26,130,000
Intersections/Interchanges (Ridgefield Road (North), Ridgefield Road (South), Lucas Road, Crystal Lake Mall, Sands Road, Cary Road, Jandus Road Cut-off, Illinois 22 [SRA], and Cuba Road)	9,400,000
Structures and Retaining Walls (Metra C&NW Railroad and Cary Road)	1,500,000
Other	-0-
Subtotal	37,030,000
Right-of-Way	3,440,000
TOTAL	<u>\$40,470,000</u>

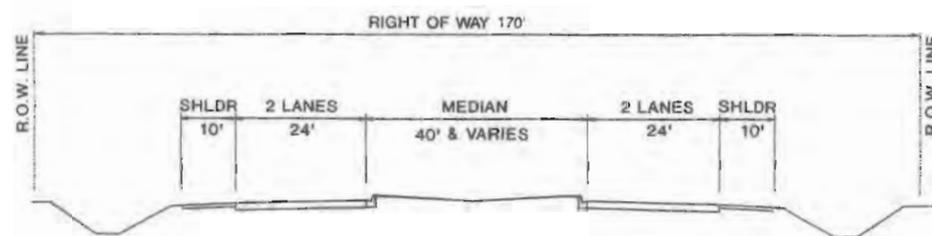


All Crossroads Stop Controlled Unless Otherwise Indicated

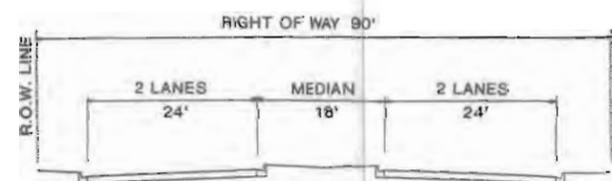


LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



ROADWAY SECTION A-A
NORTH OF RIDGEFIELD RD TO SOUTH OF LUCAS RD

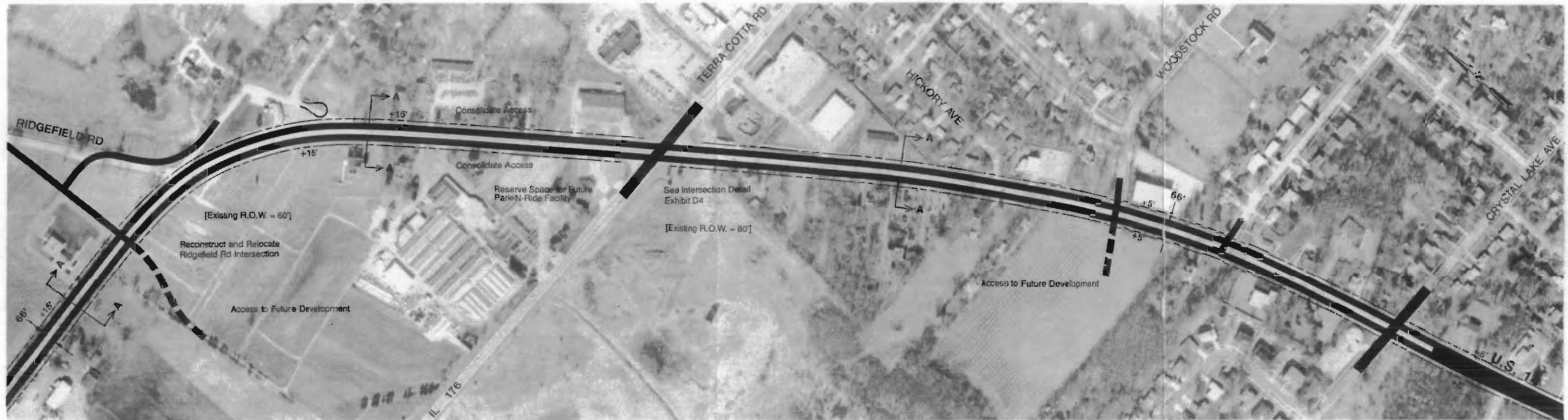
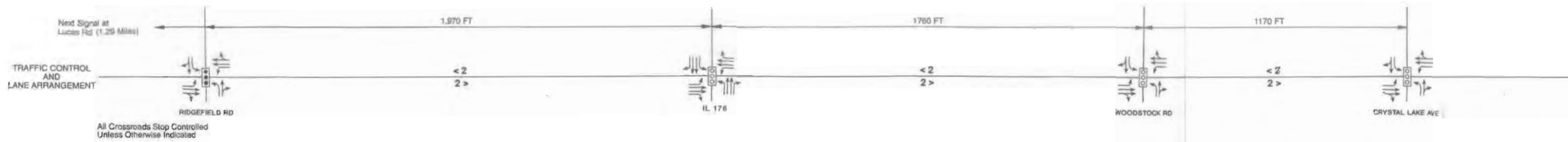


ROADWAY SECTION B-B
SOUTH OF LUCAS RD

U.S. 14 - PROPOSED PLAN

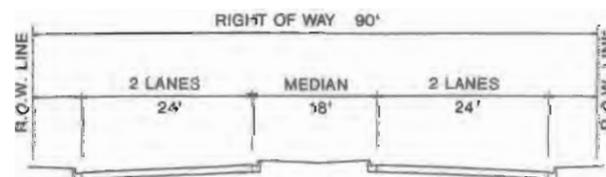
Prepared by CH2M HILL in association with
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ILLINOIS DEPARTMENT OF TRANSPORTATION





LEGEND

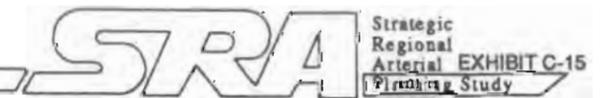
- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP

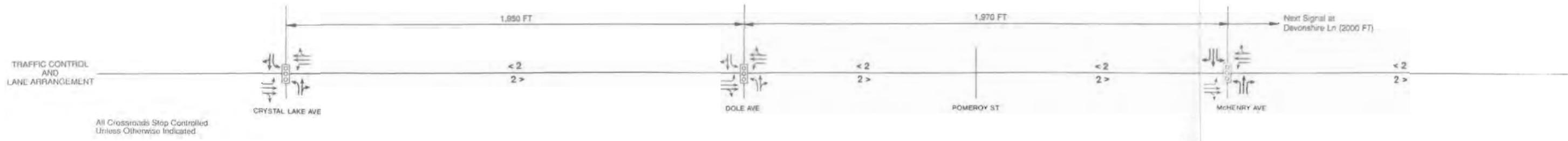


U.S. 14 - PROPOSED PLAN

Prepared by CH2M HILL in association with
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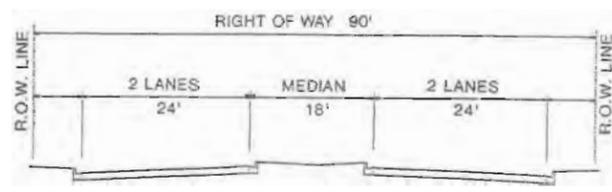
ILLINOIS DEPARTMENT OF TRANSPORTATION



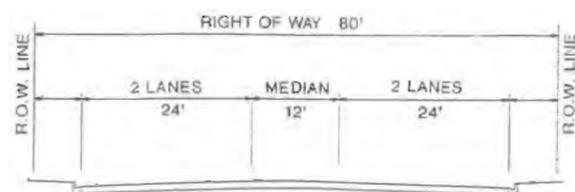


LEGEND

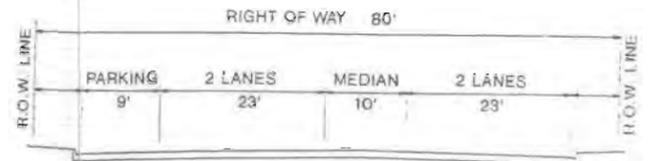
-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



ROADWAY SECTION A-A
NORTH OF CRYSTAL LAKE AVE



ROADWAY SECTION B-B
SOUTH OF CRYSTAL LAKE AVE TO DOLE AVE
SOUTH OF McHENRY AVE

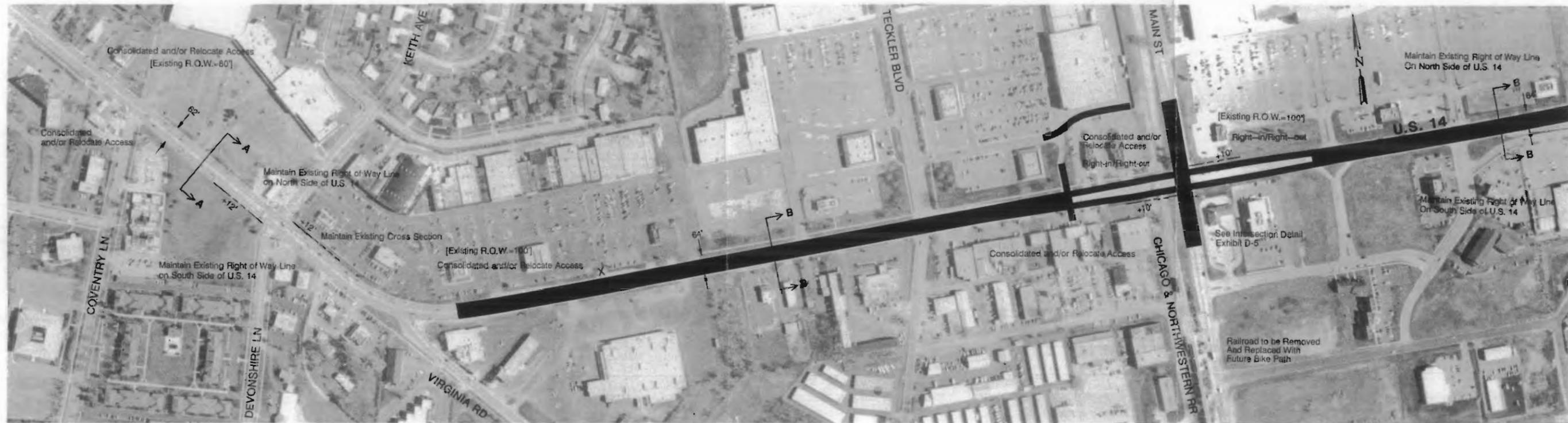
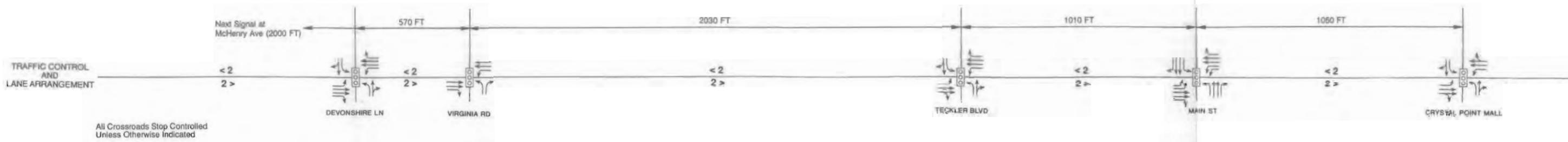


ROADWAY SECTION C-C
DOLE AVE TO McHENRY AVE

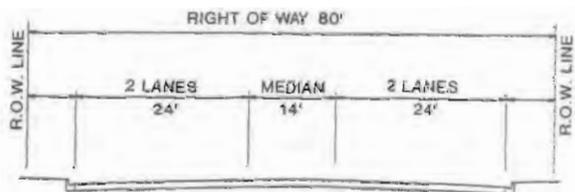
U.S. 14 - PROPOSED PLAN

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ILLINOIS DEPARTMENT OF TRANSPORTATION

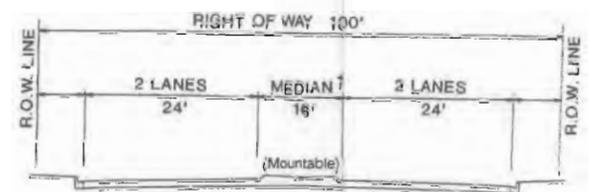




- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP



ROADWAY SECTION A-A
COVENTRY LN TO VIRGINIA RD

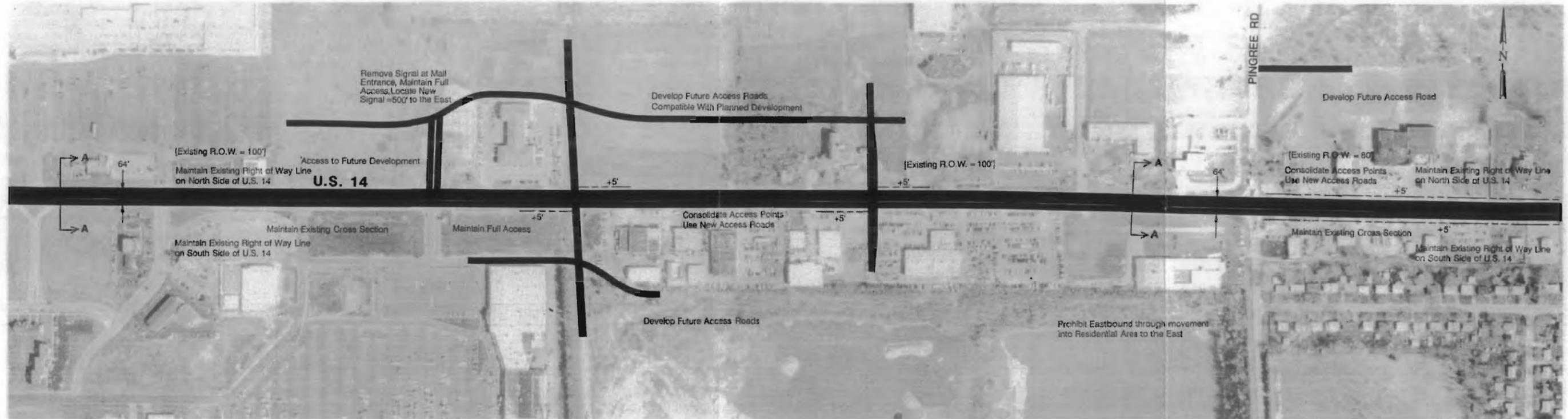
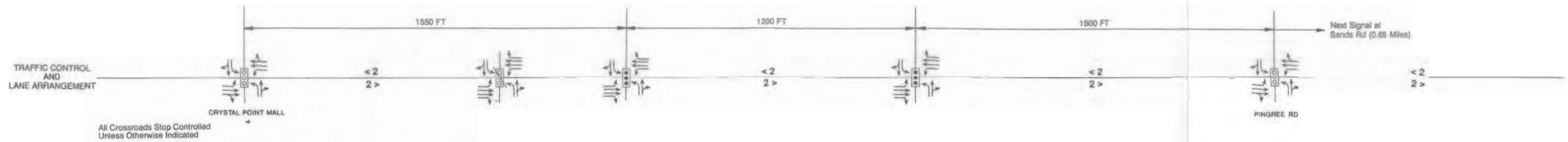


ROADWAY SECTION B-B
VIRGINIA RD TO EAST OF MAIN ST
† 30' Median Developed on Both Approaches to Intersection

U.S. 14 - PROPOSED PLAN

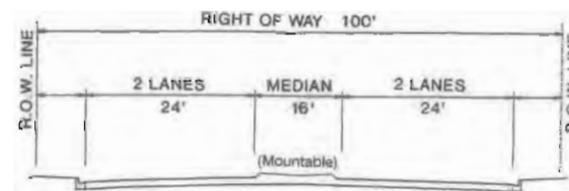
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LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP

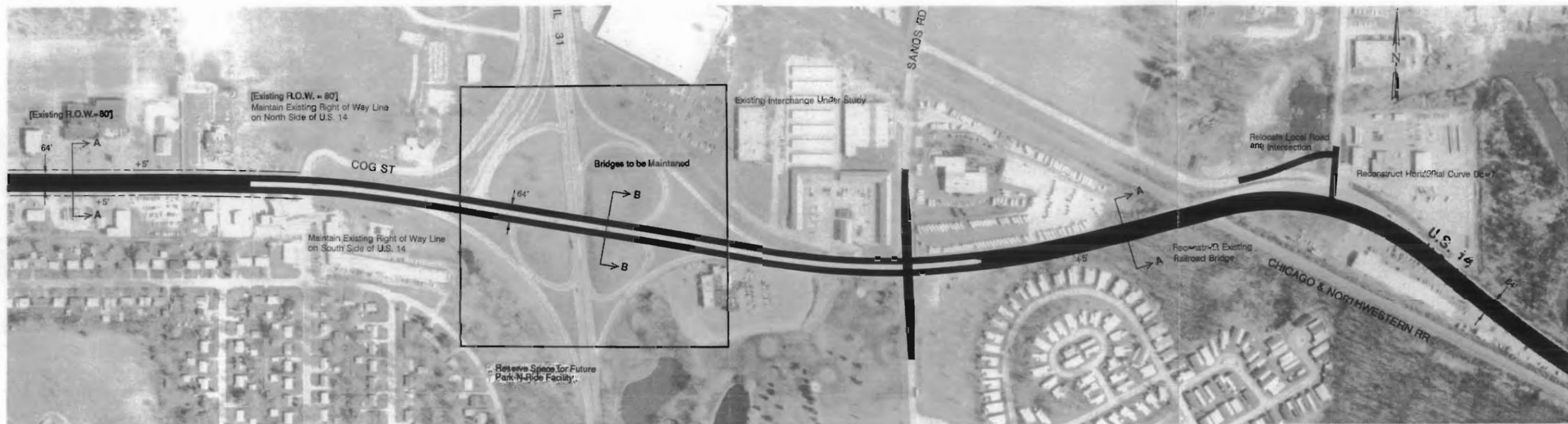
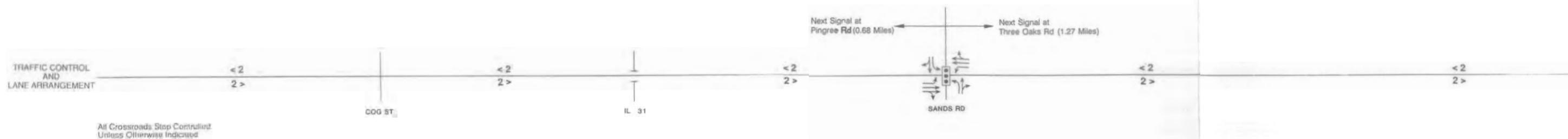


ROADWAY SECTION A-A
CRYSTAL POINT MALL DR TO PINGREE RD

U.S. 14 - PROPOSED PLAN

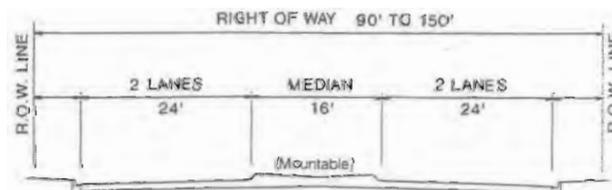
Prepared by CH2M HILL in association with
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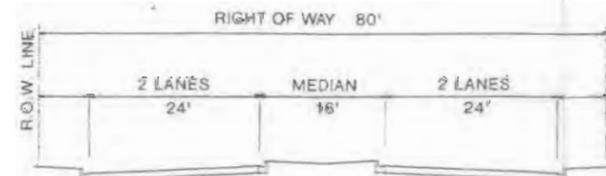


LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



ROADWAY SECTION A-A
WEST OF COG ST
EAST OF SANDS RD

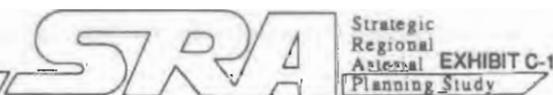


ROADWAY SECTION B-B
COG ST TO EAST OF SANDS RD

U.S. 14 - PROPOSED PLAN

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

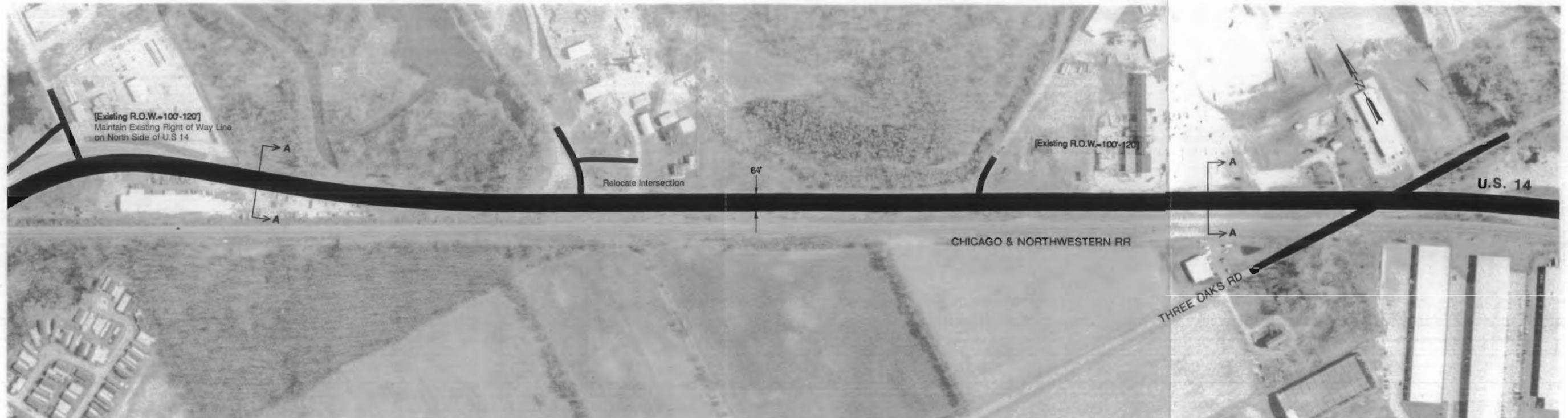
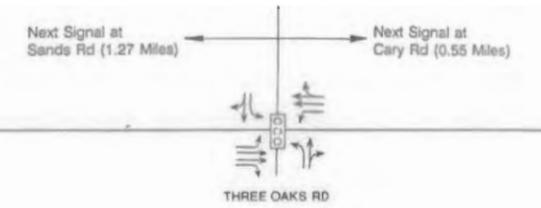
ILLINOIS DEPARTMENT OF TRANSPORTATION



TRAFFIC CONTROL AND LANE ARRANGEMENT

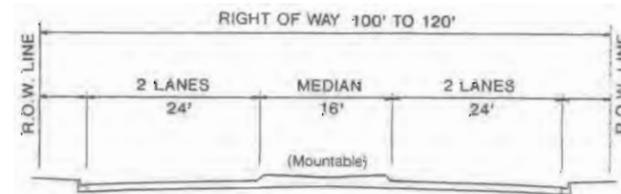
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2 >

All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



ROADWAY SECTION A-A
EAST OF SANDS RD TO THREE OAKS RD

U.S. 14 - PROPOSED PLAN

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



TRAFFIC CONTROL AND LANE ARRANGEMENT

< 2
2 >



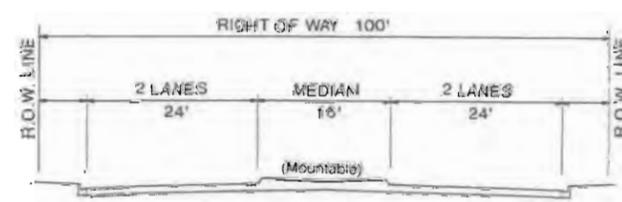
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BORDEN AVE

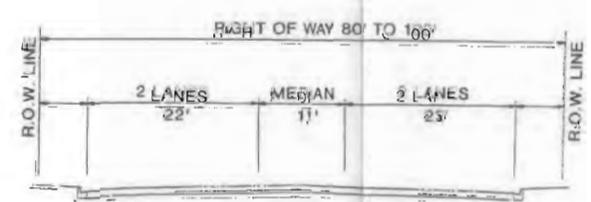
All Crossroads Stop Controlled Unless Otherwise Indicated



- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP



ROADWAY SECTION A-A
THREE OAKS RD TO WEST OF SILVER LAKES RD

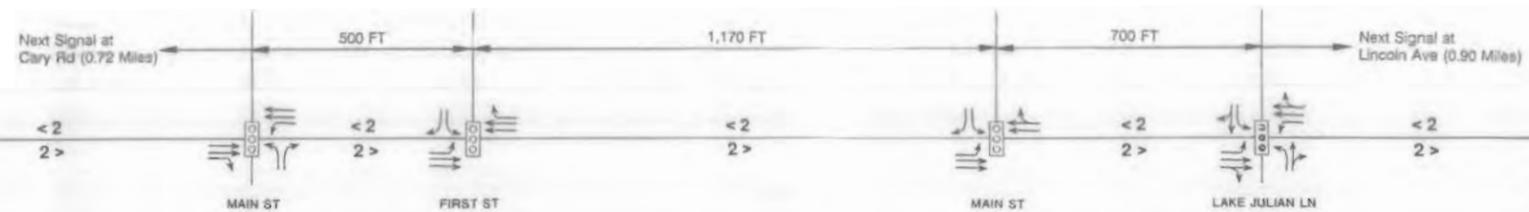


ROADWAY SECTION B-B
EAST OF SILVER LAKES RD TO BORDEN AVE

U.S. 14 - RECOMMENDED PLAN

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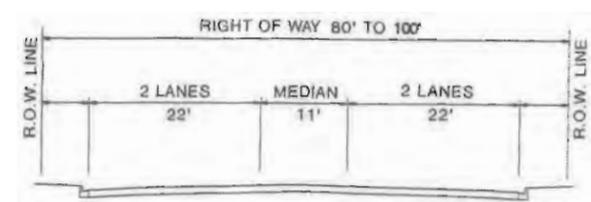


All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



ROADWAY SECTION A-A
BORDEN AVE TO SPRING BEACH RD

U.S. 14 - PROPOSED PLAN

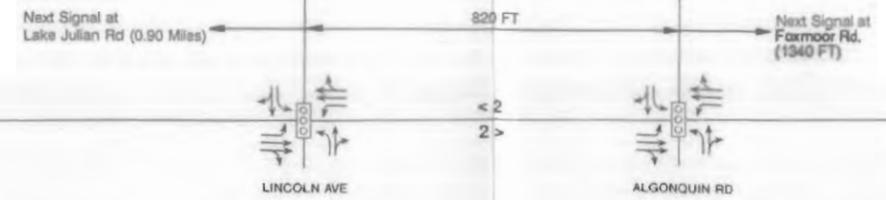
Prepared by CH2M HILL in association with METRO Transportation Group and EJM Engineering
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TRAFFIC CONTROL AND LANE ARRANGEMENT

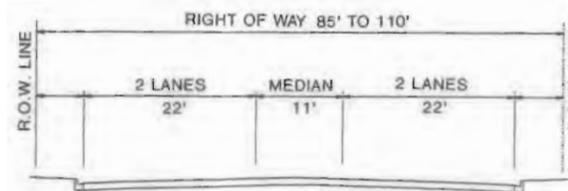
SPRING BEACH RD
All Crossroads Stop Controlled Unless Otherwise Indicated

< 2
2 >



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



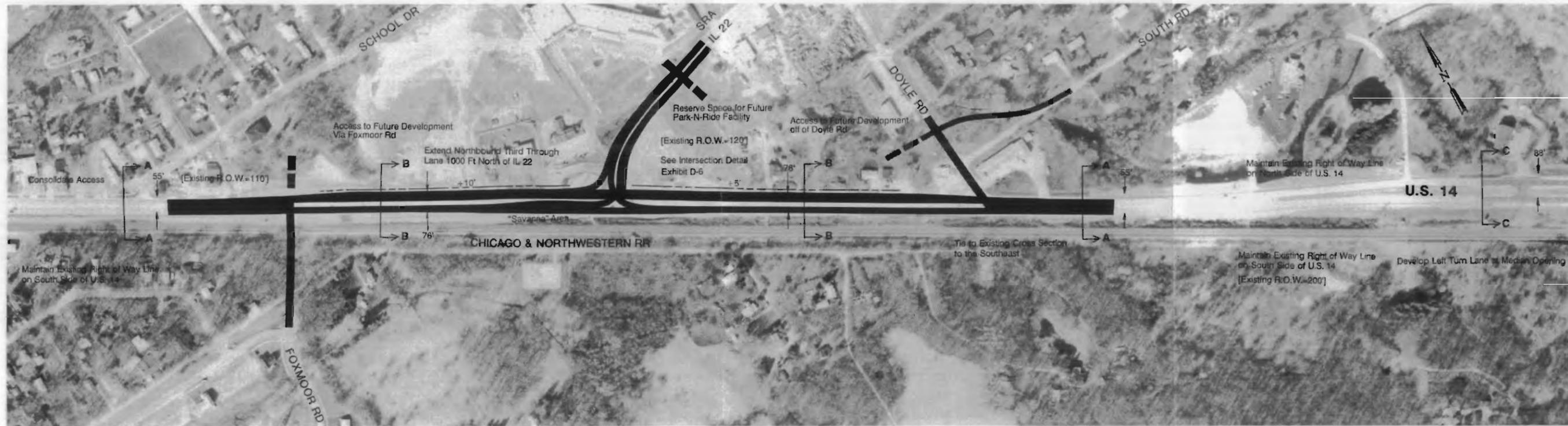
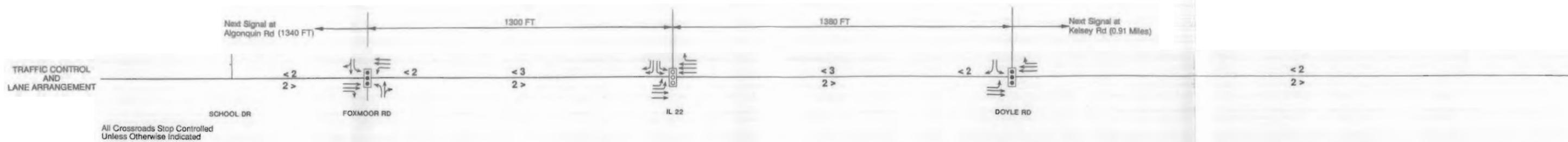
ROADWAY SECTION A-A
SPRING BEACH RD TO SCHOOL DR

U.S. 14 - PROPOSED PLAN

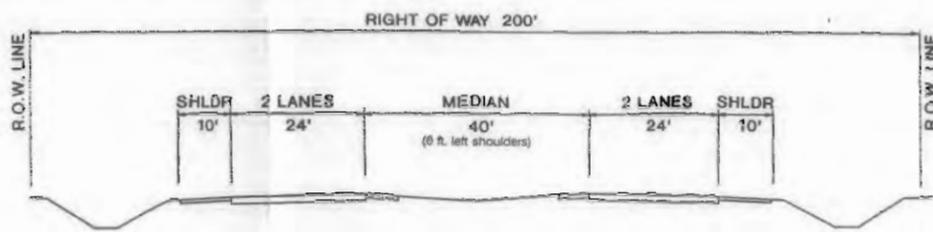
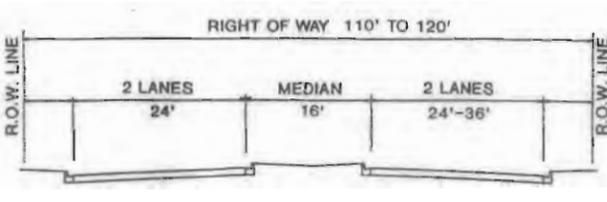
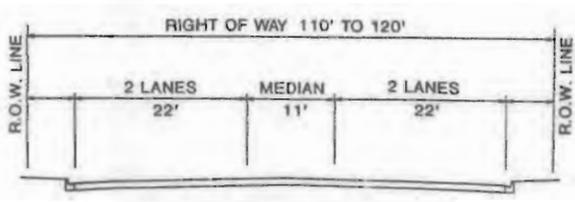
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ILLINOIS DEPARTMENT OF TRANSPORTATION



Scale: 0 100 200 feet



- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP



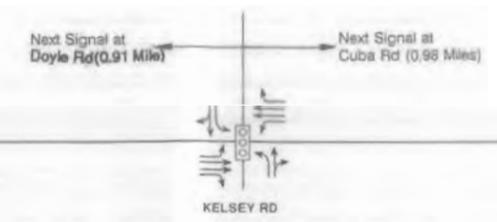
U.S. 14 - PROPOSED PLAN

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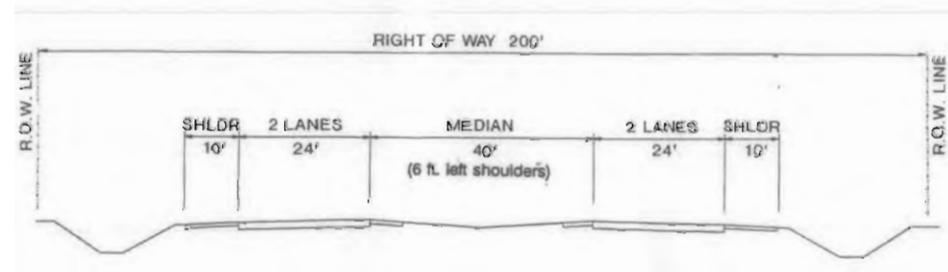
TRAFFIC CONTROL AND LANE ARRANGEMENT

All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



U.S. 14 - PROPOSED PLAN

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

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TRAFFIC CONTROL
AND
LANE ARRANGEMENT

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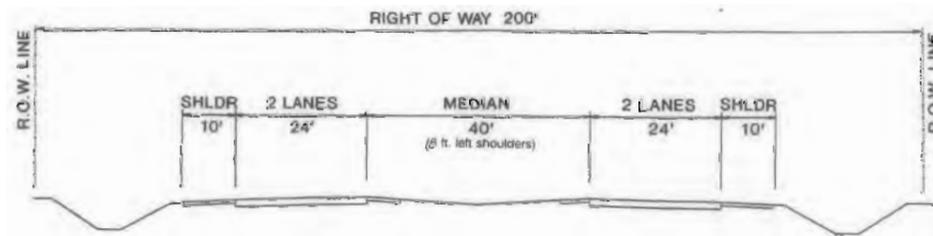


All Crossroads Stop Controlled
Unless Otherwise Indicated



LEGEND

- EXISTING SIGNAL
- POTENTIAL SIGNAL
- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



ROADWAY SECTION A-A
WEST OF FLINT CREEK TO EAST OF CUBA RD

U.S. 14 - PROPOSED PLAN

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

ILLINOIS DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

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

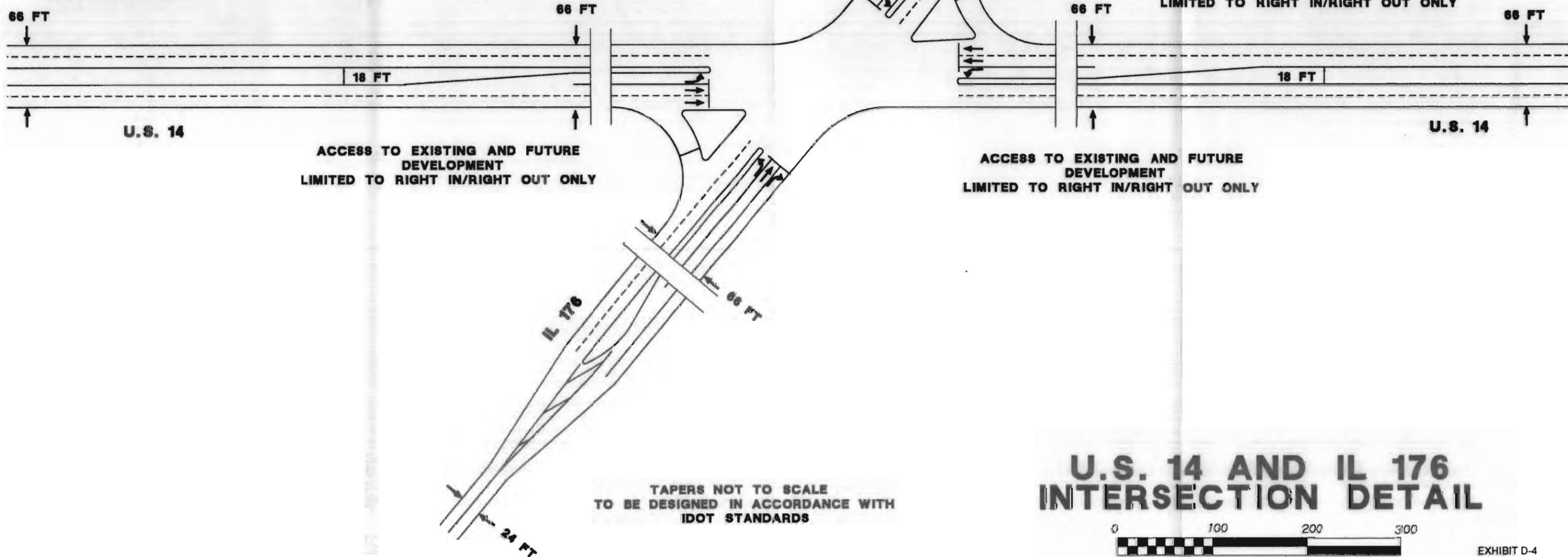
LENGTHS OF LEFT AND RIGHT TURN LANES TO BE DETERMINED DURING DETAILED TRAFFIC STUDIES IN PHASE I PLANNING.

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. 14 AND IL 176 INTERSECTION DETAIL

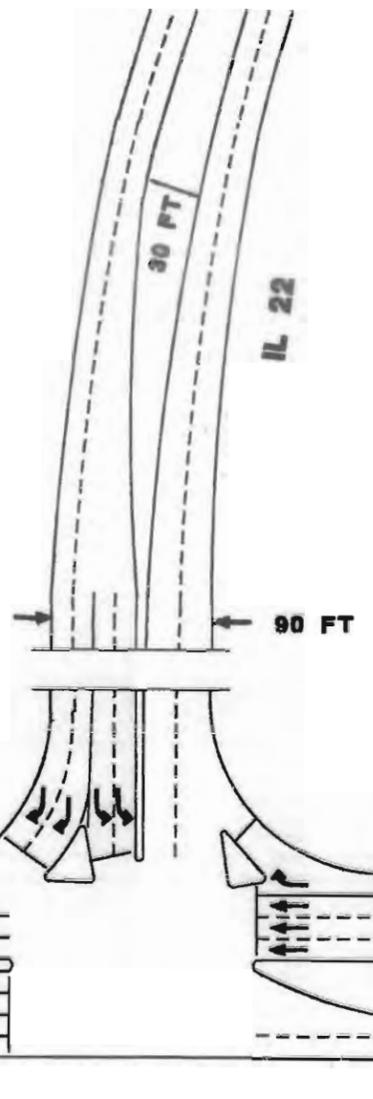
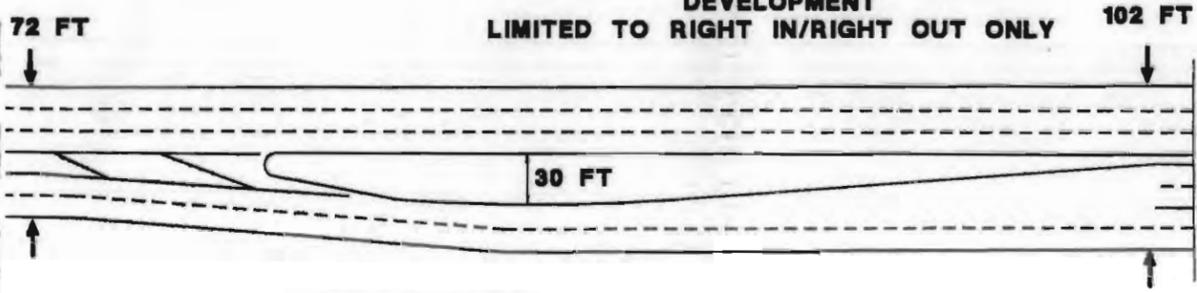


SCALE 1"=100'



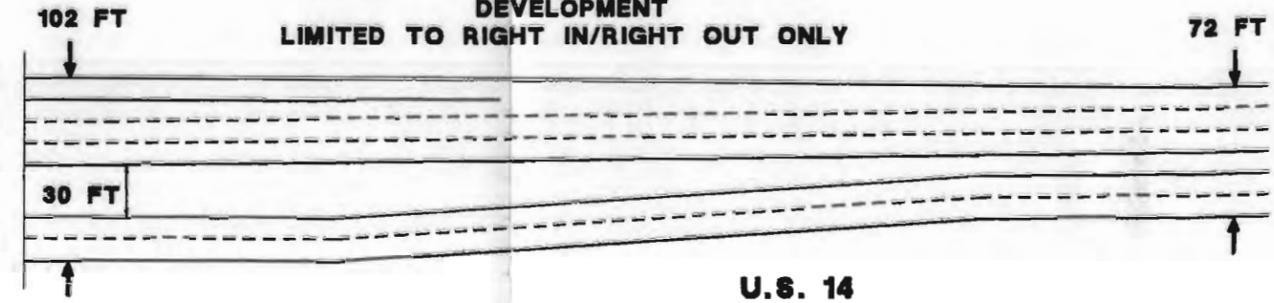
OUTSIDE LANE FOR WESTBOUND
U.S. 14 MERGES APPROXIMATELY
1000 FEET WEST OF INTERSECTION

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY



TAPERS TO 4 BASIC THROUGH LANES
(TWO IN EACH DIRECTION) IN ACCORDANCE
WITH IDOT STANDARDS

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY



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.

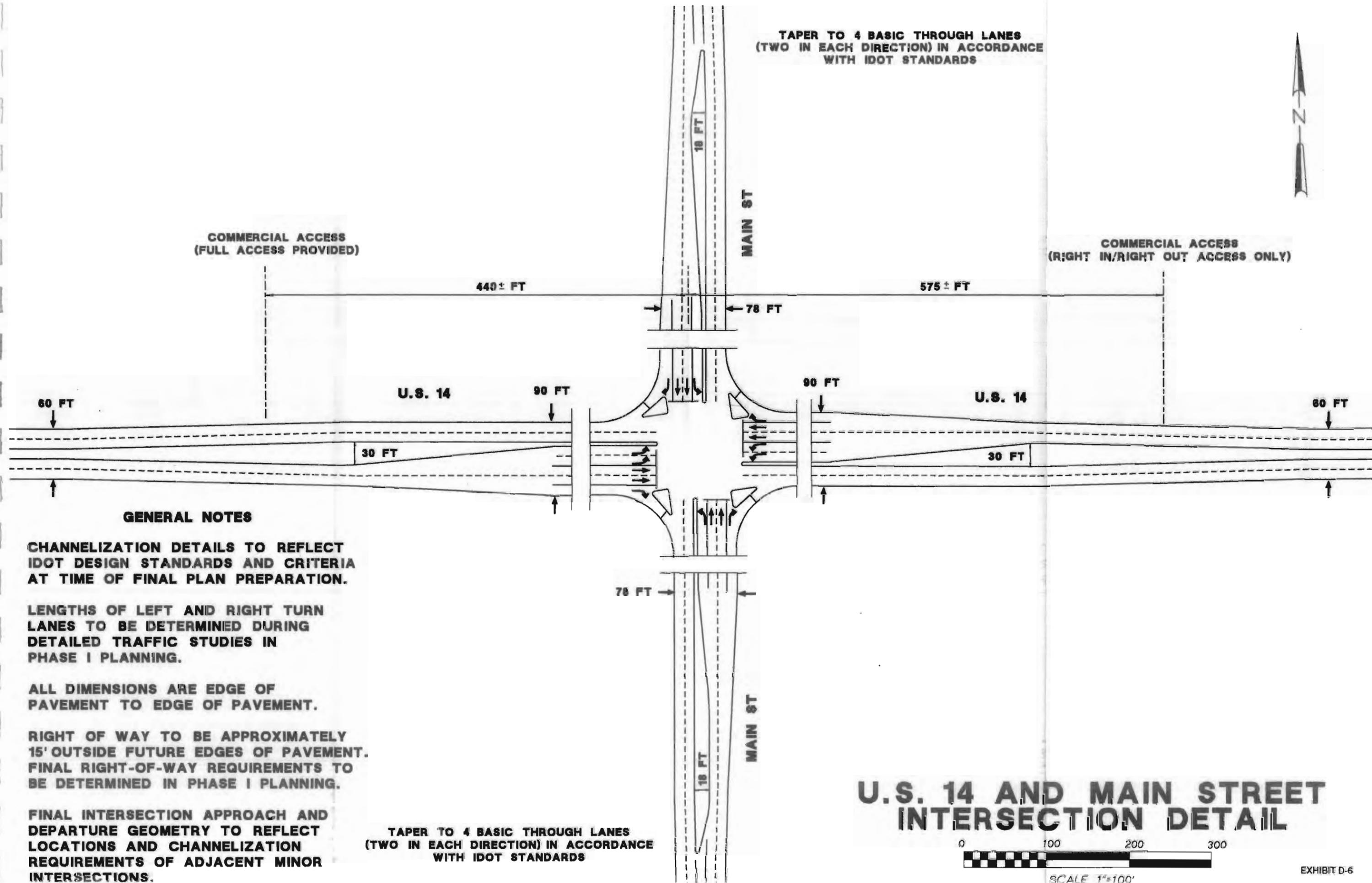
FINAL INTERSECTION APPROACH AND
DEPARTURE GEOMETRY TO REFLECT
LOCATIONS AND CHANNELIZATION
REQUIREMENTS OF ADJACENT MINOR
INTERSECTIONS.

U.S. 14

**U.S. 14 AND IL 22
INTERSECTION DETAIL**



SCALE 1"=100'



TAPER TO 4 BASIC THROUGH LANES
(TWO IN EACH DIRECTION) IN ACCORDANCE
WITH IDOT STANDARDS

COMMERCIAL ACCESS
(FULL ACCESS PROVIDED)

COMMERCIAL ACCESS
(RIGHT IN/RIGHT OUT ACCESS ONLY)

440± FT

575± FT

MAIN ST

MAIN ST

U.S. 14

U.S. 14

60 FT

60 FT

90 FT

90 FT

30 FT

30 FT

78 FT

18 FT

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

TAPER TO 4 BASIC THROUGH LANES
(TWO IN EACH DIRECTION) IN ACCORDANCE
WITH IDOT STANDARDS

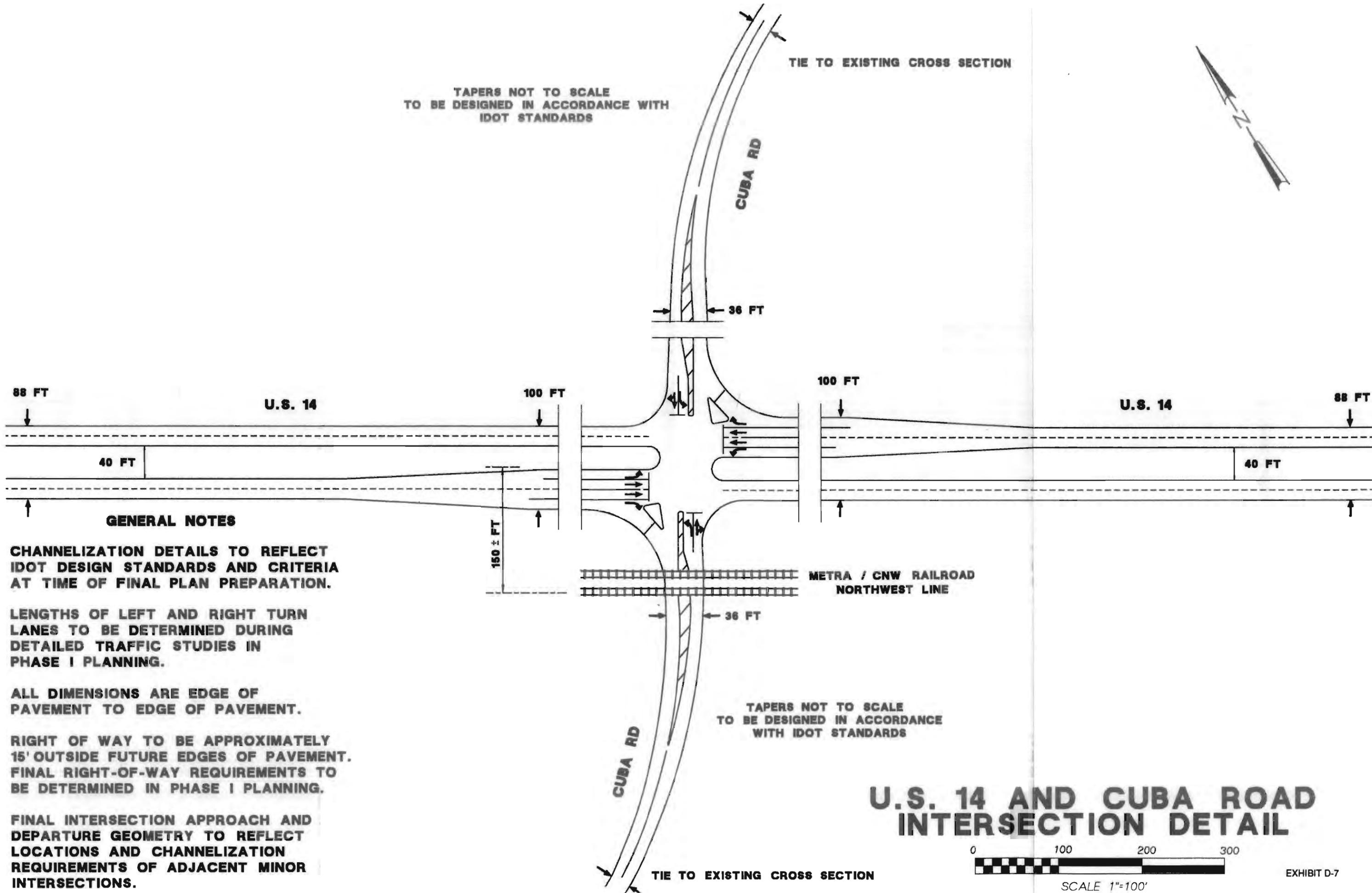
**U.S. 14 AND MAIN STREET
INTERSECTION DETAIL**



SCALE 1"=100'

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

TIE TO EXISTING CROSS SECTION



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
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RIGHT OF WAY TO BE APPROXIMATELY
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FINAL INTERSECTION APPROACH AND
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LOCATIONS AND CHANNELIZATION
REQUIREMENTS OF ADJACENT MINOR
INTERSECTIONS.

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

**U.S. 14 AND CUBA ROAD
INTERSECTION DETAIL**



SCALE 1"=100'

Segment IV—“Palatine” (South of Cuba Road to Palatine Road)

Segment IV travels southeast from south of Cuba Road to Palatine Road for a distance of approximately 10 miles. It passes through the villages of Barrington, Inverness, and Palatine. Recommended plan Exhibits C-27 to C-35 summarize proposed improvements along this segment.

Cross Section and Geometric Characteristics

The recommended cross section within this segment includes four basic lanes (two lanes in each direction of travel), with variable median and roadside design.

South from Cuba Road to approximately Cumnor Avenue, the existing cross section, consisting of a 40-foot depressed median and open drainage, should be maintained. Although the existing 200 feet of right-of-way is sufficient to accommodate the desirable six-lane section associated with a suburban SRA, constraints north and south of this section make a continuous six-lane cross section impractical and costly to implement. Improvements and recommendations are focused at the existing cross streets and at-grade intersections.

Reconstruction is recommended for the intersections of U.S. 14 with Taylor Street, Hart Road, and Western Avenue/Old Northwest Highway. At Taylor Street, the intersection should be relocated to remove the existing skew intersection and to eliminate the offset intersection. This should improve the safety and operational efficiency of this intersection. At Hart Road, channelization improvements are recommended, and the existing access to the development in the northwest quadrant should be relocated further to the east to minimize conflict with the intersection. At Western Avenue, the intersection should be relocated, with the access to existing development on the north side of U.S. 14 reconstructed south from the existing intersection at U.S. 14. Note that at some locations, existing median openings are recommended for closing. Therefore, it is especially important that the design at other medians openings can accommodate “U-turning” vehicles safely and adequately.

The recommended cross section from Cumnor Avenue to Hillside Road is a four-lane section with a flush, two-way left-turn lane. Widening of the existing pavement should take place about the existing centerline, with one exception—along the existing horizontal curve at Lake Zurich Road, it is recommended that right-of-way acquisition take place to the east side to minimize potential impacts to the existing residential development in this area. The cross section generally could be accommodated within 80 to 90 feet of right-of-way. Right-of-way acquisition on either side of the roadway would range from zero to 10 feet.

The intersection of North Avenue and U.S. 14 just north of Lake Zurich Road is recommended for closing. Access to residences along this road could be accommodated via Drury Lane or the signalized intersection at Berry Road. The location of this intersection relative to the existing horizontal alignment, and the angle at which North Avenue intersects U.S. 14, result in insufficient intersection sight distance. Furthermore, this intersection is too close to the existing at-grade railroad crossing. Just south of North Avenue, it is recommended that the Valencia Avenue intersection be relocated and realigned to eliminate the existing offset intersections. At this relocated intersection, it is recommended that the westbound through movement be eliminated. This would prevent traffic from travelling through the residential areas to the west of U.S. 14.

From Hillside Road to a point opposite the Thunderbird Country Club, the recommended cross section calls for four basic lanes with a raised 8-foot median, which is less than the desirable 18-foot median. The roadside should be designed to include curb and gutter with open drainage. This cross section design is tailored to mitigate impacts or conflicts with both the country club and the existing railroad that parallels U.S. 14. This improvement could be accommodated within the existing right-of-way. The 8-foot median would be widened to provide left-turn protection at the entrance to the Thunderbird Country Club.

Proceeding south, the cross section is expanded in the vicinity of the Ela Road intersection. The cross section would include three through lanes through the intersection and an 18-foot raised median. South of Ela Road, the cross section narrows, with the third northbound through lane being added at the Illinois 68 (Dundee Road) entrance ramp, and the southbound third through lane would be dropped past the exit to Illinois 68. The median would be eliminated through the Illinois 68 interchange (see Exhibit C-31). To improve the operation of the Ela Road

intersection and increase the northbound weaving length between the northbound Illinois 68 entrance ramp and the intersection at Ela Road, the Ela Road intersection should be relocated approximately 250 feet to the west. This should improve the existing safety and operation along this section of U.S. 14. Implementation of this improvement is not recommended until operation of this segment of U.S. 14 begins to indicate an increase in accident experience or the automobile service station in the northeast quadrant becomes available for acquisition.

South of Illinois 68, the cross section would widen to provide an 18-foot raised median to north of Countryside Road. South from Countryside Road to Palatine Road, the four-lane cross section narrows, providing a 12-foot flush median. Widening required for cross section improvements should occur about the existing centerline. In general, improvements to the existing cross section would require the acquisition of 5 to 10 feet of additional right-of-way from both sides of the corridor. Future Phase I studies will identify right-of-way requirements more accurately.

The Quentin Road and Palatine Road intersections are spot locations where greater right-of-way will be required. Because both of these intersections are SRA-to-SRA intersections, development of 30-foot medians at both locations is recommended to allow implementation of double left-turn lanes.

Other recommendations along this segment relate to intersection improvements or relocations. The intersections of Doe Drive and Portage Avenue should be reconstructed to remove the existing skew angle. The intersection of Colfax Street and U.S. 14 also should be reconstructed. Colfax Street should be relocated to intersect with U.S. 14 opposite Sterling Avenue. Similarly, Baldwin Avenue should be relocated opposite Countryside Drive to form a full, conventional intersection. The resulting two separate intersections would require relocation of the existing at-grade railroad crossing approximately 200 feet to the north. It is anticipated that this reconstruction would improve the safety and operations at this intersection.

As was discussed in Segment III, severe right-of-way constraints along some sections of Segment IV preclude the development of the six-lane suburban SRA cross section. Furthermore, the minimum 18-foot median and 12-foot lane widths were not possible at all locations. Where possible, improvements to the existing cross section that reflect SRA standards were recommended.

Two sections of U.S. 14 along this segment are located within floodplains, at Taylor Road and just west of Hart Road. Because there are no planned roadway improvements along U.S. 14 in this area, compensatory storage does not need consideration.

A review of IDOT's Highway Flooding Prioritization listing of problem areas identified two locations within the project boundaries, east of Main Street in Barrington and at Ela Road/Illinois 68. Both of these areas seem to be localized problems that could be readily addressed with the project design.

Traffic Control, Operations, and Safety

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 traffic signals and the location of median access control. It is especially important in this segment, as it is in Segment III, to modify and to improve the operation of existing signalized intersections and other potential signals to maximize U.S. 14's operation.

The diagrams along the top of each SRA plan exhibit indicate locations of proposed or potential signalized intersections, the lane arrangements at these intersections, and the spacing to adjacent signalized intersections. The locations of future signals were identified based on existing and future land use, safety, and overall system needs. Where a raised median is recommended, median access breaks are shown on the plan. Where a flush median is shown, access is unrestricted unless otherwise noted. Where no median break is shown for cross sections with a divided median, it is the intent of the plan that vehicles entering or exiting driveways be restricted to right-in/right-out movements only. Intersection details for key intersections along this segment are provided in Exhibits D-8 to D-12.

The traffic control plan for Segment IV is summarized in Exhibits C-27 to C-35. The existing signals at Hart Road and Western Avenue/Old Northwest Highway should be retained. Southbound right-turn lanes are recommended at these two intersections to accommodate vehicles that queue when the Metra C&NW train crosses. In addition, adequate length southbound right-turn lanes (as well as northbound left-turn lanes) need to be provided to accommodate this potential conflict.

South of Western Avenue, the recommended plan calls for a new signal at Cumnor Avenue and Bryant Avenue. These signals are proposed to provide access to existing and future development, and to enable consolidation of existing access points along this segment of U.S. 14. Left- and right-turn lanes on U.S. 14 at the approaches to these intersections are recommended. The spacing of the signals would be approximately ¼ mile, which would satisfy suburban SRA criteria for signal spacing.

The traffic control plan calls for the retention of the existing signals from Illinois 59 to Ela Road. This includes the signals at Illinois 59 (Hough Street), Berry Road, Main Street (Lake Cook Road), Eastern Avenue, and Ela Road. At Illinois 59 (Hough Street) and Main Street (Lake Cook Road), double left-turn lanes were not considered possible or practical due to constraints to the south (see Exhibit D-8).

Ela Road is another location where significant improvements are recommended (see Exhibit D-9). To improve operations at this intersection, the location of the intersection was relocated 250 feet to the north (see Exhibit C-31). In addition, capacity improvements were made at the intersection, including the addition of a third through lane southbound through the intersection, a right-turn lane northbound, and a double left-turn lane westbound.

The next major signalized intersection recommended is the new intersection that would result from the relocation of Baldwin Road opposite Countryside Drive at U.S. 14 to form a full conventional intersection. Colfax Street would be realigned to intersect opposite Sterling Avenue, forming a new four-leg intersection (an intersection detail is provided in Exhibit D-10). It is recommended that the existing signal at Colfax Street be removed, providing 1,800 feet between the new signal at Baldwin Road/Countryside Drive and the next signal to the south at Quentin Road. Major capacity improvements also are recommended for the SRA-to-SRA intersection of Quentin Road and U.S. 14. The cross section on both arterials should be expanded to provide a 30-foot median. This would enable the development of double left-turn lanes on all approaches. Right-turn lanes also are recommended along U.S. 14 (see Exhibit D-11).

Proceeding south, the improvements shown at the Hicks Road intersection are intended to reflect recent reconstruction of this intersection, including dual left-turn lanes southbound. Other recommendations include reconstructing the Hicks Road intersection to intersect opposite the existing signal at Lincoln Street. The existing

intersection immediately north at Colfax Street and just south at Wood Street would be converted to serve right-in/right-out movements only.

At Palatine Road, a designated SRA to the east, major reconstruction is recommended. The cross section would be widened to accommodate a double left-turn lane from southbound U.S. 14 to eastbound Palatine Road. In the reverse direction, a right-turn lane is recommended from westbound Palatine Road to northbound U.S. 14. This improvement is intended to accommodate the south-to-east and west-to-north SRA-to-SRA traffic movement. An intersection detail of this location is provided in Exhibit D-12.

Exhibits C-27 to C-35 also indicate locations of proposed median openings or locations where median openings should be eliminated. These locations are primarily along the northern portion of this segment. Note on Exhibit C-27 that the two existing median openings are recommended to be closed. Where an existing driveway accesses U.S. 14 and no opening is shown, it is the intent of the plan that the driveway serve right-in/right-out movements only. As noted on Exhibits C-27 to C-35, all other crossing roadways would be stop-controlled.

The traffic control and geometric plan for Segment IV should improve the existing operations, capacity, and safety of U.S. 14. For this segment, as for Segment III, it is especially important to provide good operations at the existing signalized intersections, because these signals ultimately will control or constrain the operation of U.S. 14. Maximizing the operation of the signalized intersections will afford the greatest capacity to the arterial.

To verify the reasonableness of the recommended improvements, a planning-level capacity analysis was performed. Table 22 summarizes the results of this analysis, which was performed on all existing and future signals. The analysis used the year 2010 ADT SRA forecasts provided by CATS as a guide. As noted in the table, assumptions for minor crossroad volumes were made. A complete list of capacity analyses and assumptions are detailed in Appendix A.

The capacity analysis shown in Table 22 includes existing and proposed intersections south from Hart Road to Palatine Road. The recommended plan would accommodate the CATS ADT forecast at most signalized intersections. However, at a few intersections, the calculated v/c ratios were significantly greater than 1.00.

Table 22
Evaluation of Signalized Intersection Operations Along
Segment IV (South of Cuba Road to Palatine Road) of U.S. 14

Intersection of U.S. 14 and:	Lane Arrangements ^b		Year 2010 ADT (vpd) ^c		v/c for Intersection ^d
	SRA	Crossroad	SRA	Crossroad	
Hart Road ^a	L-TT-R	L-TR	39,500	5,000	0.93
Western Avenue/Old Northwest Highway ^a	L-TT-R	L-TR	39,500	5,000	0.92
Cumnor Avenue ^a	L-TT-R	L-TR	39,500	5,000	0.92
Bryant Avenue ^a	L-TT-R	L-TR	39,500	5,000	0.92
Illinois 59 (Hough Street) ^a	L-TT-R	L-T-R	39,500	49,600	2.14
Berry Road ^a	L-T-TR	L-TR	39,400	5,000	1.00
Main Street ^a	L-T-TR	L-T-TR	34,200	20,000	1.13
Eastern Avenue ^a	L-TT-R	L-TR	35,100	5,000	0.85
Ela Road ^a	L-TTT	LL-R	50,700	20,000	1.01
Baldwin Road/Countryside Drive ^a	L-TT-R	L-TR	40,900	12,000	1.12
Quentin Road ^a	LL-TT-R	LL-T-TR	31,000	33,900	1.12
Smith Street ^a	L-T-TR	L-TR	30,600	12,000	1.09
Plum Grove Road ^a	L-TT	L-R	28,000	12,000	0.76
First Bank Drive ^a	L-T-TR	L-T-R	28,000	5,000	0.70
Hicks Road ^a	LL-TT	L-LR-R	36,900	20,000	1.04
Lincoln Street ^a	L-TT	L-TR	36,900	5,000	0.93
Palatine Road ^a	LL-T-TR	L-TT-R	41,200	20,100	0.98

Note: ^aDenotes SRA corridor.

^bAssumed for unavailable volumes: 20,000 vpd for major arterials, 12,000 vpd for minor arterials, and 5,000 vpd for local roadways.

^cL = Left-turn lane; T=through lane; R=right-turn lane; and TR=through and right-turn lanes.

^dADT = Average Daily Traffic.

^ev/c = Volume to Capacity Ratio.

These intersections include Illinois 59 (v/c = 2.14), Main Street (v/c = 1.13), Baldwin Road/Countryside Drive (v/c = 1.12), and Quentin Road (v/c = 1.12). Because both Illinois 59 and Quentin Road are designated as SRAs, they have substantial ADT (Illinois 59 = 49,600 vpd and Quentin Road = 33,900 vpd) that contribute to the calculated v/c ratios reported herein.

When developing the recommended plan and, more specifically, the lane arrangements at signalized intersections, consideration was given to the likelihood that these crossroads would ever realize the forecast CATS traffic volumes, and the impacts associated with providing the capacity dictated by the forecast volumes. With these considerations, intersections such as Illinois 59, Main Street, and Quentin Road do not show all capacity improvements required to accommodate the CATS forecast. At such intersections only the additional capacity to accommodate a reasonable growth in future traffic is recommended.

Public Transportation

The Metra C&NW Northwest commuter rail line currently serves this segment of the corridor at stations located in Fox River Grove, Barrington, and Palatine. No extensions or improvements have been recommended for this facility, however, improved signing for the Barrington and Palatine stations is needed along U.S. 14. Intersecting streets with U.S. 14 where signs are recommended include: Illinois 59 (Hough Street) and Main Street in Barrington, and at Plum Grove Road and Smith Road in Palatine. Because of growth in ridership and the limited reserve capacity of existing parking at the Barrington and Palatine Metra Stations, it is recommended that additional parking be identified for future use, as warranted. Currently, these parking lots are roughly 95 percent utilized.

The EJ&E Railway operates immediately east of the Lake Zurich central business district and crosses U.S. 14 east of Illinois 59. Although there are no recommended improvements to this facility in the near future, Metra currently is evaluating the potential for commuter service on this rail line. Two possible stations have been identified near U.S. 14. One would be at the existing Metra C&NW station in Barrington, which would serve both lines. Proposed optional sites include the C&NW Northwest line at the EJ&E line and the C&NW Northwest line at Hart Road. The actual year when commuter operation might commence is uncertain.

Although there are no proposed bus route additions for this section of U.S. 14, as population and development increase, more bus routes may be warranted. Future bus turnout areas may require 5 to 10 feet of additional right-of-way. Furthermore, bus waiting shelters and paved sidewalks for pedestrians also should be considered. Appropriate standards for locating and marking bus stops should be followed. Recommendations include installing a well-marked bus shelter in Palatine at the intersection of Quentin Road and U.S. 14. A carefully-marked, identifiable bus stop is needed for the Pace Route 699 stop at the Palatine Metra Station.

Consideration also should be given to future identification of right-of-way at the near the intersection of Illinois 59 and U.S. 14 in Barrington for a park-n-ride facility. This location also would accommodate traffic for the Illinois 59 SRA. In addition, a park-n-ride facility also should be located in the vicinity of the SRA-to-SRA intersection of U.S. 14 and Quentin Road in Palatine.

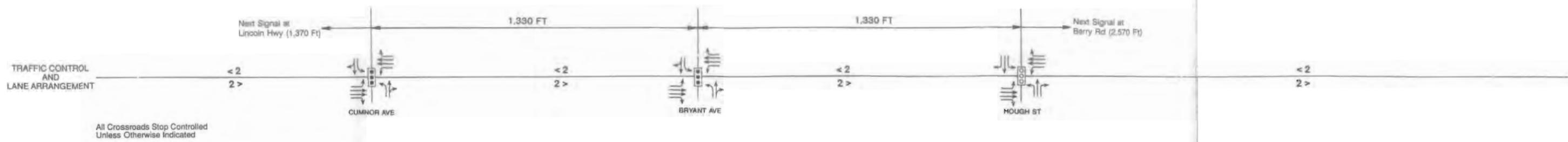
Construction and Right-of-Way Costs

The consultant's opinion of the total cost of the recommended plan for Segment IV is \$34.3 million in 1991 dollars (see Table 23). This cost includes roadway and intersection reconstruction, right-of-way acquisition, and structure reconstruction. (In Segment IV, there are no new or reconstructed structures included in the cost estimate.)

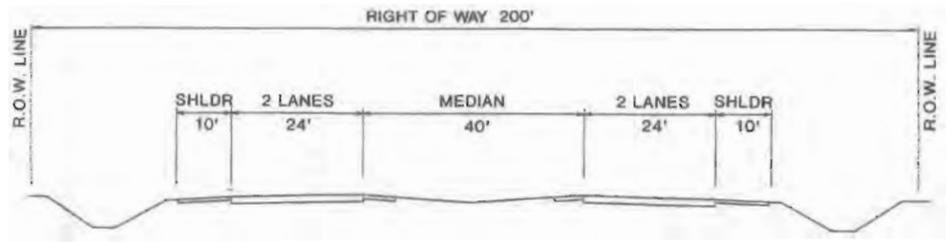
The construction cost is estimated to be \$28 million, which includes widening the existing four-lane facility and improving existing intersections. The right-of-way acquisition cost is based on the estimated costs of various types of land uses that would need to be acquired. It is estimated that 9 acres of right-of-way will need to be acquired at a cost of \$2.8 million (in 1991 dollars).

Table 23
Opinions of Construction and Right-of-Way Cost
for SRA Improvements Along Segment IV (South of
Cuba Road to Palatine Road) of U.S. 14
(1991 Dollars)

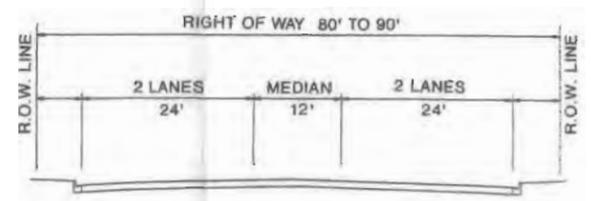
Roadway Reconstruction	\$28,120,000
Intersections/Interchanges (Cumnor Avenue, Bryant Avenue, Illinois 59 [SRA], Countryside Drive, Quentin Road [SRA], and Palatine Road [SRA])	3,300,000
Structures and Retaining Walls	-0-
Other	-0-
Subtotal	31,420,000
Right-of-Way	2,840,000
TOTAL	<u>\$34,260,000</u>



- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP



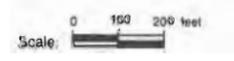
ROADWAY SECTION A-A
EAST OF CUMNOR AVE

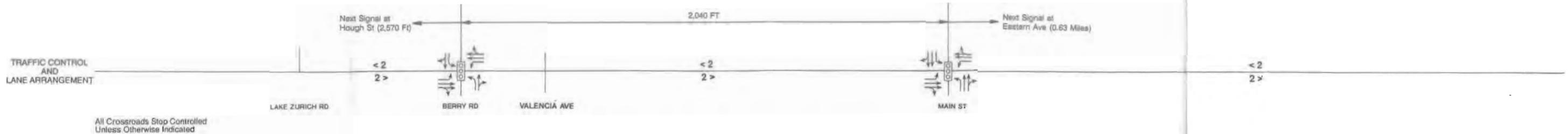


ROADWAY SECTION B-B
CUMNOR AVE TO LAKE ZURICH RD

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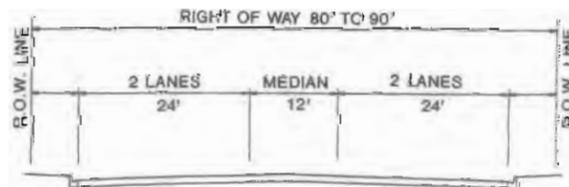


All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP

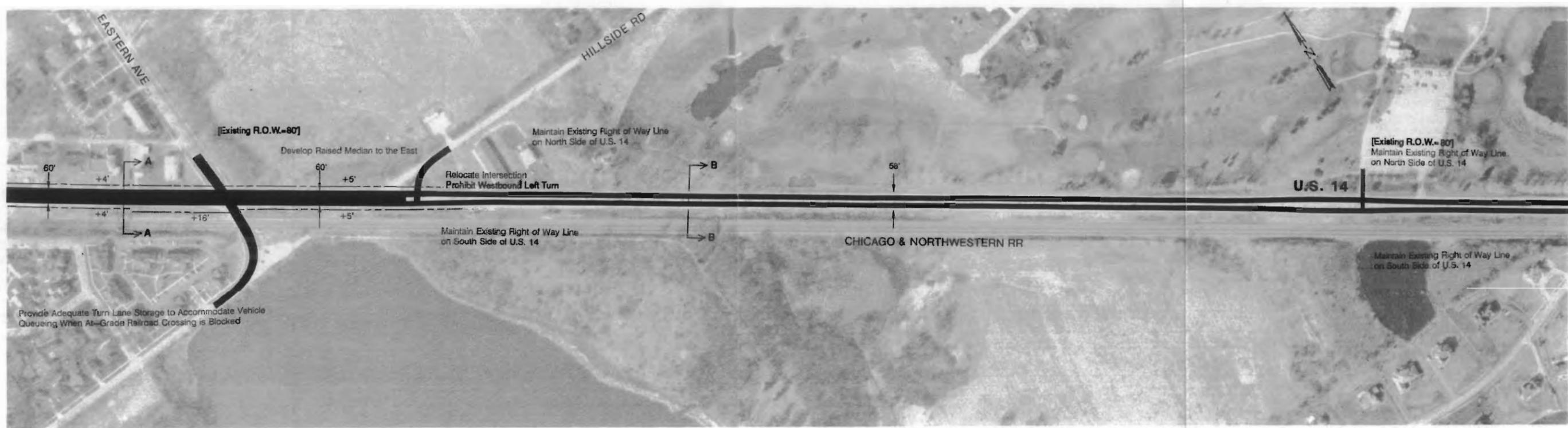


ROADWAY SECTION A-A
LAKE ZURICH RD TO GLENDALE AVE

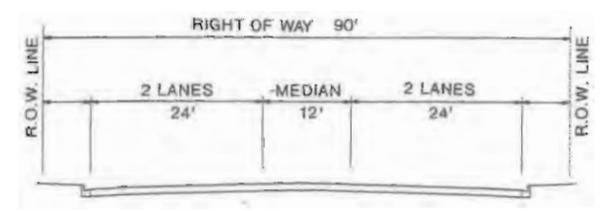
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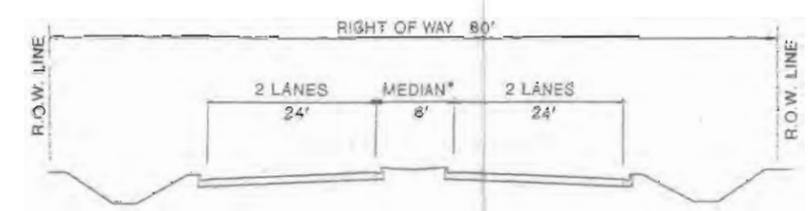




- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP



ROADWAY SECTION A-A
EASTERN AVE TO EAST OF HILLSIDE RD



ROADWAY SECTION B-B
EAST OF HILLSIDE RD
*Widen Median at Entrance To Golf Course to Provide Left Turn Lane

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TRAFFIC CONTROL AND LANE ARRANGEMENT

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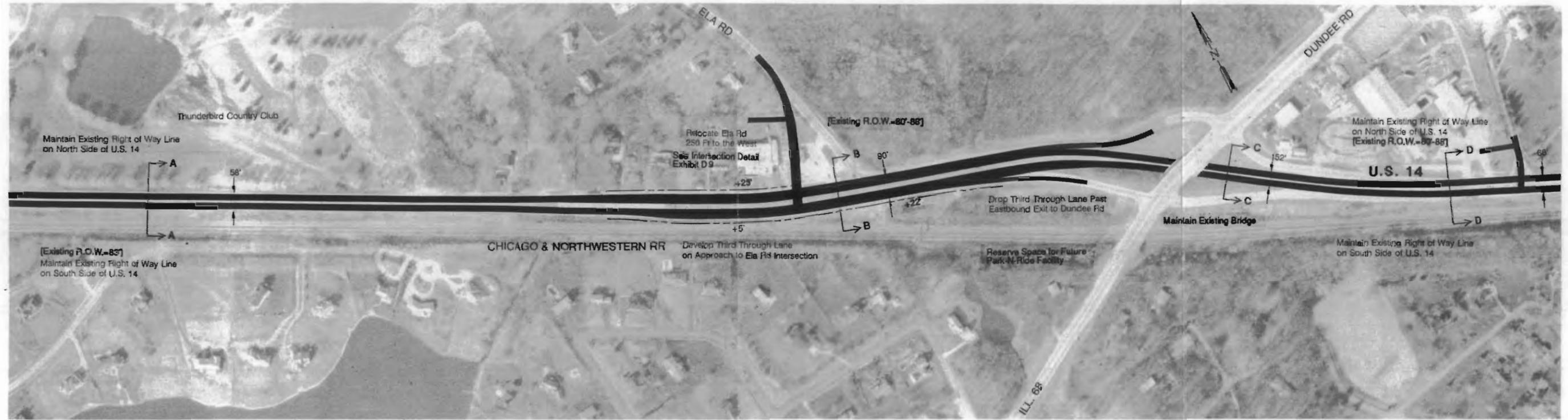
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Next Signal at Eastern Ave (1.48 Miles) Next Signal at Baldwin Rd (1.38 Miles)

ELA RD

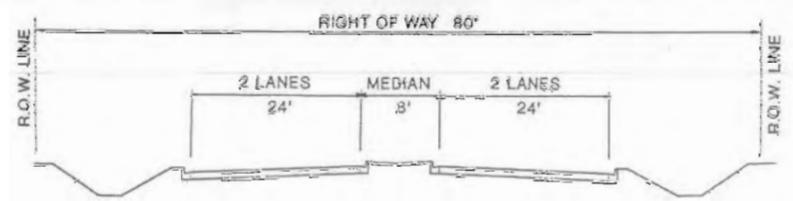
DUNDEE RD

All Crossroads Stop Controlled Unless Otherwise Indicated

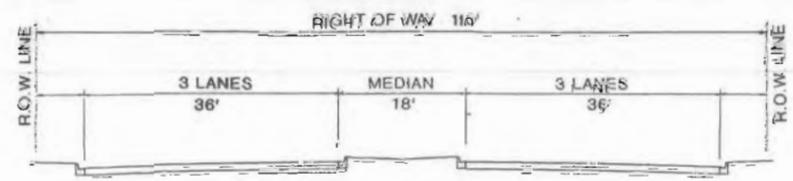


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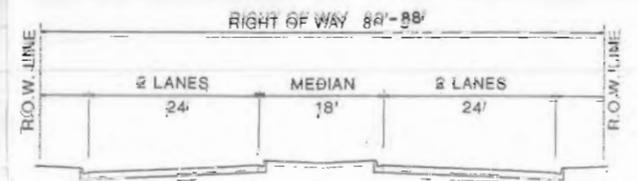
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- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



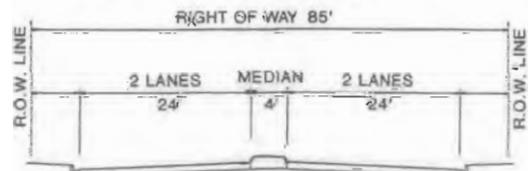
ROADWAY SECTION A-A
OPPOSITE THUNDERBIRD COUNTRY CLUB



ROADWAY SECTION B-B
WEST OF ELA RD TO EAST OF ELA RD



ROADWAY SECTION D-D
SOUTH OF DUNDEE RD INTERCHANGE



ROADWAY SECTION C-C
THROUGH DUNDEE RD INTERCHANGE

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TRAFFIC CONTROL AND LANE ARRANGEMENT

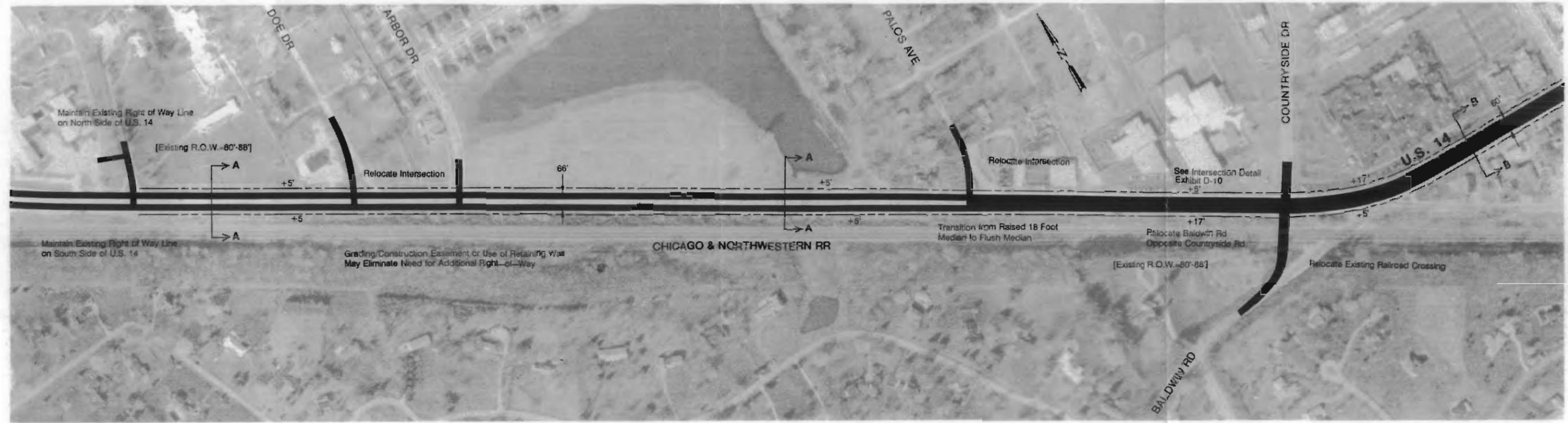
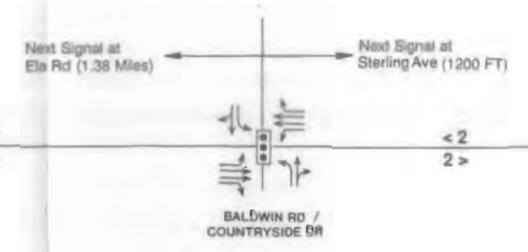
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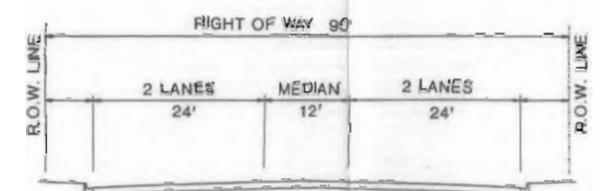
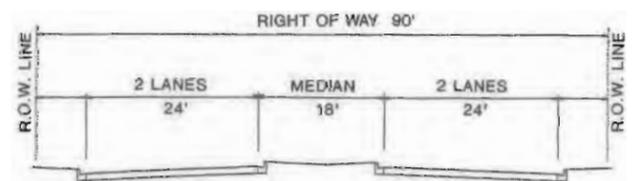
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All Crossroads Stop Controlled Unless Otherwise Indicated



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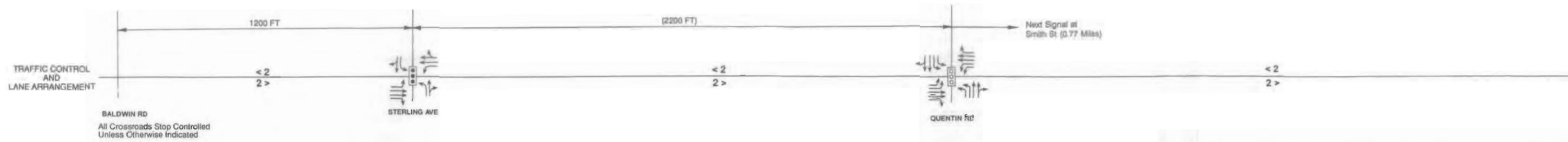
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- SIGNAL TO BE REMOVED
- PROPOSED LANE ARRANGEMENT
- NUMBER OF LANES
- FUTURE RIGHT OF WAY LINE
- BUS STOP



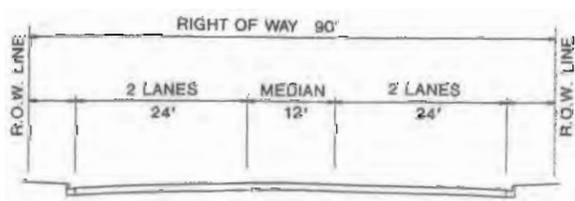
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- LEGEND**
- EXISTING SIGNAL
 - POTENTIAL SIGNAL
 - SIGNAL TO BE REMOVED
 - PROPOSED LANE ARRANGEMENT
 - NUMBER OF LANES
 - FUTURE RIGHT OF WAY LINE
 - BUS STOP

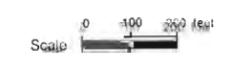


ROADWAY SECTION A-A
STERLING AVE TO AUBURN WOODS DR

† 30' Median Developed on Both Approaches to Intersection

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TRAFFIC CONTROL AND LANE ARRANGEMENT

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Next Signal at
Quentin Rd (0.77 Miles)

1,360 FT

2,000 FT

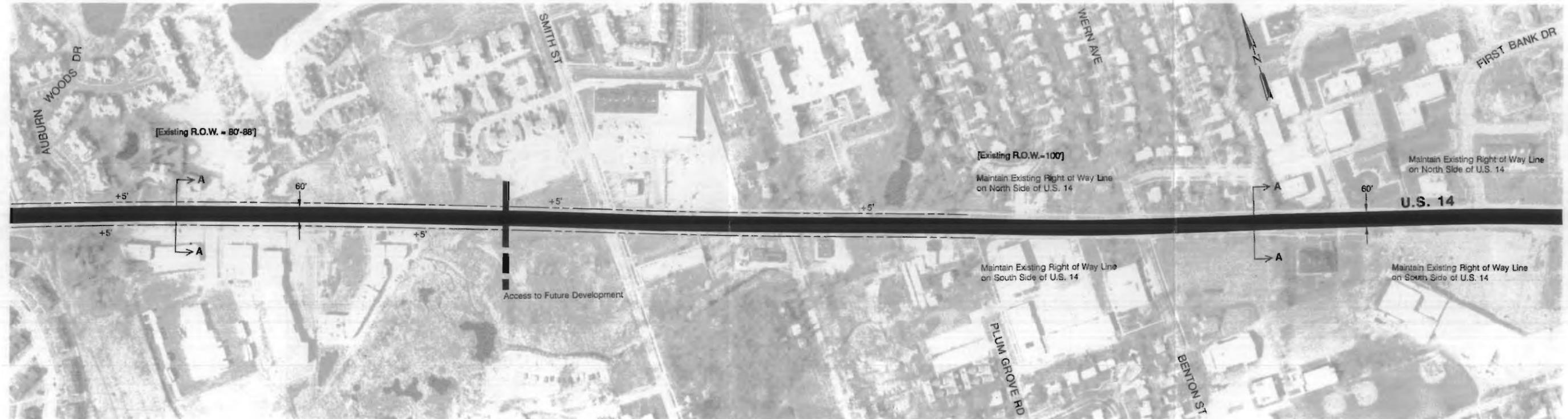
SMITH ST

PLUM GROVE RD

WERN AVE
BENTON ST

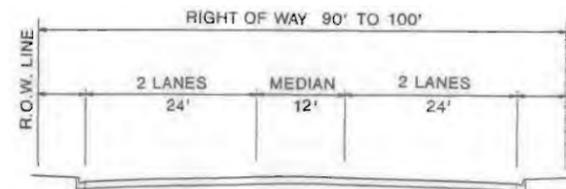
FIRST BANK DR

All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



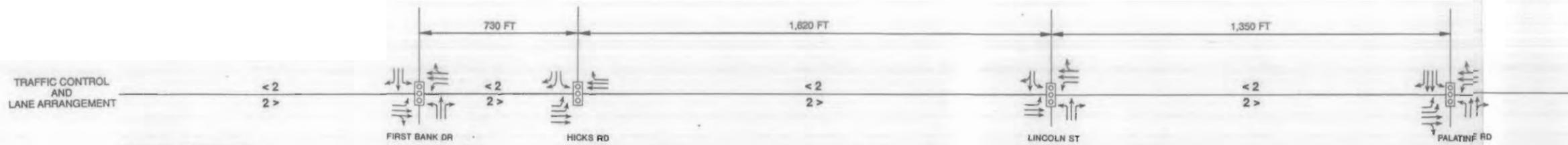
ROADWAY SECTION A-A
AUBURN WOODS DR TO FIRST BANK DR

U.S. 14 – PROPOSED PLAN

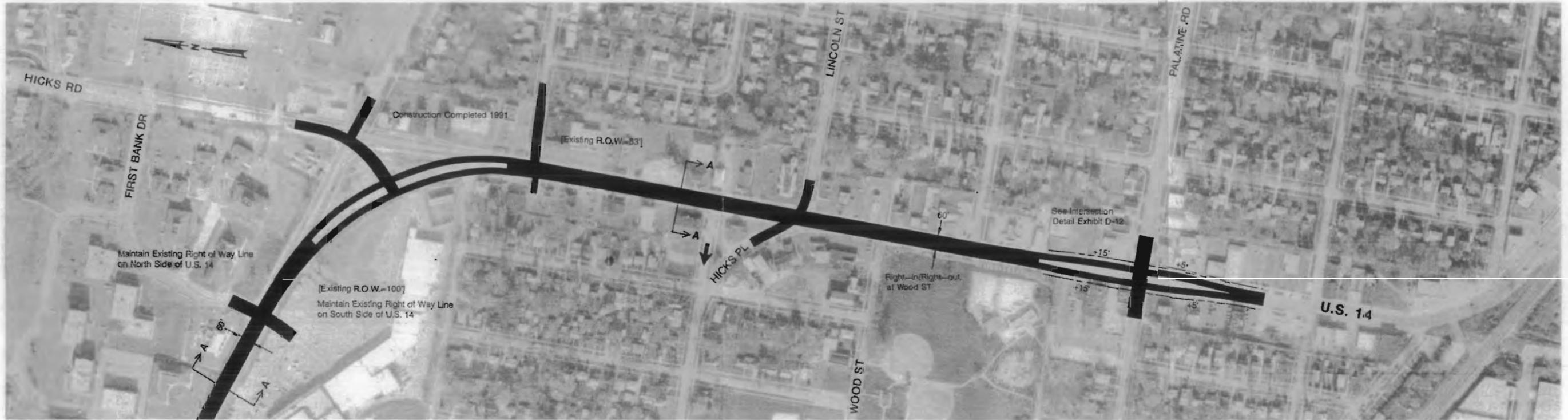
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ILLINOIS DEPARTMENT OF TRANSPORTATION



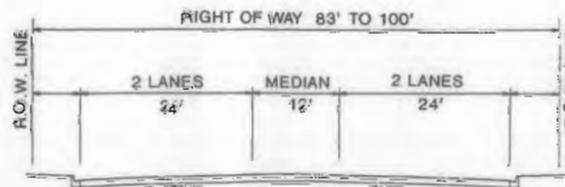


All Crossroads Stop Controlled Unless Otherwise Indicated



LEGEND

-  EXISTING SIGNAL
-  POTENTIAL SIGNAL
-  SIGNAL TO BE REMOVED
-  PROPOSED LANE ARRANGEMENT
-  NUMBER OF LANES
-  FUTURE RIGHT OF WAY LINE
-  BUS STOP



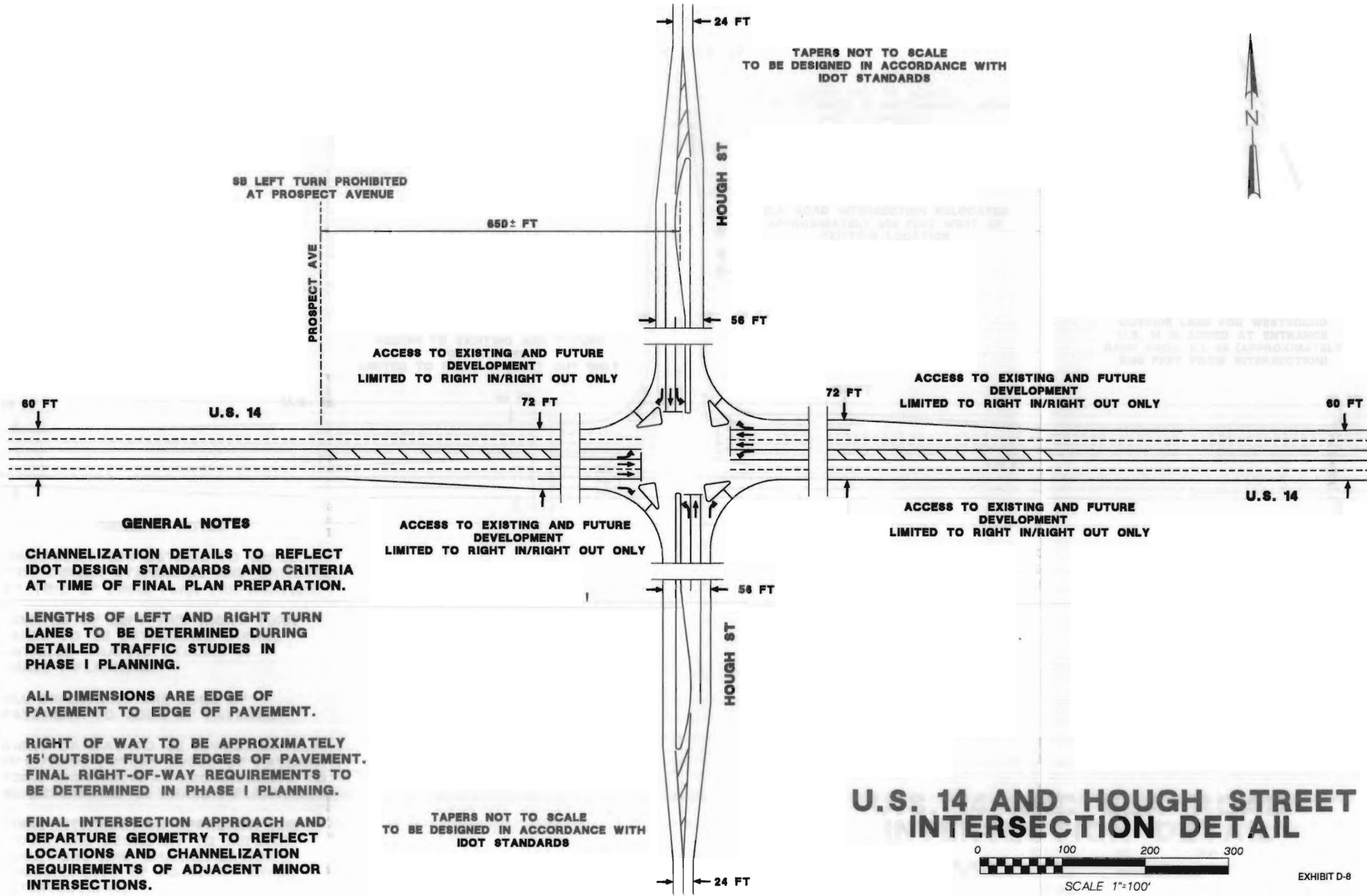
U.S. 14 - PROPOSED PLAN

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

ILLINOIS DEPARTMENT OF TRANSPORTATION



Scale: 0' 100' 200' 400'



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

SB LEFT TURN PROHIBITED
AT PROSPECT AVENUE

850 ± FT

HOUGH ST

56 FT

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY

60 FT

U.S. 14

72 FT

72 FT

60 FT

U.S. 14

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY

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.

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY

HOUGH ST

56 FT

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

24 FT

**U.S. 14 AND HOUGH STREET
INTERSECTION DETAIL**



SCALE 1"=100'

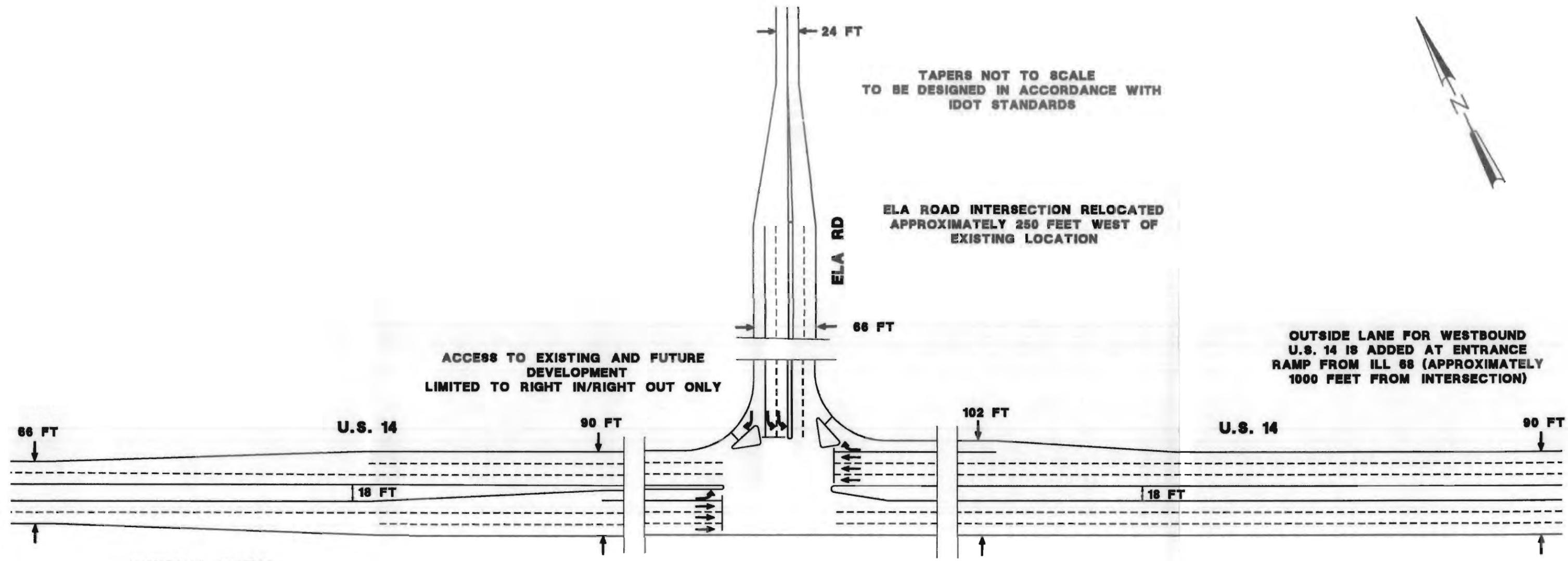


TAPERS NOT TO SCALE
TO BE DESIGNED IN ACCORDANCE WITH
IDOT STANDARDS

ELA ROAD INTERSECTION RELOCATED
APPROXIMATELY 250 FEET WEST OF
EXISTING LOCATION

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY

OUTSIDE LANE FOR WESTBOUND
U.S. 14 IS ADDED AT ENTRANCE
RAMP FROM ILL 68 (APPROXIMATELY
1000 FEET FROM INTERSECTION)



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.

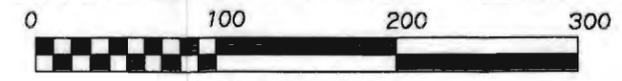
ALL DIMENSIONS ARE EDGE OF
PAVEMENT TO EDGE OF PAVEMENT.

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

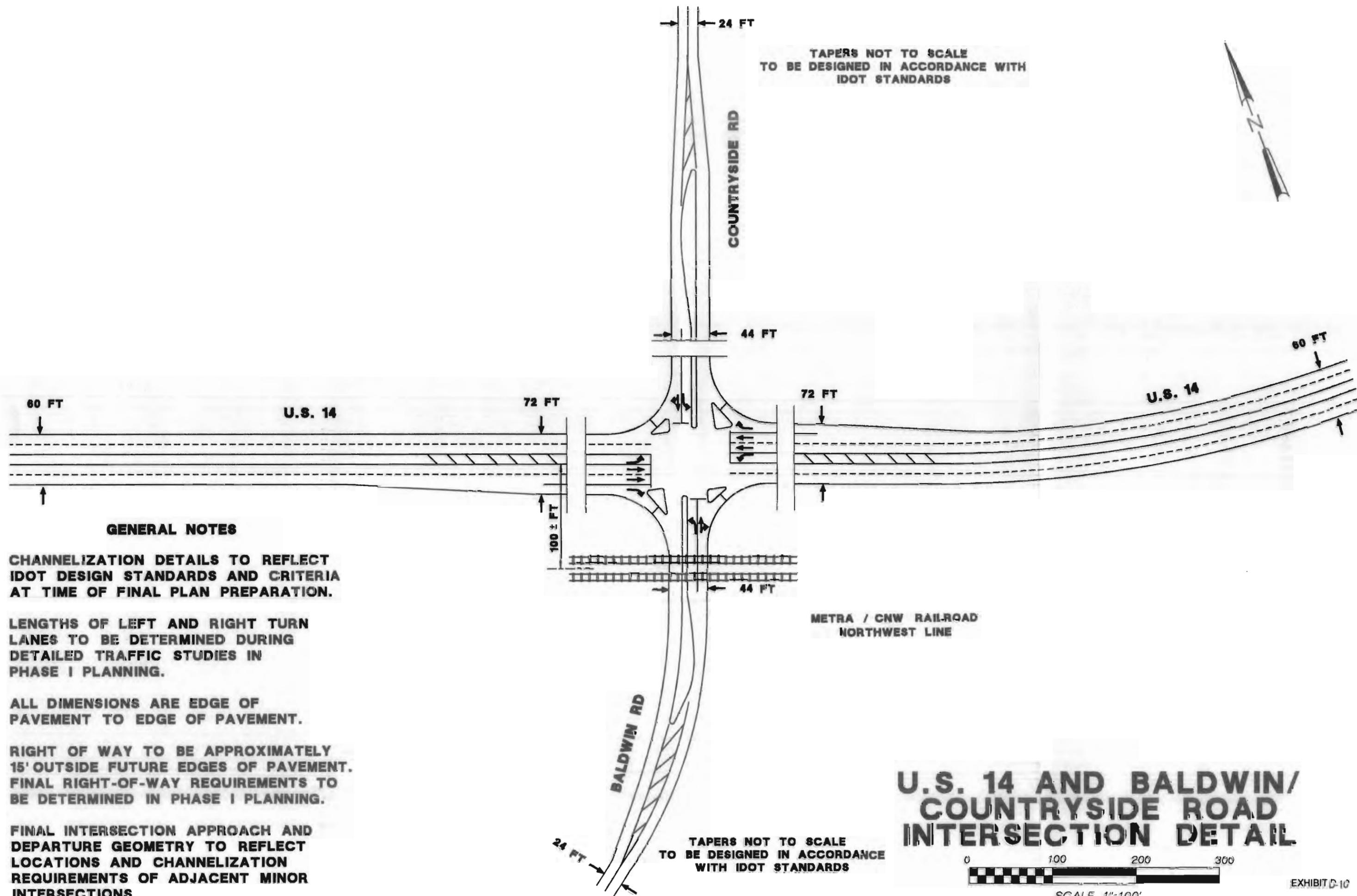
FINAL INTERSECTION APPROACH AND
DEPARTURE GEOMETRY TO REFLECT
LOCATIONS AND CHANNELIZATION
REQUIREMENTS OF ADJACENT MINOR
INTERSECTIONS.

OUTSIDE LANE FOR EASTBOUND
U.S. 14 MERGES PAST EXIT RAMP
TO ILL 68 (APPROXIMATELY
800 FEET FROM INTERSECTION)

**U.S. 14 AND ELA ROAD
INTERSECTION DETAIL**



SCALE 1"=100'



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.

METRA / CNW RAILROAD
NORTHWEST LINE

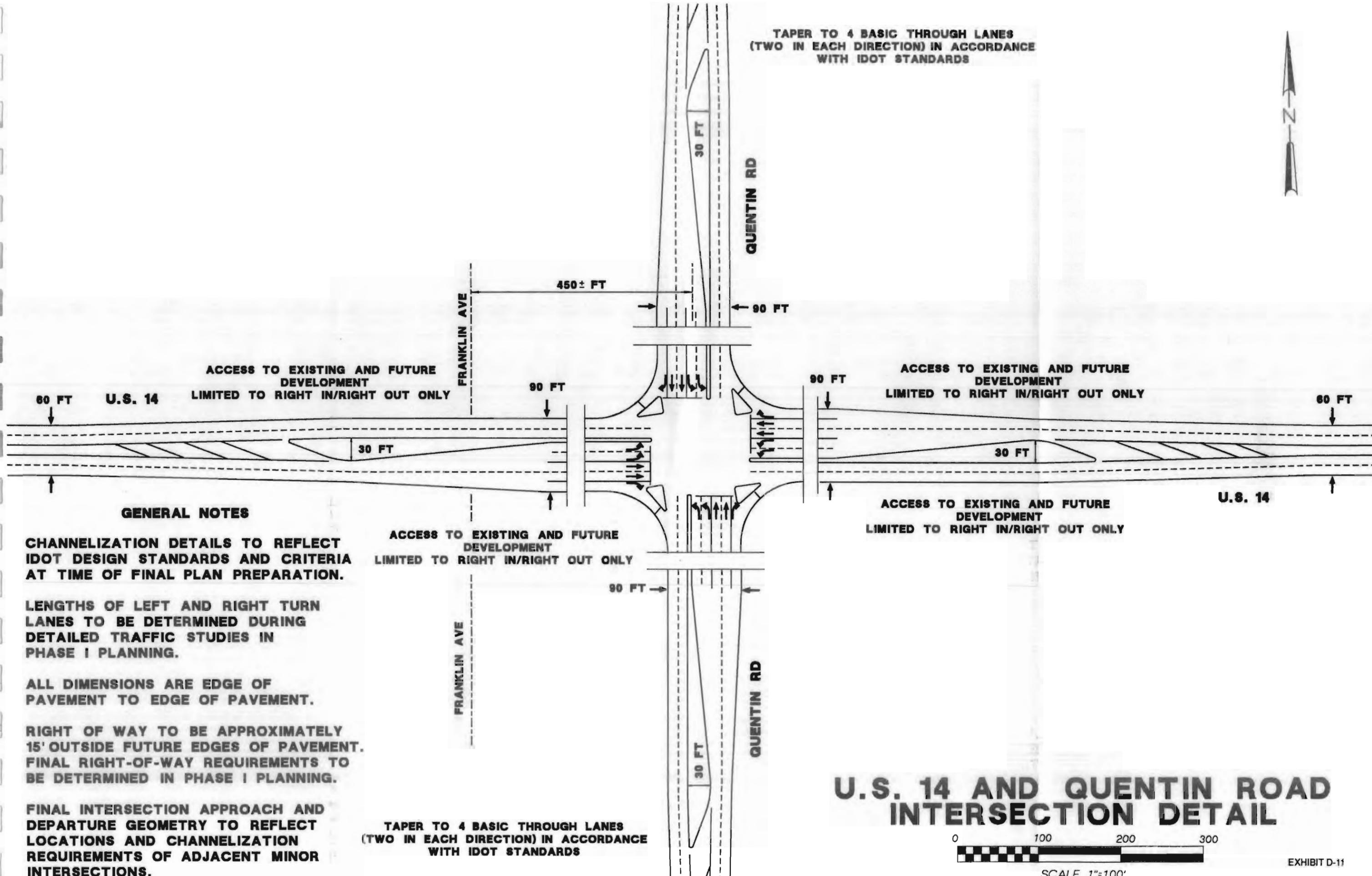
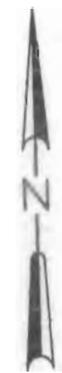
**U.S. 14 AND BALDWIN/
COUNTRYSIDE ROAD
INTERSECTION DETAIL**

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



SCALE 1"=100'

TAPER TO 4 BASIC THROUGH LANES
(TWO IN EACH DIRECTION) 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.

ACCESS TO EXISTING AND FUTURE DEVELOPMENT LIMITED TO RIGHT IN/RIGHT OUT ONLY

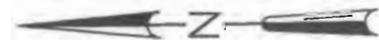
ACCESS TO EXISTING AND FUTURE DEVELOPMENT LIMITED TO RIGHT IN/RIGHT OUT ONLY

TAPER TO 4 BASIC THROUGH LANES
(TWO IN EACH DIRECTION) IN ACCORDANCE
WITH IDOT STANDARDS

**U.S. 14 AND QUENTIN ROAD
INTERSECTION DETAIL**



SCALE 1"=100'



TAPER TO 4 BASIC THROUGH LANES
(TWO IN EACH DIRECTION) IN ACCORDANCE
WITH IDOT STANDARDS

WILSON STREET
(FULL ACCESS PROVIDED)

650 ± FT

PALATINE RD

78 FT

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY

78 FT

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY

U.S. 14

60 FT

60 FT

U.S. 14

30 FT

30 FT

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.

ACCESS TO EXISTING AND FUTURE
DEVELOPMENT
LIMITED TO RIGHT IN/RIGHT OUT ONLY

66 FT

PALATINE RD

18 FT

TAPER TO 4 BASIC THROUGH LANES
(TWO IN EACH DIRECTION) IN ACCORDANCE
WITH IDOT STANDARDS

**U.S. 14 AND PALATINE ROAD
INTERSECTION DETAIL**



SCALE 1"=100'

U.S. 14 Corridor Summary

This SRA study of U.S. 14 systematically addressed future, short-term, and existing transportation needs along U.S. 14. The following paragraphs summarize the expected operations and capacity of the U.S. 14 arterial under future conditions. The summary also includes the overall opinions of the total costs to implement the plan as recommended. In addition, because of the significant investment required for implementing the recommended plan, a prioritization scheme, as discussed below, was developed.

Operational Analysis of the U.S. 14 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 rural, multilane highway from the Wisconsin state line through the Illinois 176 intersection. South of Illinois 176, U.S. 14 was evaluated as a suburban multilane arterial.

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 analyses are documented in Appendix A. All data requirements or assumptions were compatible with the SRA plan and with guidelines in the *HCM*.

Rural Portion of U.S. 14

Table 24 summarizes the analysis of the northern 20 miles of U.S. 14. The year 2010 CATS forecast traffic can be accommodated at level of service C or better for the entire length. (Note that forecast traffic for the Harvard bypass is not available. However, such traffic would probably be on the order of 10,000 vpd.) Average travel speeds in the rural sections would be greater than 45 mph during peak periods.

Table 24
U.S. 14 Operational Analysis—Rural SRA Segments
(State Line Road to Illinois 176)

From	To	Length (miles)	Year 2010 CATS SRA Average Daily Traffic (vpd)	Design Hour Volume (vph)*	Service Flow Rate (vphpl) ^b	v/c ^c	Average Travel Speed (mph)	Level of Service
State Line Road	New Harvard Bypass (North)	3.8	6,100	595	330	0.21	52	A
New Harvard Bypass (North)	New Harvard Bypass (South)	N/A	N/A	—	—	—	—	—
New Harvard Bypass (South)	Illinois 120	5.7	14,400	1,405	780	0.50	47	B
Illinois 120	Illinois 47	4.6	7,600	740	410	0.27	51	A
Illinois 47	Illinois 176	5.8	15,800	1,540	855	0.55	46	C

*Design Hour Volume = Year 2010 ADT x K x D
 Assumed Values: K = 0.15; D = 0.65

^bService Flow Rate = $DHV/[N \times f_E \times PHF]$

Where:

N = 2 lanes

f_E = 1.00 (Table 7-10 of HCM)

PHF = 0.90 (Table 7-11 of HCM)

^cv/c = Volume to Capacity Ratio

Suburban Portion of U.S. 14

South of Illinois 176, U.S. 14 is considered suburban. Its quality of operation 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 an operational analysis of each signalized intersection along U.S. 14. Table A-2 in Appendix A summarizes the operational assumptions for each intersection and arterial segment that were used to generate the arterial analysis.

Table 25 describes the results of the analysis for the full year 2010 CATS forecast. The following is evident from reviewing the intersection analysis and Table 25:

- Reasonable speeds and levels of service are achievable until Pingree Road. South of Pingree Road, the level of theoretical year 2010 traffic produces v/c ratios consistently greater than 1.00 for the signalized intersections through Cary and Fox River Grove. Resulting level of service E to F at these 11 intersections produces low arterial speeds and undesirable operations for this section of U.S. 14.
- Certain key intersections greatly affect arterial level of service. The theoretical traffic for year 2010 significantly exceeds the capacity of the achievable improvements at Pingree Road, Three Oaks Road, Cary Road, Algonquin Road, Illinois 59, and Quentin Road.

The above results are not surprising given the recommended plan for U.S. 14. Originally envisioned as a potential six-lane arterial (and considered as such in the CATS travel forecast), the SRA plan calls for only a four-lane suburban arterial.

Table 25 also includes a sensitivity analysis of the expected peak period operations for U.S. 14 under future traffic levels less than those forecast by CATS. For the corridor north of Pingree Road, a full 100 percent of year 2010 volume was retained. South of Pingree Road, arterial operations were evaluated for traffic at 80 percent and 90 percent of the CATS forecast. Note that, with only minor exceptions, the SRA plan produces level of service D for arterial operations at 90 percent of the CATS forecast traffic.

**Table 25
Summary of U.S. 14 Suburban Arterial Analysis**

Segment	Segment Length (miles)	Number of Signalized Intersections	Free Flow Operating Speed (mph)	100% of CATS "2010" Forecast		90% of CATS "2010" Forecast		80% of CATS "2010" Forecast	
				Average Peak Period Speed (mph)	LOS*	Average Peak Period Speed (mph)	LOS*	Average Peak Period Speed (mph)	LOS*
Illinois 176 to Crystal Lake Road	0.56	2	40	23	C	23*	C	23*	C
Crystal Lake Road to Devonshire Lane	1.12	3	30	18	C	18*	C	18*	C
Devonshire Lane to Main Street	0.68	3	35	16	E	16*	E	16*	E
Main Street to Pingree Road	1.00	4	40	11	F	13	F	18	D
Pingree Road to Main Street	3.22	4	45	16	E	22	C	28	C
Main Street to Algonquin Road	1.41	4	35	10	E	17	D	22	C
Algonquin Road to Doyle Road	0.92	4	45	6	F	7	F	13	F
Doyle Road to Hart Road	3.13	3	45	27	C	32	B	34	B
Hart Road to Main Street	1.95	6	35-45	13	F	16	E	20	D
Main Street to Smith Street	4.22	5	45	18	D	22	C	24	C
Smith Street to Palatine Road	1.34	5	35	15	D	18	C	20	C
Overall Average Arterial Speed (mph)				15	—	19	—	23	—

*Assumes 100 percent of CATS "Year 2010" forecast.

*LOS = Level of service.

Implementation Costs

A total investment ranging from \$163.9 to \$172.3 million in 1991 dollars will be necessary to implement all of the recommended plan. This estimate of cost includes approximately \$152.0 to \$157.8 million in roadway, intersection/interchange, and structural improvements, and \$11.9 to \$14.5 million in right-of-way acquisition. Because of the significant investment required for implementation, the following prioritization scheme was developed.

Project Prioritization

The \$163.9- to \$172.3-million implementation cost for U.S. 14 is substantial. The SRA plan will require construction over many years. Table 26 presents a suggested program of priority improvements, categorized by short-term, basic, and post-2010 recommended sections. Total cost divided by these three categories is presented in Table 27.

Short-Term Recommendations

Short-term implementation recommendations represent plan elements or projects that address immediate problems and/or needs, that are generally lower cost in nature, or that are intended to reflect specific known plans, activities, etc. that are expected to occur well before the year 2010. Examples of short-term improvements include intersection upgrading and signalization, or frontage road or other localized reconstruction to accommodate planned development. One important short-term action is the confirmation and identification of the Harvard bypass alignment, and preservation of its right-of-way. This is considered essential to its ultimate feasibility. The total cost of this short-term plan is estimated to be \$8.7 million in 1991 dollars.

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 include most plan elements not designated as short term, with only notable exceptions specified as post-2010 recommendations. The total cost of the basic 2010 plan is estimated to be \$97.4 to \$100.0 million in 1991 dollars.

**Table 26
U.S. 14 SRA Implementation Plan**

Exhibit No.	Description of Improvement	Priority of Implements			Comment
		Short Term	Basic 2010 Plan	Post 2010	
Segment I:					
C-1	Implement recommended cross section		•	•	Widening contingent upon future four-lane improvements north in Walworth County, Wisconsin, and/or potential Harvard bypass, preserve right-of-way as part of basic 2010 plan
C-2	Implement recommended cross section			•	Widening contingent upon future four-lane improvement north in Walworth County, Wisconsin, and/or potential Harvard bypass
C-3 to C-6	No improvement—U.S. 14 on bypass				
6	Alignment designation and right-of-way preservation Construct new four-lane-roadway, provide 40-foot median	•	•	•	U.S. 14 on new bypass alignment
C-7	Implement recommended cross section Reconstruct Lindwall Road and Lembecke Road intersections		•	•	Intersection reconstruction may be pre-2010—contingent on availability of right-of-way
Segment II:					
C-8	Implement recommended cross section Reconstruct Bunker Hill and Paulsen Road intersections		•	•	Intersection reconstruction may be pre-2010—Contingent on availability of right-of-way
C-9	Implement recommended cross section		•		Reconstruct Illinois 120 when signal warrants are realized
C-10	Implement recommended cross section Reconstruct Illinois 120 intersection, add signalization		•		New signals in IDOT's FY 1992 Program
C-11	Implement recommended cross section Upgrade signalization at Kishwaukee Valley Road	•			
C-12	Implement recommended cross section Dean Street—capacity improvements and signalization Illinois 47 intersection—capacity improvements Lake Avenue—reconstruct intersection, add signals		•	•	
C-13	Implement recommended cross section Lake Shore Drive Intersection—improve capacity and add signals Two-way frontage road between Lake Shore Drive and Doty Road	•	•	•	Improvements tied to known industrial and hospital development

**Table 26
U.S. 14 SRA Implementation Plan**

Exhibit No.	Description of Improvement	Priority of Implementations			Comment
		Short Term	Basic 2010 Plan	Post 2010	
Segment III					
C-14	Implement recommended cross section		•		
C-15	Implement recommended cross section Reconstruct Ridgefield Road intersection and signalize, cul-de-sac Andrea Lane	•			
C-16	Implement recommended cross section Crystal Lake Road—implement capacity improvements		•	•	Cross section recently constructed, low benefit improvement
C-17	Implement recommended cross section Relocate/reconstruct Virginia Road intersection, improve signal and capacity		•	•	Cross section recently constructed, low benefit improvement
C-18	Implement recommended cross section Develop access roads on north side of U.S. 14, add new signal	•		•	Cross section recently constructed, low benefit improvement. Tie new signal and access roads to proposed "Crystal Lake Business Center" development
C-19	Develop access roads on south side of U.S. 14 Implement recommended cross section Sands Road intersection—add signalization		•		
C-20	Implement recommended cross section Traffic control and intersection improvements		•		
C-21	Implement recommended cross section Cary Road intersection—convert to at-grade intersection, grade separate with railroad		•		
C-22	Lake Julian Road intersection—add signalization, improve capacity	•			Implement as short term to promote bypass of Main Street intersection
C-23	Relocate and reconstruct Spring Beach Road		•		
C-24	Illinois 22—implement recommended intersection improvements		•		
C-25	Implement all intersection improvements, close median openings where indicated	•			
C-26	Cuba Road intersection—add signalization and capacity improvements, close median opening north of Cuba Road Develop access road	•			

Table 26

U.S. 14 SRA Implementation Plan

Exhibit No.	Description of Improvement	Priority of Implementations			Comment
		Short Term	Basic 2010 Plan	Post 2010	
Segment IV					
C-27	Implement all intersection improvements, consolidate access where indicated, reconstruct Old Northwest Highway opposite Western Avenue	•			
C-28	Implement recommended cross section Develop future access roads, access management plan, add new signalized intersections at Bryant Avenue and Cumnor Avenue		•	•	
C-29	Implement recommended cross section		•	•	Implement cross section improvements north of Main Street (post-2010); implement cross section south of Main Street as part of basic 2010 plan
C-30	Cul-de-sac North Avenue Reconstruct Valencia Avenue Main Street intersection—implement capacity improvements	•	•		To eliminate skewed intersection with inadequate sight distance, reconstruct to eliminate offset intersections
C-31	Implement recommended cross section Eastern Avenue—implement capacity/operational improvements Hill Side Avenue—reconstruct intersection	•	•		
C-32	Implement recommended SRA cross section Ela Road—relocate/reconstruct intersection Implement recommended cross section Reconstruct Baldwin Road opposite Countryside Drive Signalize intersection, relocate Colfax Street	•	•		Implement improvements when operation at U.S. 14 becomes a concern or when service station becomes available for acquisition
C-33	Make other intersection improvements Implement recommended cross section Quentin Road intersection—implement capacity improvements		•	•	Additional lane/median width recommended to comply with full SRA standards
C-34	Implement recommended cross section		•		
C-35	Relocate Hicks Place opposite Lincoln Street Palatine Road intersection—implement capacity improvements		•	•	

Table 27
Opinions of Construction and Right-of-Way
Costs for SRA Improvements Along U.S. 14 (1991 Dollars)

Summary of Total Cost—All Segments

	Short Term^a	Basic 2010 Plan^a	Recommended Post-2010^{a,b}	Total^c
Roadway Reconstruction	6,030,000	76,050,000	46,300,000 to 52,130,000	128,380,000 to 134,210,000
Intersections/Interchanges	900,000	13,700,000	2,000,000	16,600,000
Structures and Retaining Walls	-0-	2,000,000	5,000,000	7,000,000
Other	-0-	-0-	-0-	-0-
Subtotal	6,930,000	91,750,000	53,300,000 to 59,130,000	151,980,000 to 157,810,000
Right-of-Way	1,800,000	5,670,000 to 8,230,000	4,420,000	14,450,000 to 11,890,000
Total	8,730,000	97,420,000 to 99,980,000	57,720,000 to 63,550,000	163,870,000 to 172,260,000

^aSee items listed in Table 26.

^bThe recommended post-2010 item is primarily the construction of the Harvard bypass and reconstruction of existing 11-foot lanes to full 12-foot lanes.

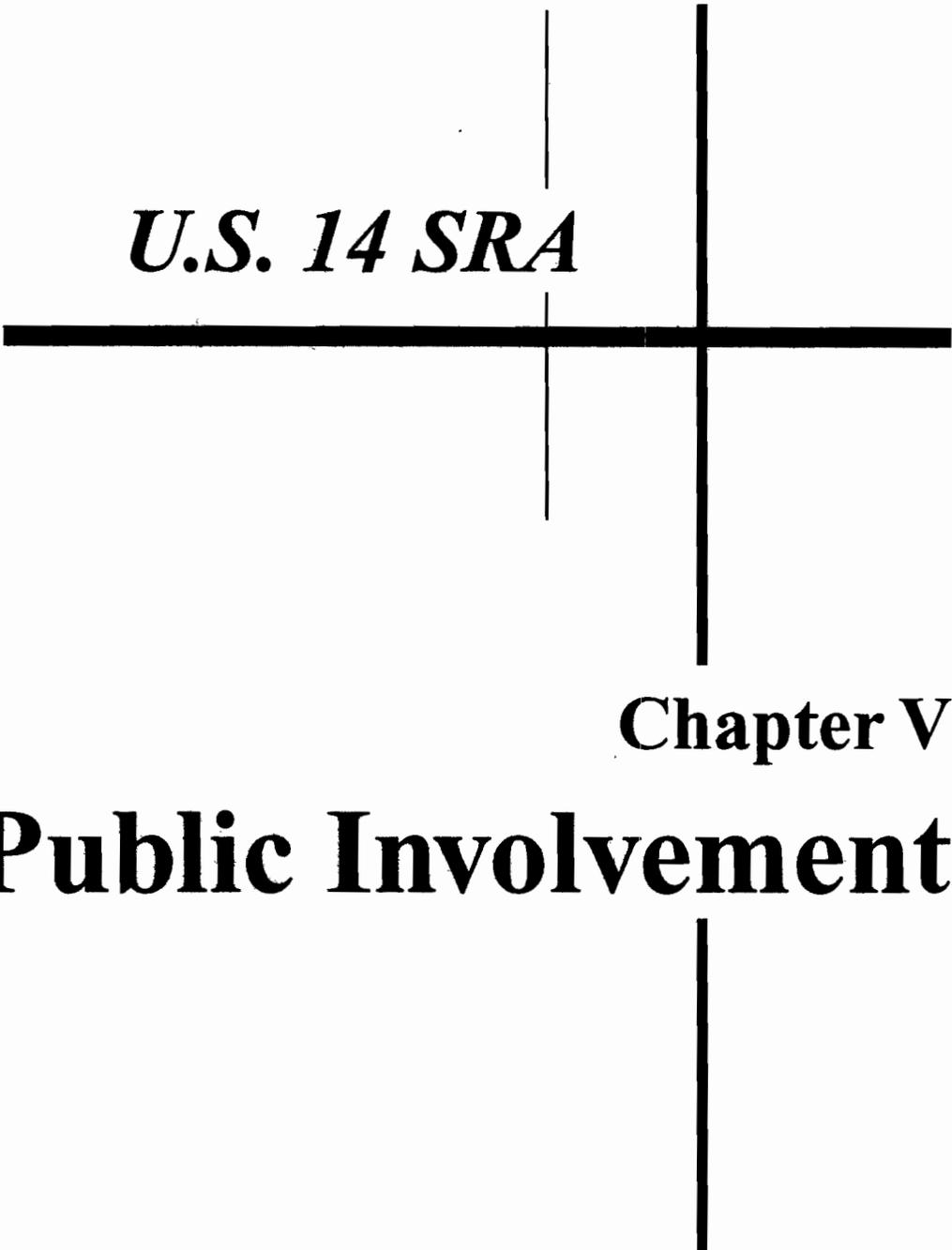
^cThe Total column is the sum of the Short Term, Basic 2010 Plan, and Post-2010 columns.

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 (e.g., 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. A significant amount of the U.S. 14 SRA plan represents such long-term items. Expansion of the rural portion from two to four lanes should be timed with long-term traffic needs and with the Wisconsin Department of Transportation's eventual expansion of U.S. 14. The Harvard bypass actual construction is considered a post-2010 item.

In many segments, the SRA plan calls for upgrading the cross section from 11- to 12-foot lanes. Such improvements may be deferred until a physical reconstruction need occurs.

The primary post-2010 recommendation (see Table 27) shown on the plan is the proposed Harvard bypass. The total cost of all post-2010 improvements is estimated as \$57.7 to \$63.6 million in 1991 dollars.



U.S. 14 SRA

Chapter V

Public Involvement

Chapter V

Public Involvement

The public involvement process includes three elements: the SRA Advisory Panel Meetings, the Public Hearings, and the bimonthly newsletters. This chapter contains copies of the meeting minutes for each U.S. 14 Advisory Panel Meeting, meeting minutes for each Public Hearing, and copies of each of the bimonthly newsletters. A single divider sheet separates each section.

Two advisory panels were established to assist and comment on the study of U.S. 14. The north panel included community officials from Harvard, Woodstock, Crystal Lake, Cary, and Fox River Grove, and were primarily concerned with U.S. 14 from the Illinois-Wisconsin border to Illinois 22. The south panel was established to assist in the study of U.S. 14 from Illinois 22 to Palatine Road, and included representatives from Fox River Grove, Barrington, Barrington Hills, North Barrington, Inverness, and Palatine.

Three Advisory Panel Meetings were held at key junctures throughout the study. The first Advisory Panel Meetings were held on October 24, 1991 (north panel), and October 22, 1991 (south panel). At the first round of meetings, the existing conditions and concerns along the U.S. 14 corridor were presented. At the second Advisory Panel Meetings held February 6, 1992 (north panel), and February 18, 1992 (south panel), the overall long-range alternatives for U.S. 14 were discussed. At the third round of panel meetings held for both panels on September 10, 1992, the draft final report 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 issues and progress.

Finally, two Public Hearings were held, one each in McHenry County and Cook County. These Public Hearings were held prior to final publishing of the SRA corridor report to allow the public to comment on the recommended plan. The McHenry Public Hearing was held October 7, 1992, and the Cook County Public Hearing was held October 14, 1992. Questions, comments, and responses from the Public Hearing are attached at the end of this chapter.

Advisory Panel Meeting Minutes

MEETING MINUTES

CH2M HILL

SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 1
U.S. 14 (Northwestern Highway), Lake & Cook County
South Panel - Illinois 22 to Palatine Road

LOCATION: 111 West Station Street, Barrington, Illinois

DATE: October 22, 1991

TIME: 9:00 a.m.

ATTENDANCE: See Attached Roster

PROJECT: CHI31495.11.A5

The SRA Advisory Panel Meeting for the south section of the U.S. 14 (Northwest Highway) corridor in Cook County 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 October 22, 1991. Attendees were given a handout describing the following: limits of the corridor, a list of involved communities and panel membership, a schedule of subsequent panel meetings and public hearings, SRA planning objectives, desired typical cross sections, planning focus areas, and SRA alternatives development concepts. Specific items discussed are noted below.

1. Eugene Ryan (CATS) opened the meeting with an introduction of the CATS 2010 transportation plan and emphasized:
 - a) The major expressway and transit systems would not be able to carry the 2010 forecast travel demand. Hence, the SRA system was developed to assist in serving high volume / long haul trips.
 - b) The SRA corridors are existing roads serving local needs. Therefore the SRA system must serve a dual role.
 - c) The current study is part of the 5-year program to help make decisions about the ultimate configuration of the SRA corridor. This study will serve as a framework within which long range planning will take place.
2. Rich Starr (IDOT) commented on the status of current SRA studies, noting that this was the second SRA study to get started. Sections in the first study, including one on U.S. Route 31, are nearing the public hearing stage. The third set of corridors to be studied is just getting underway.

M E E T I N G M I N U T E S

Page 2

September 23, 1991

CHI31495.08.A5

3. Tim Neuman (CH2M Hill) presented an overview of the study process noting the following:

SRA studies are done ahead of normal IDOT Phase 1 studies.

The objective is to identify long range needs and develop a tool for preservation of right-of-way.

An important roll of the panel is the coordination of future land use with SRA corridor improvement goals.

Lastly, Tim asked if we had identified all of the people who should be on the panel. He urged all members to forward the names of other people that should be on the panel either as sitting members or as invited guests.

4. Robert Neil (CH2M Hill) presented "Planning Focus Areas" for the south section of the U.S. 14 (Northwest Highway) corridor. Bob noted that these areas represented places where constraints to developing the desirable SRA corridor typical section existed.
5. Tim Neuman completed the presentation by reviewing various improvement strategies which would be considered. The following questions / comments were generated during the presentation.

Nancy Smith (Lake Barrington) was concerned about the intersection of Illinois 22 and U.S. 14. Her concern was that this intersection was on the border of three different advisory panels and each panel may have a different view of what should be done with the intersection. In addition, the desired cross section for Illinois 22 also calls for a 6-lane suburban cross section, resulting in an intersection of two 6-lane roadways.

Bob and Tim explained that the role of the consultant was to take the input from all the different panels and blend them into an overall plan that meets the concept of the SRA route, while coexisting with the existing and future land uses. In addition, this is only the beginning of the planing process and no design has been set for the intersection type or configuration.

The issue of curb and gutter requirements along the suburban cross section was raised by several panel members. The concern is that this would facilitate a closed drainage system and aggravate the current drainage and flooding problems.

Bob and Tim noted that there may be areas where open drainage may be desirable, however, the use of curb and gutter requires less right-of-way. In addition, the use of curb and gutter reduces the clear zone requirements, allowing for the planting of trees closer to the roadway.

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A concern was raised over what impact the widening would have on wetlands adjacent to the roadway.

Tim noted that the main goal of the SRA study was to identify the potential for wetland impact and those areas that are environmentally sensitive. This study can then be used as a starting point for the environmental impact report when a full Phase 1 study is done in the future.

The panel was interested in the possibility of closing either Taylor Road or Cuba Road south of the railroad tracks. Their particular concern was the vehicles queuing along U.S. 14 to turn south when commuter trains cross the roads. The railroad crossing also affects the northbound turning movements because the traffic signals do not allow turning movements to the north when the crossing gates are down. The panel suggested that a more sophisticated signal system be used.

Tim noted that the study would include recommendations for closing some minor cross streets and the panel's input would be valuable in recommending which roads might be closed. Tim also noted that the upgrading of signalization would be incorporated into the final report.

The panel pointed out that there are existing plans to construct several wastewater discharge lines within the U.S. 14 right-of-way or directly adjacent to it.

Bob Neil (CH2M Hill) asked that any design information available on the wastewater discharge project be sent to CH2M Hill.

Ed Glatfelter (Barrington) noted that the village had made a prior agreement with a developer to modify the intersection of Old Northwest Highway and U.S. 14. The plan called for relocation of the intersection to the west and consolidation of the access on the north side of the intersection to a new side road. This plan is presently on hold pending future land development.

In addition, Ed asked that any information we had concerning leaking underground storage tanks be sent to him.

Ed also noted that the desired 6-lane SRA cross section was "raising some eyebrows" with the panel and the community.

These minutes were prepared by Robert Neil, CH2M Hill. Please forward any additions or corrections.

SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 1
U.S. 14 (Northwest Highway), McHenry County
North Panel - Wisconsin State Line to Illinois 22

LOCATION: McHenry County Highway Department, Woodstock, Ill.

DATE: October 24, 1991

TIME: 4:00 p.m.

ATTENDANCE: See Attached Roster

PROJECT: CHI31495.11.A5

The SRA Advisory Panel Meeting for the northwest section of the U.S. 14 (Northwest Highway) corridor in McHenry County 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 October 24, 1991. Attendees were given a handout describing the following: limits of the corridor, a list of involved communities and panel membership, a schedule of subsequent panel meetings and public hearings, SRA planning objectives, desired typical cross sections, planning focus areas, and SRA alternatives development concepts. Specific items discussed are noted below.

1. Eugene Ryan (CATS) opened the meeting with an introduction of the CATS 2010 transportation plan and emphasized:
 - a) The major expressway and transit systems would not be able to carry the 2010 forecast travel demand. Hence, the SRA system was developed to assist in serving high volume / long haul trips.
 - b) The SRA corridors are existing roads serving local needs. Therefore the SRA system must serve a dual role.
 - c) The current study is part of the 5-year program to help make decisions about the ultimate configuration of the SRA corridor. This study will serve as a framework within which long range planning will take place.
2. Rich Starr (IDOT) commented on the status of current SRA studies, noting that this was the second SRA study to get started. Sections in the first study, including U.S. Route 31, are nearing the public hearing stage. The third set of corridors to be studied is just getting underway.

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3. Dave Miller (Metro) presented an overview of the study process noting the following:
SRA studies are done ahead of normal IDOT Phase 1 studies.
The objective is to identify long range needs and develop a tool for preservation of right-of-way.
An important roll of the panel is the coordination of future land use with SRA corridor improvement goals.

Lastly, Dave asked if we had identified all of the people who should be on the panel. He urged all members to forward the names of other people that should be on the panel either as sitting members or as invited guests.

4. Robert Neil (CH2M Hill) presented "Planning Focus Areas" for the north section of the U.S. 14 (Northwest Highway) corridor. Bob noted that these areas represented places where constraints to developing the desirable SRA corridor typical section existed.
5. Dave Miller completed the presentation by reviewing various improvement strategies which would be considered. The following questions / comments were generated during the presentation.

The panel asked if the wetlands shown were from the U.S. Army Corps of Engineers list.

Bob Neil responded that the information came from IDOT files and were most likely from an old list. In addition, there may be additional wetlands along the route which are now or will in the future be considered wetlands under the jurisdiction of some agency. The intent of this study was not to identify all wetlands or environmentally sensitive areas but rather to build a base of information which could be used as a starting point for a full environmental impact statement when a Phase 1 study is conducted.

Dan Shea (Fox River Grove) asked which year IDOT had programmed the Crystal Lake to Cary improvements.

Rich Starr noted that he was not sure when the present planned improvements would occur but that he would find out and get back to Dan.

The panel asked if drainage watersheds would be treated differently from wetlands.

Bob Neil responded that watersheds were something we normally had to work with since you cannot easily avoid them on a project such as this. In addition, the consultant team has a drainage consultant which will be involved with the planning aspects associated with impact to watersheds and drainage.

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The panel voiced their concern over the issue of the traffic counts and that they didn't make counts on Friday evening when the recreational travel was at a peak.

Dave Miller agreed that the recreational traffic volume was an important factor on U.S. 14 and on U.S. 12.

Robert Iftner (Harvard) asked if the study would take into account a bypass for Ill. 173.

Rich Starr and Dave Miller responded that the potential for a bypass of ILL. 173 should be a part of the study.

The panel asked if the CATS forecasts could be made available.

Eugene Ryan said that the preliminary numbers could be made available to Nancy Baker (Panel Coordinator) who could then distribute them to the panel members which would like a copy. It was also stressed that the numbers generated by CATS were not the most important input in making decisions but were only one piece of information.

Bob Neil added that the numbers should be used as an approximate range rather than a specific number. In addition, the Phase 1 study done by IDOT in 1984 projected volumes for year 2000 which are already being exceeded along U. S. 14.

These minutes were prepared by Robert Neil, CH2M Hill. Please forward any additions or corrections.

MEETING MINUTES



SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 2
U.S. 14 (Northwest Highway), Lake and Cook County
South Panel—Illinois 22 to Palatine Road

LOCATION: Barrington Village Hall—Barrington, Illinois

DATE: February 18, 1992

TIME: 9:00 a.m.

PROJECT: CHI31495.11.A5

The SRA Advisory Panel Meeting for the south section of the U.S. 14 (Northwest Highway) corridor in Lake and Cook 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 February 18, 1992. Panel members were furnished a handout prior to the meeting summarizing existing conditions, future land use, and improvement alternatives under consideration.

Tim Neuman (CH2M HILL), project manager of the Phase II SRA Study, opened the meeting by asking everyone to introduce themselves. Tim discussed the study progress to date, and work the consultant team has done since the last panel meeting. He outlined the topics the presentation would include:

- A summary of the existing facility
- A review of the future land use and the SRA designation
- A discussion of the alternatives under consideration

He also reviewed the work that has been ongoing since the last panel meeting. This includes the development of improvement alternatives for the corridor. Broad system concepts were investigated, such as basic number of lanes, alternative bypass or route relocations, interchange locations, future signal locations, and major intersection improvements.

Tim then summarized the content of the first panel meetings, and reiterated the existing conditions and concerns along the corridor. Areas of limited right-of-way, multiple access areas, existing cross section, and other operational and safety issues were presented.

Next, a brief overview of the future land use adjacent to U.S. 14 was discussed. Areas where future land use was expected to intensify were noted, as well as environmentally-sensitive locations and areas that are particularly constrained.

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With this framework established Tim began discussing the focused on presenting the alternatives that where are considered along the corridor. For purposes of discussion, the corridor was divided into four segments overall with this panel concerned with segments III and IV. Alternatives where presented and pros/cons of each alternative were discussed.

Segment III—Crystal Lake

Only the southern portion of this segment from IL 22 to Cuba Road, was applicable to this panel. Alternatives presented include maintaining the existing four-lane cross section, including the rural type section.

Other improvements in this area include capacity improvements at key intersections, and recommended locations of future signals (i.e. Cuba Road). The development of an access management scheme was also recommended.

Segment IV—Palatine

The long range plan for this segment, which extends south form Cuba Road to Palatine Road, includes maintaining four basic lanes. However, a continuous median is recommended, therefore, locations where there is no median, one is proposed.

As with segment one, other improvements in this area include capacity improvements at key intersections, and recommended locations of future signals and the development of an access management scheme.

Questions and Answers/Discussion

- A question was asked as to the source, accuracy and date of the land use information shown on the "Land Use" exhibit. There appeared to be some discrepancies.

The land use information shown on the exhibit was a composite of future land use plans, zoning maps and comprehensive plans provided to CH2M HILL from the local communities.

- A comment was made inquiring whether the long range plans included extending Ela Road to the south across U.S. 14. It was pointed out that we would look into this and evaluate it as part of the recommended improvements.

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- Concern was expressed regarding the Cuba Road intersection and showing this as a future signal location, and the extent of improvements to Cuba Road. It was pointed that as part of the long range plan the Cuba Road intersection may be an appropriate location for a signal. Improvements to this intersection would probably only entail adding a left turn lane on the Cuba Road approaches.
- The need for considering major capacity approaches, including left turn lanes at the intersection of U.S. 14 and IL 59 (Hough St) was questioned. Concern was also expressed that dual left from northbound U.S. 14 to IL 59 could not be accommodated.
- Potential widening of Lake—Cook Road was also questioned, with concern expressed over impacts.
- There was considerable discussion as to why a 6-lane section was not being recommended considering the level of future traffic, and the "Suburban" SRA designation. Concern was expressed that U.S. 14 through traffic may divert to local streets. It was pointed out that the limited right—of—way and potential impacts along some stretches of U.S. 14 preclude a six—lane cross section. Therefore, it is not possible to develop a six—lane cross section over a significant continuous segment of U.S. 14.
- Questions over the forecast ADT were asked. It was explained that the traffic forecasts were only being used as a guide in the planning process.

There was additional concerns that the magnitude of the numbers constitute a six lane facility. It was pointed that the forecasts assumed a network which considered all SRAs were built out to their desirable SRA cross section as well as other major planned highway improvements.

Tim Neuman closed the presentation by discussing the remaining study tasks to be completed. He stated that the consultant team now will begin to evaluate the alternatives under consideration, and also will begin to detail the recommended plan at a scale of 1" = 400' and 1"=200'. He mentioned that the consultant team also would begin to draft the final corridor report, and concluded the meeting by thanking the panel for their attendance.

MEETING MINUTES



SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 2
U.S. 14 (Northwest Highway), McHenry County
North Panel—Wisconsin State Line to Illinois 22

LOCATION: McHenry County Highway Department, Woodstock, Illinois

DATE: February 6, 1992

TIME: 4:00 p.m.

ATTENDANCE: See Attached Roster

PROJECT: CHI31495.11.A5

The SRA Advisory Panel Meeting for the north section of the U.S. 14 (Northwest Highway) corridor in McHenry County 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 February 6, 1992. Panel members were furnished a handout prior to the meeting summarizing existing conditions, future land use, and improvement alternatives under consideration.

Dave Miller, deputy project manager of the Phase II SRA Study, opened the meeting. Dave discussed the study progress to date, and work the consultant team has done since the last panel meeting. He outlined the topics the presentation would include:

- A summary of the existing facility
- A review of the future land use and the SRA designation
- A discussion of the alternatives under consideration

He also reviewed the work that has been ongoing since the last panel meeting. This includes the development of improvement alternatives for the corridor. Broad system concepts were investigated, such as basic number of lanes, alternative bypass or route relocations, interchange locations, future signal locations, and major intersection improvements.

Dick Stafford of CH2M HILL began by presenting a summary of the existing conditions. Areas of limited right-of-way, multiple access areas, existing cross section, and other operational and safety issues were presented.

Next, a brief overview of the future land use adjacent to U.S. 14 was discussed. Areas where future land use was expected to intensify were noted, as well as environmentally-sensitive locations.

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The discussion then focused on presenting the alternatives that were considered along the corridor. For purposes of discussion, the corridor was divided into three segments. Alternatives were presented and pros/cons of each alternative were discussed.

Segment I—Harvard

Alternatives presented in Segment I include expanding the two-lane cross section to four lanes. North and south of Harvard, this segment would be a rural-type design with an open 40-foot median. Through Harvard, three alternatives were shown: (1) extend the four-lane section through Harvard on the existing U.S. 14 alignment as an urban-type cross section without a median; (2) bypass Harvard on the east; and (3) bypass Harvard on the west. The proposed cross section would be a rural four-lane cross section with an open 40-foot median. Locations where interchanges would be considered and where major capacity improvements to existing intersections would be necessary also were introduced.

Segment II—Woodstock

Alternatives presented in Segment II include the expanding existing two-lane portions of U.S. 12 to four basic lanes (providing four continuous lanes through the segment). In addition, intersection improvements are considered at key locations such as Illinois 47, Lake Avenue, etc. Ways of consolidating existing and planning for future access were noted. The use of frontage roads and their potential locations were presented.

Segment III—Crystal Lake

Through the Crystal Lake segment, which incorporates portions of Cary and Fox River Grove, alternatives presented include expanding the portion of two-lane roadway to four lanes. The rural-type cross section would transition to a more urban-type section in the vicinity of Terra Cotta Road. A variable flush-type median would be developed to tie into the existing four-lane divided cross section at Crystal Lake Road.

Between Dole Avenue and McHenry Road, two alternatives were presented:

- (1) retain the existing cross section design with parking on the north side of U.S. 14 and
- (2) eliminate parking on the north side, widen the existing lanes from 11 to 12 feet, and expand the existing median to 16 feet.

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From McHenry Road to approximately Illinois 31, the existing four-lane section would be maintained. From Illinois 31 to Cary Road, it is recommended that the existing two-lane section be expanded to a four-lane section with a continuous median. The median width under consideration ranges from 11 to 16 feet. Southeast from Cary Road, the cross section would tie into the existing four-lane section and the existing section from Cary Road to Illinois 22 would be maintained.

Other improvements discussed within this segment include capacity improvements to key signalized intersections, and the development of an access management plan through portions of Crystal Lake and Cary. Relocation of and modification to the existing Virginia Road intersection in Crystal Lake, and the Main Street intersection in Cary, were also presented.

Questions and Answers/Discussion

- Robert Iftner/Harvard commented that the alternative of expanding the existing two-lane cross section to four lanes on the existing alignment through downtown Harvard would create a number of impacts. Mr. Iftner commented that the idea of bypass was a good idea. Dick Stafford asked whether a bypass east of town or west of town was preferable. Mr. Iftner stated that he felt the east bypass would be better. Dick Stafford stated that future work will study the two bypass options to determine which bypass alternative should be carried forward.
- A comment was made that the existing stop-controlled intersection at Lake Street southeast of Illinois 47 was a concern. Dick Stafford commented that the consultant team is looking at this intersection and is considering a future traffic signal as part of the recommended plan.
- A comment was made that removing parking from Dole Avenue to McHenry Road would be very difficult, and that any parking removed would have to be replaced. Dick Stafford commented that any alternatives that would remove existing on-street parking would have to address and identify ways of replacing the parking with off-street parking proximate to the parking that was removed.
- It was pointed out that the biggest problem with removing parking would be from Pomeroy to Dole.

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- There were comments that four lanes (two lanes in each direction) would not provide adequate level of service and capacity, and that there are current problems with some sections. Dick Stafford pointed out that due to right-of-way constraints and the potential for significant impacts, especially in Crystal Lake and Cary, it is not possible to develop the desired six-lane suburban cross section. He commented that the recommended plan will attempt to maximize the capacity and efficiency of the four-lane section. He also pointed out that the capacity and operation of an arterial is controlled by the operation of the signalized intersections along it. Therefore, to maximize the capacity of the four-lane section, alternatives to improve the intersection capacity by adding turning lanes will be recommended. This could include the addition of dual turn lanes. Other ways of improving the operation of the four-lane section would be through access management, access consolidation, and elimination of the friction effects associated with on-street parking.
- It was asked if the recommended improvements include changing the existing cross section through Fox River Grove. Dick Stafford responded that the basic or "typical" section would remain the same. However, the recommended plan would include improvements to intersections. At some locations, the addition of improvements, such as dual left turn lanes, may require widening the roadway at the intersections. In turn, this may require additional right-of-way at the intersections.

Dave Miller closed the presentation by discussing the remaining study tasks to be completed. He stated that the consultant team now will begin to evaluate the alternatives under consideration, and also will begin to detail the recommended plan at a scale of 1" = 400'. He mentioned that the consultant team also would begin to draft the final corridor report, and concluded the meeting by thanking the panel for attending.

MEETING MINUTES

SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 3
U.S. 14 (Northwest Highway), Lake and Cook Counties
South Panel - Illinois 22 to Palatine Road

LOCATION: Barrington Village Hall—Barrington, Il.

DATE: September 10, 1992

TIME: 9:00 a.m.

ATTENDANCE: See Attached Roster

PROJECT: CHI31495.11.A5

The SRA Advisory Panel Meeting for the north section of the U.S. 14 (Northwest Highway) corridor in McHenry County 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 February 18, 1992. Panel members were furnished a copy of the Draft Final Report prior to the meeting summarizing the recommended improvements for the U.S. 14 corridor.

Tim Neuman (CH2M HILL) opened the meeting by asking everyone to introduce themselves. Tim explained the purpose of the meeting was to review the Draft Report recommendations for the U.S. 14 corridor. He emphasized that the report is still a draft and that the report will not be finalized until after receipt of all review comments from the panel and the public hearing. Tim pointed out that the Public Hearing for this panel has been scheduled for October 14, 1992 at the Palatine Village Hall and the northern panel is scheduled for October 7, 1992 at the Crystal Lake Holiday Inn. Tim described the organization of the report. The front of the report contained an overall summary of U.S. 14 recommendations. The remainder of the report consisted of chapters describing existing conditions, planning framework and recommendations. Tim pointing out that the report was divided into four segments for easy reference.

Tim then summarized the content of the first and second panel meetings, and summarized the rationale behind the draft recommended plan described in the report. Tim reviewed with the panel the thought process and the decisions reached regarding corridor sizing,

Tim introduced Dick Stafford (CH2M HILL) to describe the details of the recommended plan.

Dick proceeded, describing each sheet of the plan and requested comments/questions as he

went through the plan. The following points document comments made during the review of the recommended plan.

- It was pointed out that Foxmoor Road has recently been extended to intersect with U.S. 14.
- On Exhibit C25 questions were asked whether left or U—turns would be permitted at median openings. Left and U—turns would be permitted at these locations and the plans would be clarified to show this.
- The "high—type" design at the Cuba Road intersection was questioned. The need for left turn lanes on the Cuba Road approaches was questioned. In addition, there was concern that roadway widening would extend across the existing railroad tracks.
- Considerable discussion was entered into regarding discussion at the public hearings. It was recommended by a number of panel members that any reference to the EJ&E railroad be avoided. It should also be made clear that recommended roadway improvements are not caused by potential future plans for commuter rail service on the EJ&E railway.
- A comment was that we structure discussion of the plans to "keep out of trouble." A suggestion was also made that a letter be drafted to the Mayors detailing caveats of the plan, such as, the plan is still in draft form, there is currently no funding, no endorsement from IDOT to date, this is a planning study etc., to help deflect in undesirable reaction.
- At the intersection of Hillside and U.S. 14, it was suggested the plan consider left in and no left out at this location.
- A comment was made that the intersections at the Dundee Road interchange should be signalized, and that the poor geometrics of this interchange be discussed.
- A new residential development consisting of 67 townhomes was pointed out near Doe Drive.
- At Lincoln and Hicks Place the notes on the plan should be removed.

Tim concluded the meeting by requesting that any additional comments or questions be forwarded to CH2M HILL through Dave Seglin, the Panel Coordinator.

MEETING MINUTES

SUBJECT: Strategic Regional Arterial System
Advisory Panel Meeting No. 3
U.S. 14 (Northwest Highway), McHenry County
North Panel - Wisconsin State Line to Illinois 22

LOCATION: McHenry County Highway Department, Woodstock, Ill.

DATE: September 10, 1992

TIME: 4:00 p.m.

ATTENDANCE: See Attached Roster

PROJECT: CHI31495.11.A5

The SRA Advisory Panel Meeting for the north section of the U.S. 14 (Northwest Highway) corridor in McHenry County 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 February 6, 1992. Panel members were furnished a copy of the Draft Final Report prior to the meeting summarizing the recommended improvements for the U.S. 14 corridor.

Tim Neuman (CH2M HILL) opened the meeting by asking everyone to introduce themselves. Tim explained the purpose of the meeting was to review the Draft Report recommendations for the U.S. 14 corridor. He emphasized that the report is still a draft and that the report will not be finalized until after receipt of all review comments from the panel and the public hearing. Tim pointed out that the Public Hearing for this panel has been scheduled for October 7, 1992 at the Crystal Lake Holiday Inn, and that the public hearing for the southern panel is scheduled for October 14, 1992 at the Palatine Village Hall.

Tim described the organization of the report. The front of the report contained an overall summary of U.S. 14 recommendations. The remainder of the report consisted of chapters describing existing conditions, planning framework and recommendations. Tim pointing out that the report was divided into four segments for easy reference.

Tim then summarized the content of the first and second panel meetings, and summarized the rationale behind the draft recommended plan described in the report. Tim reviewed with the panel the thought process and the decisions reached regarding corridor sizing,

Tim introduced Dick Stafford (CH2M HILL) to describe the details of the recommended plan.

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Dick proceeded, describing each sheet of the plan and requested comments/questions as he went through the plan. The following points document comments made during the review of the recommended plan.

- Members from Crystal Lake envision Lucas Road extending to the east sometime in the future. The McHenry County College has permission to place signal at the Main Entrance. However, they may agree to relocating the signal in the future.
 - It was suggested that the plan show closed drainage north to Ridgefield Road North. City has annexed property all the way to Ridgefield Road North. This land is anticipated to develop as office/research.
 - It was requested that the plan show access to existing development north of Illinois 176.
 - There was concern about showing access opposite Woodstock Road. Currently this is a driveway not a roadway.
 - In the vicinity of the Virginia road intersection the existing restaurant has an agreement with Montgomery Wards for overflow parking. The plan as it is shown relocates the Virginia Road intersection through the existing parking.
 - West of Main Street Backpath is being implemented and the existing railroad tracks are being removed.
- Rws
- At the Main Street intersection dual left turns should be added to all approaches and two through lanes should be added to the approaches at Main Street with right turn lanes also added.
 - Between Crystal Point Mall and Pingree Road comments were made that there would be no need for future access roads and that developments currently have cross access agreements.
 - The location of the future proposed signal just west of Pingree Road was not liked. The planned location of this signal, which would result in 450' signal spacing was preferred.
 - It was pointed out that there is currently a problem at Cog St. with the Menard's development. A preference for showing Cog St. extended to Pingree Road was voiced.

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- Fox River Grove has recently extended Foxmoor Road to U.S. 14 forming an unsignalized intersection. Future village plans are for this intersection to become signalized.
- Dan Shea also pointed out that in the vicinity of the Il. 22 intersection the village required the Shell Station to have a 100' of setback for the Car Wash. This was done to reduce car wash water from running onto U.S. 14. Proposed improvements in this area would reduce this setback.
- A "savanna" area was pointed out between U.S. 14 and the northwestern railroad tracks. This area extends for Il. 22 east to east of Doyle Road.

Tim concluded the meeting by requesting that any additional comments or question be forwarded to CH2M HILL through Nancy Baker, the Panel Coordinator

Bimonthly Newsletters

SRA SPOTLIGHT

U.S. 14 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

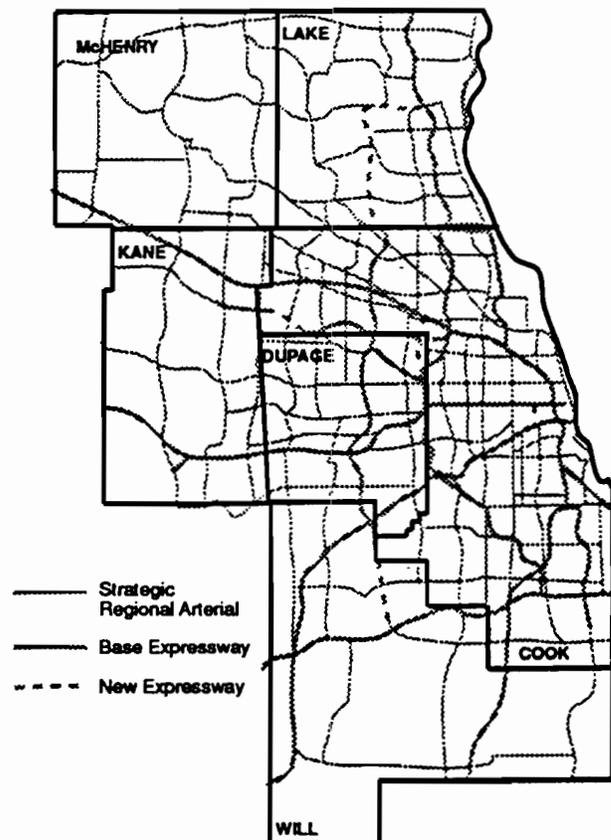
A report on design concepts for the SRA system, prepared by Harland Bartholomew & Associates, Inc., was endorsed by the CATS Policy Committee on January 31, 1991, for use as a guide but not policy in the planning of the SRA system. Some of the design techniques and concepts recommended for use in implementing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

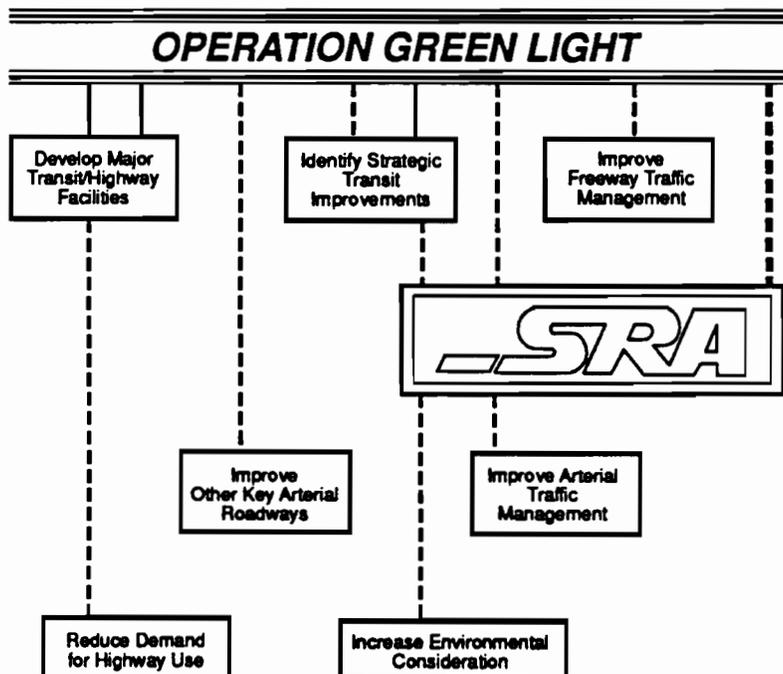
transit more convenient and swift and (2) to encourage more pedestrian and bicycle routes.

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.



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As shown in the illustration below, the two most important factors that define the classification of a street are its access function and movement function. Street classifications range from the freeway, which has complete access control and carries mostly through traffic, to local streets with unrestricted access and no through traffic.

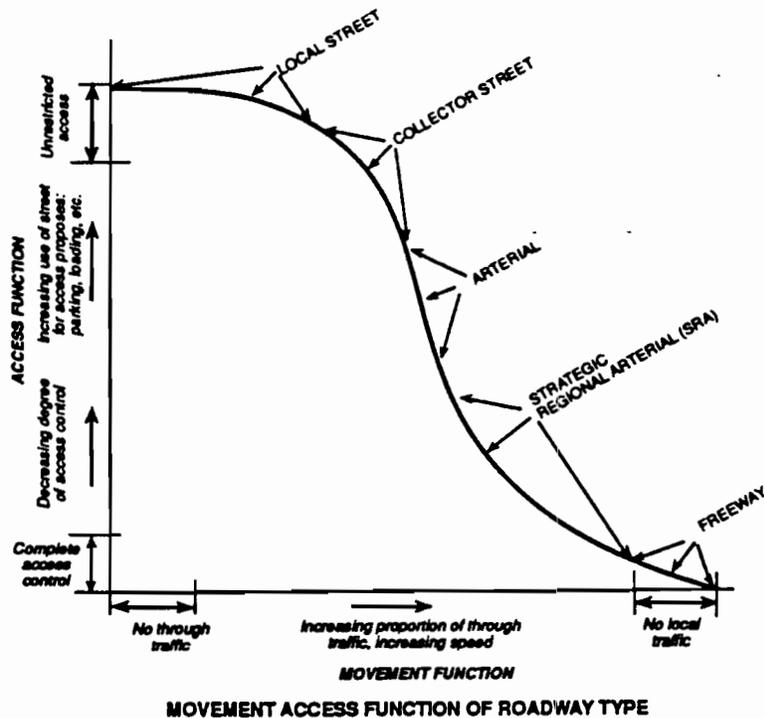
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THE SRA PROJECT (Continued from Page 1)

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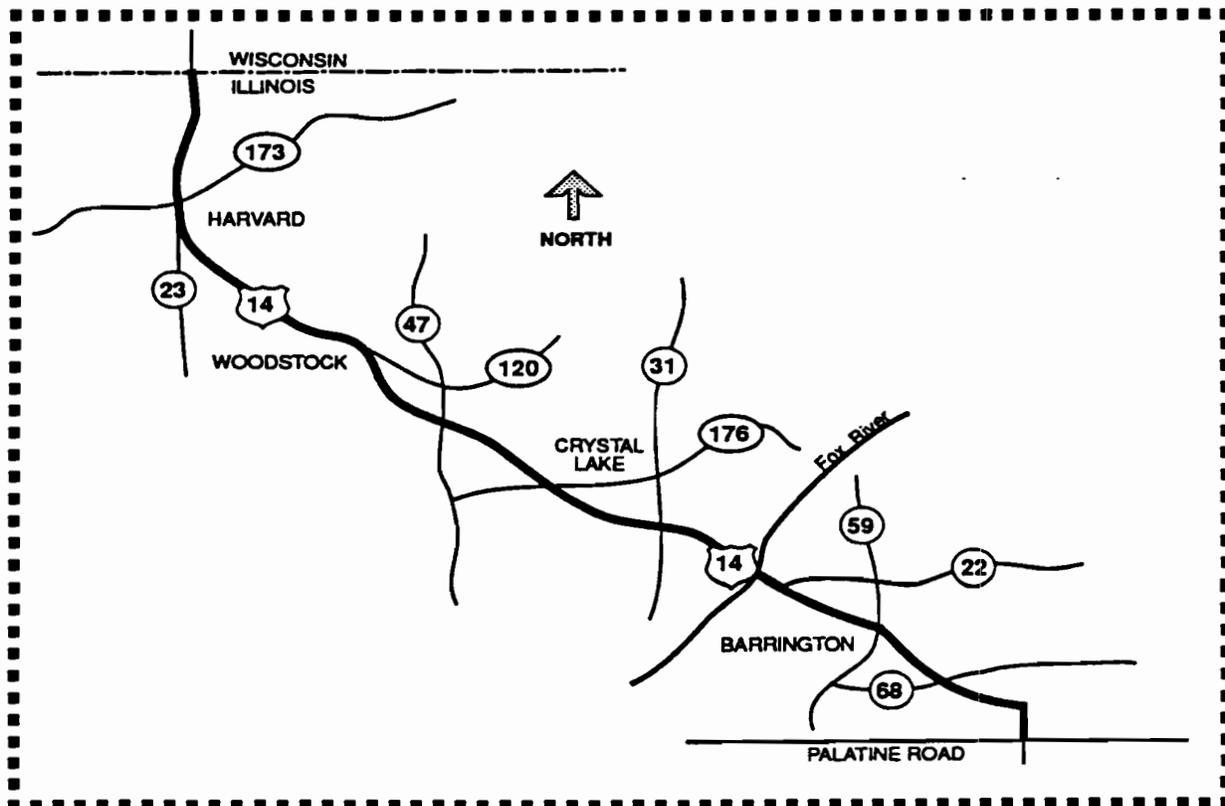
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14 in McHenry County to suburban settings such as Barrington Road in Cook County or County Farm Road in Du Page County, and urban Pershing Road and Archer Avenue in the City of Chicago. The resultant plans for each of these routes will include both 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.

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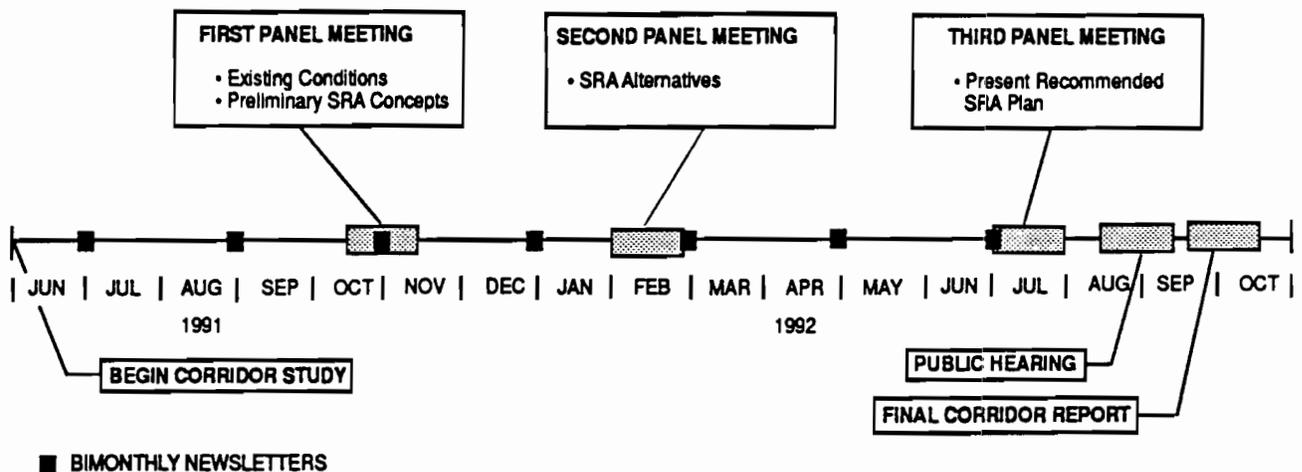
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STUDY PROCESS AND SCHEDULE

CORRIDOR 11—U.S. 14 FROM PALATINE ROAD TO WISCONSIN/ILLINOIS STATE LINE



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For:

The Strategic Regional Arterials Plan

Advisory Panel

Coordinator:

David Seglin
Northwest Municipal Conference

Panel Members:

Barrington
Barrington Hills
Fox River Grove
Inverness
Palatine

For More Information, Please Contact:

David Seglin
Northwest Municipal Conference
1616 East Golf Road
Des Plaines, Illinois 60016

SRA SPOTLIGHT

U.S. 14 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

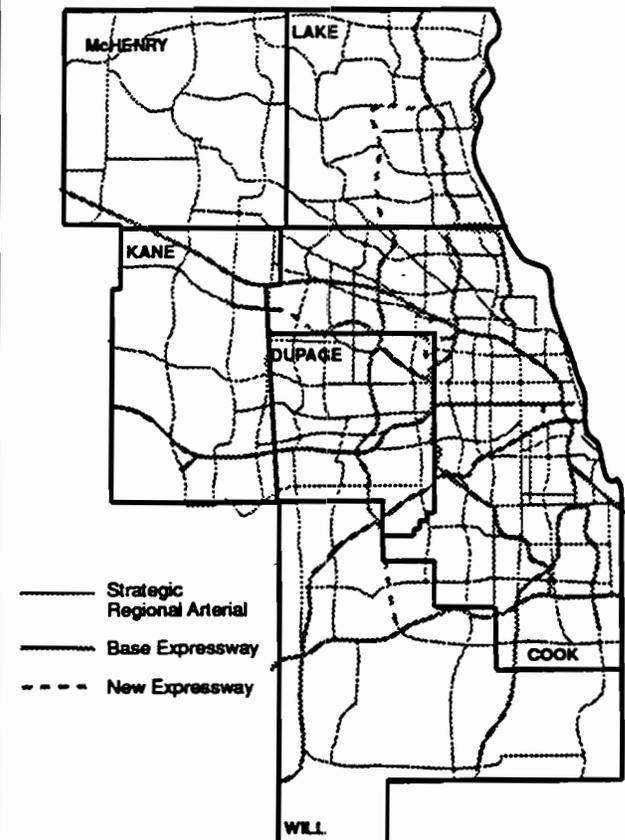
A report on design concepts for the SRA system, prepared by Harland Bartholomew & Associates, Inc., was endorsed by the CATS Policy Committee on January 31, 1991, for use as a guide but not policy in the planning of the SRA system. Some of the design techniques and concepts recommended for use in implementing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

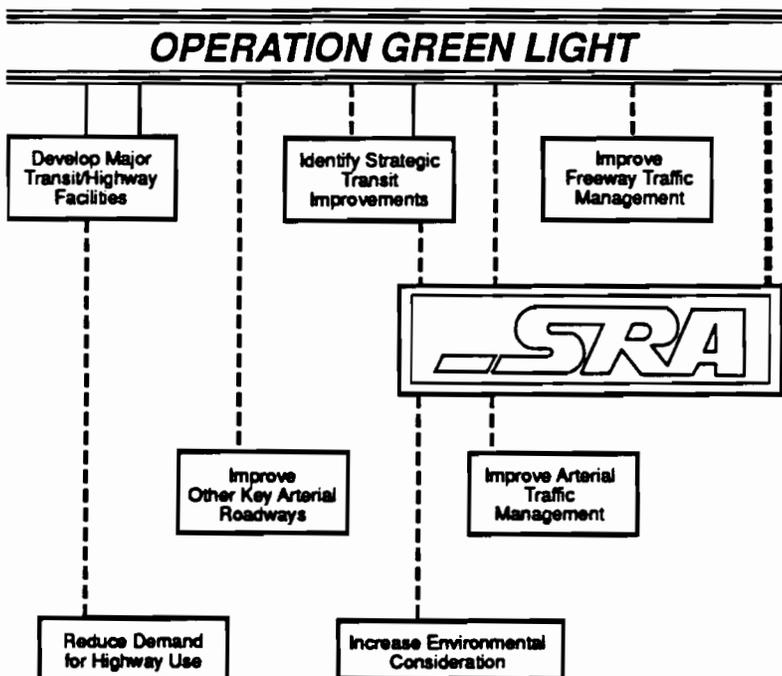
transit more convenient and swift and (2) to encourage more pedestrian and bicycle routes.

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.

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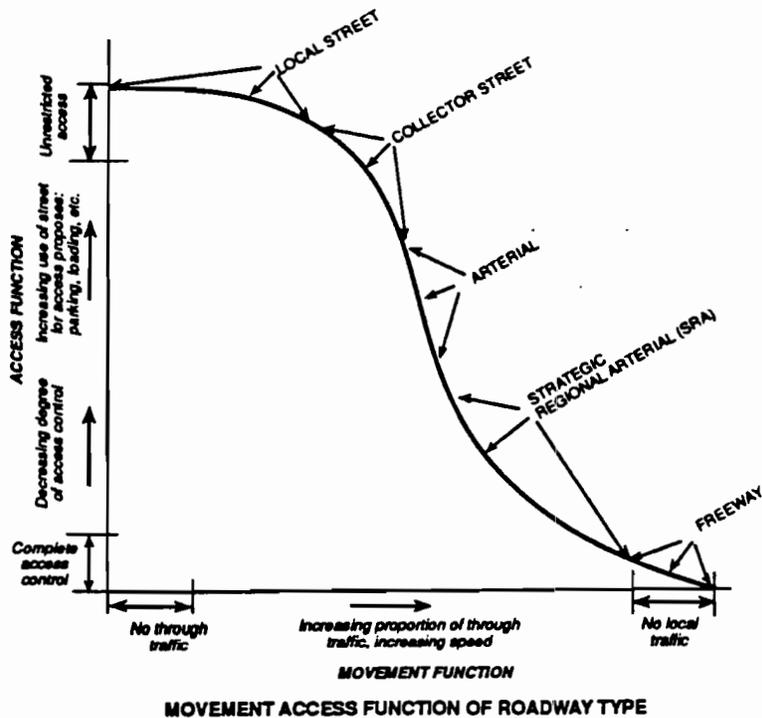
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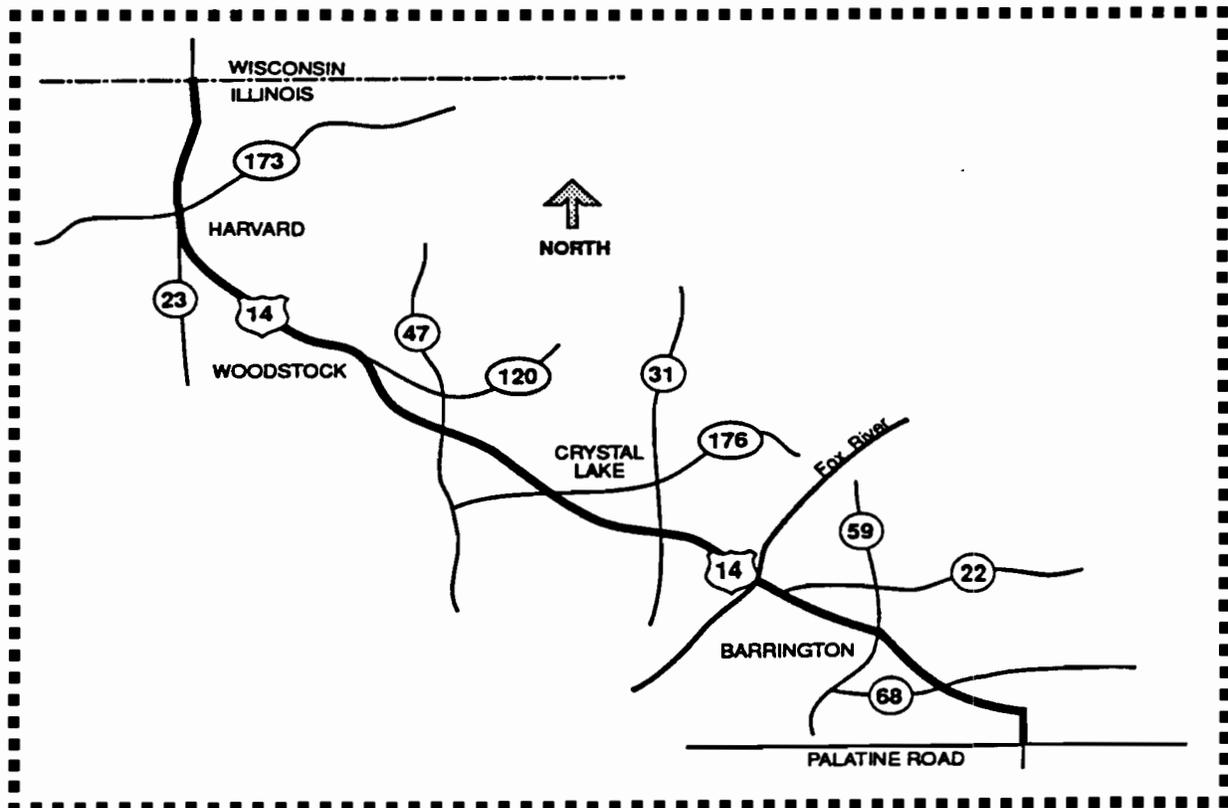
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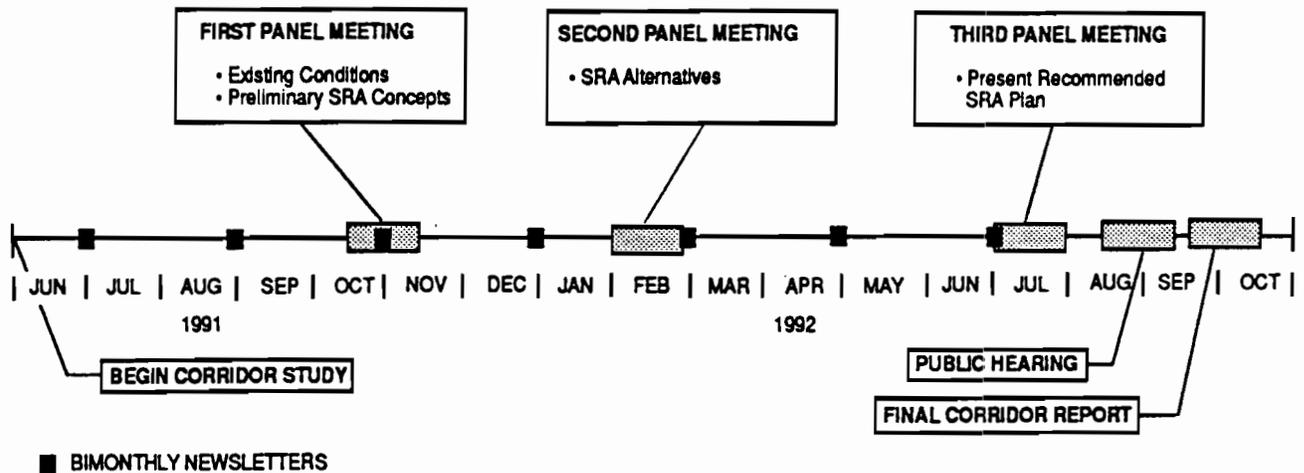
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For:

The Strategic Regional Arterials Plan

Advisory Panel

Coordinator:

Nancy Baker

Panel Members:

Cary
Crystal Lake
Fox River Grove
Harvard
Woodstock

For More Information, Please Contact:

Nancy Baker
Transportation Planner
P.O. Box 369
Woodstock, Illinois 60098

SRA SPOTLIGHT

U.S. 14 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:

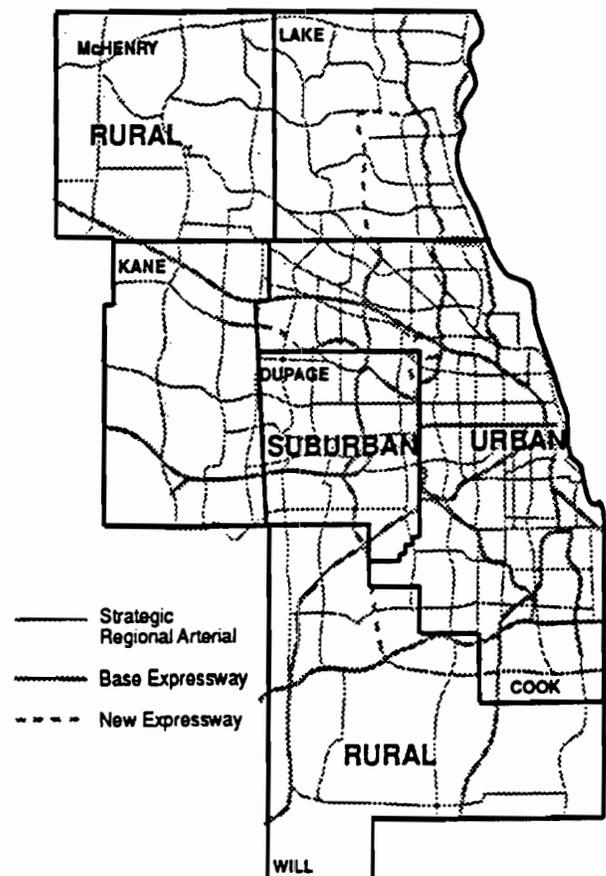
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The areas for each route type are shown in the accompanying map. Urban routes are located in the City of Chicago and adjacent portions of more densely

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

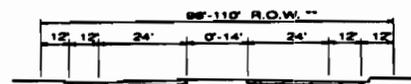
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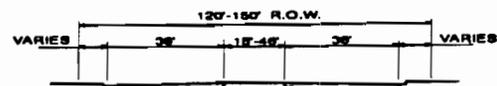
Desirable cross-sections for SRA routes in rural areas are shown below for facilities with and without frontage roads. The rural SRA route would consist of two travel lanes in each direction with left-turn lanes at all intersections and a wide median. As with suburban routes, all major intersection would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

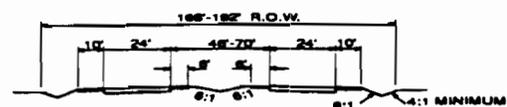
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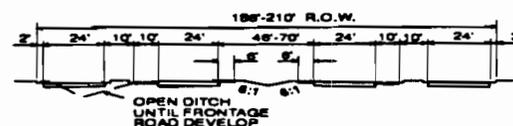
URBAN



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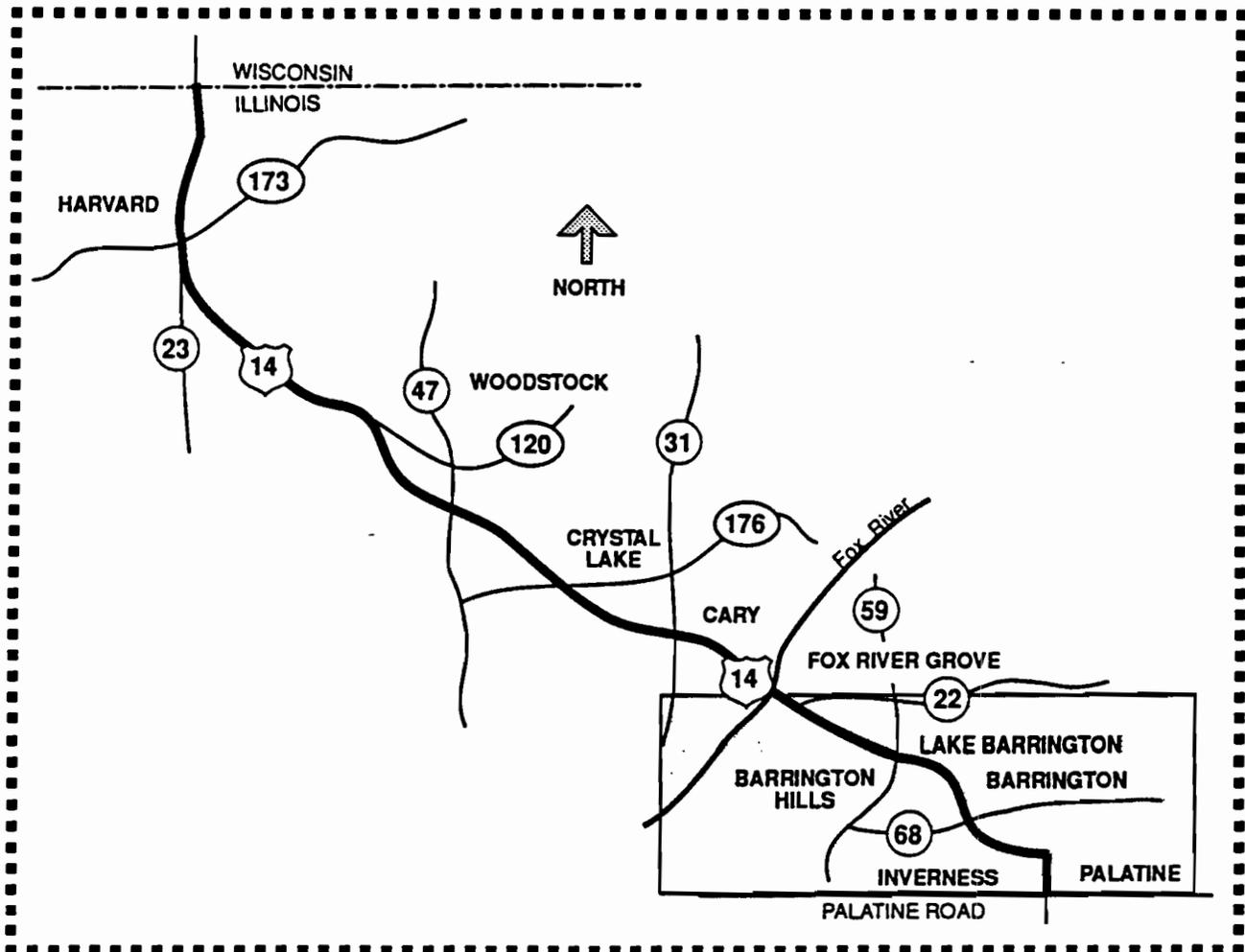
RURAL WITH FRONTAGE ROADS

ROUTE TYPE CONSIDERATION IN THE U.S. 14 CORRIDOR

The U.S. 14 Corridor

The SRA network segment that concerns this panel consists of U.S. 14 (Northwest Highway) from Palatine Road to Illinois Route 22 (Half Day Road) as shown on the accompanying map. The entire U.S. 14 corridor currently being studied runs from Palatine Road to the Wisconsin/Illinois state line. This panel's section of U.S. 14 has been classified as a suburban SRA. The ultimate 2010 desirable characteristics of Suburban SRA routes could include 120 to 150 feet of right-of-way, three through lanes in each direction and a raised median.

Portions of the U.S. 14 SRA route contain less than 120 to 150 feet of right-of-way. The right-of-way through Barrington and Palatine varies from 80 to 100 feet. Special consideration will be given to areas where buildings are situated in close proximity to the roadway.



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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Advisory Panel

Coordinator:

David Seglin
Northwest Municipal Conference

Panel Members:

Barrington - Theodore J. Forsberg
Lake Barrington - Nancy Smith
Barrington Hills - James A. Kempe
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SRA SPOTLIGHT

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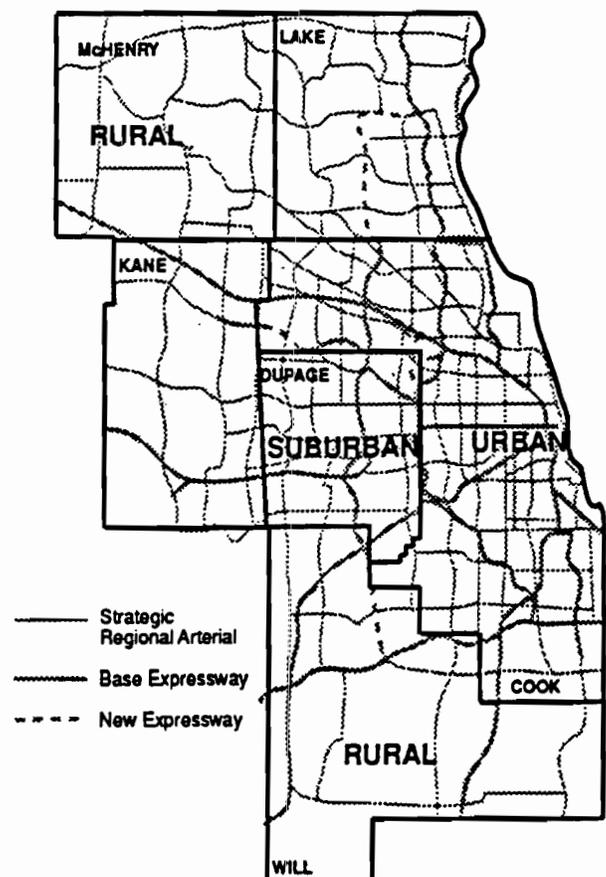
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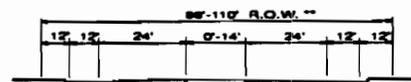
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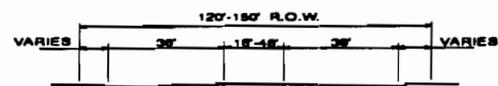
Desirable cross-sections for SRA routes in rural areas are shown below for facilities with and without frontage roads. The rural SRA route would consist of two travel lanes in each direction with left-turn lanes at all intersections and a wide median. As with suburban routes, all major intersection would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

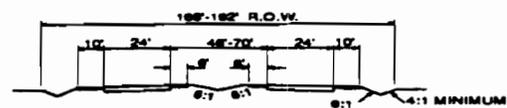
CROSS SECTIONS



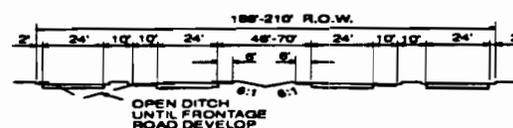
URBAN



SUBURBAN



RURAL

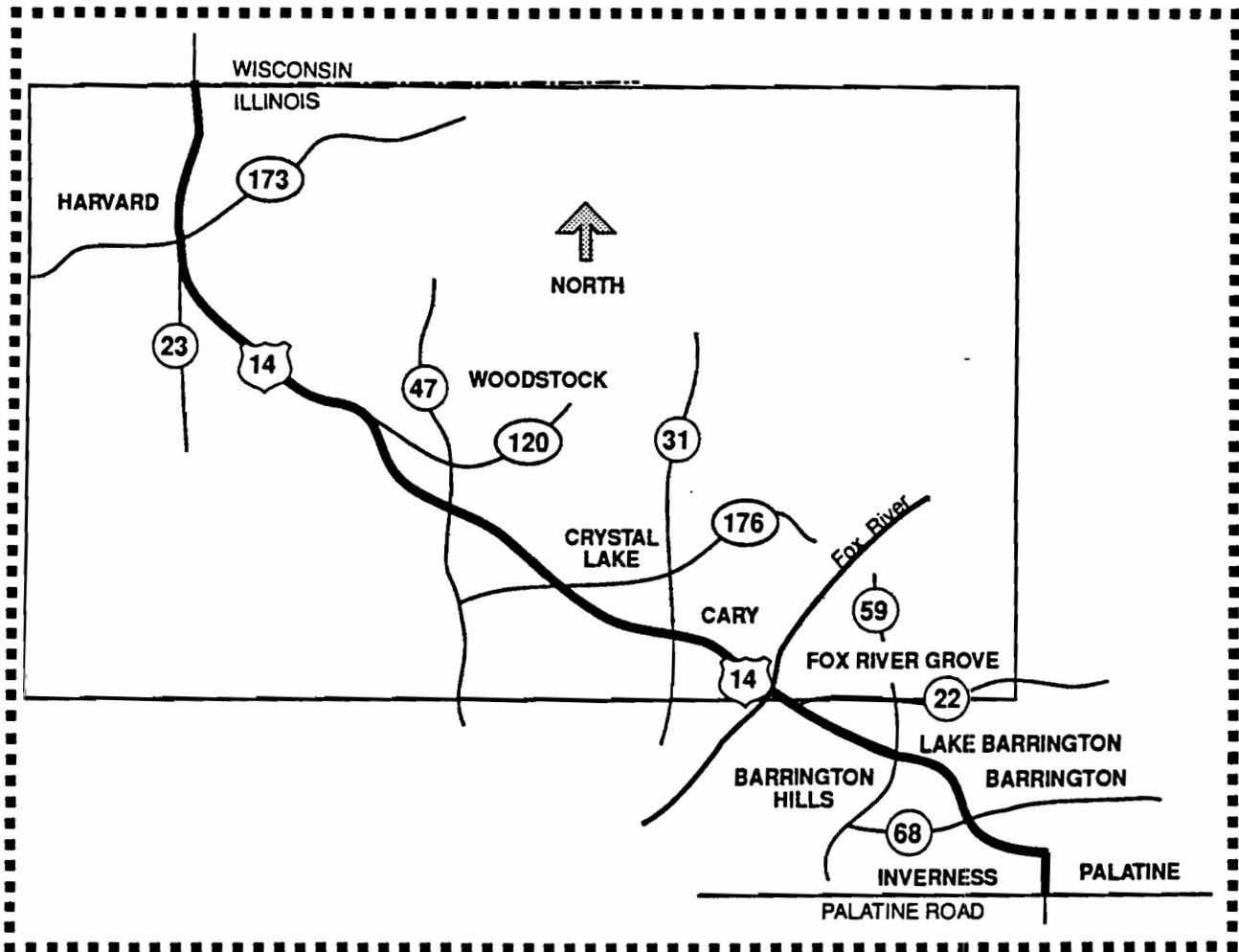


RURAL WITH FRONTAGE ROADS

ROUTE TYPE CONSIDERATION IN THE U.S. 14 CORRIDOR

The U.S. 14 Corridor

The SRA network segment that concerns this panel consists of U.S. 14 (Northwest Highway) from Illinois Route 22 (Half Day Road) to the Wisconsin/Illinois State line (State Line Road) as shown on the accompanying map. The entire U.S. 14 corridor currently being studied runs from Palatine Road to the Wisconsin/Illinois State line. U.S. 14 has been classified as suburban from Illinois Route 22 to north of Crystal Lake. North of this location, U.S. 14 is classified as rural to the Wisconsin/Illinois State line. The ultimate 2010 desirable characteristics of a suburban SRA could include 120 to 150 feet of right-of-way and a six-lane cross section with a raised median. In addition, sidewalks and bus turnouts could be provided where applicable. The ultimate 2010 desirable characteristics of the rural segment of the U.S. 14 SRA could include 168 to 210 feet of right-of-way. This additional width could accommodate a four-lane cross section with provision for future expansion to a six-lane cross section or the addition of frontage roads. A depressed median is also a desirable rural route characteristic. Portions of the U.S. 14 SRA route offer special circumstances, such as the segment through Harvard. At this location the existing right-of-way is relatively narrow and the buildings are close to the roadway. Other areas of special concern include, but are not limited to, Crystal Lake, Cary, and Fox River Grove.



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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For:
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Advisory Panel

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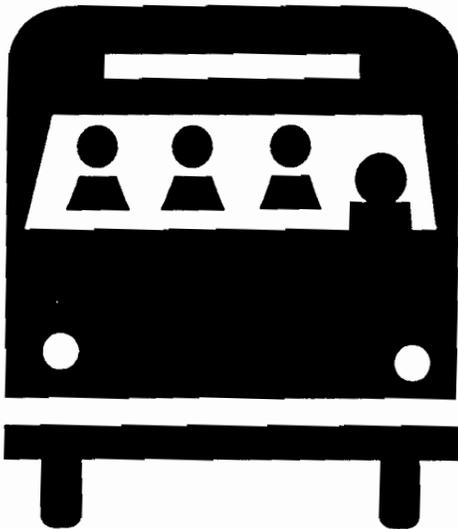
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SRA SPOTLIGHT

U.S. 14 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.
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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
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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.

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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.

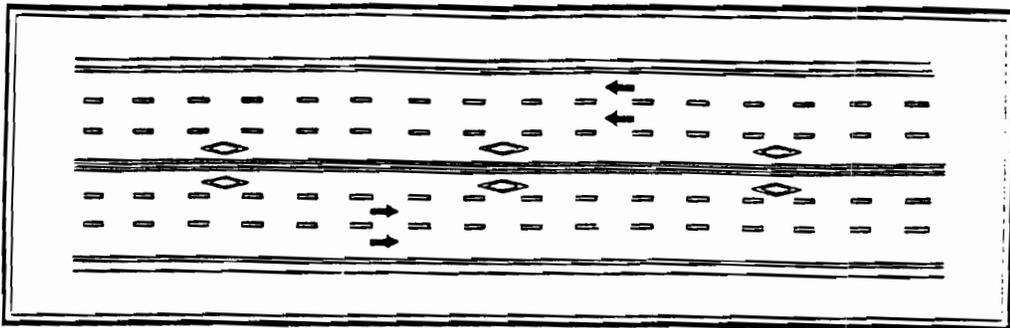


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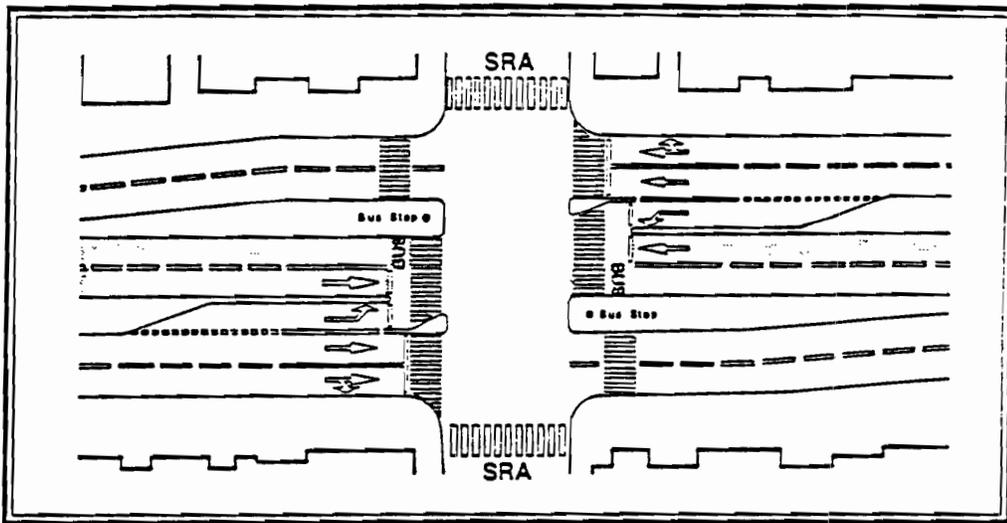


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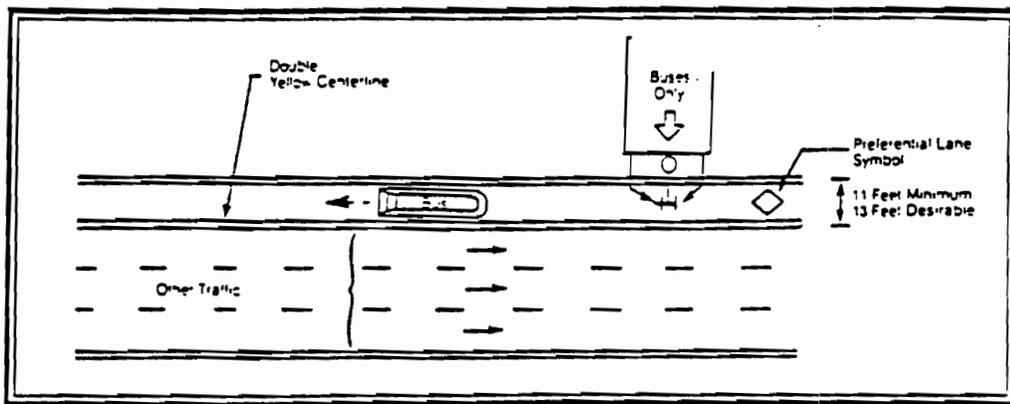


Figure 3 Typical Transit Contra-Flow Lane

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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.

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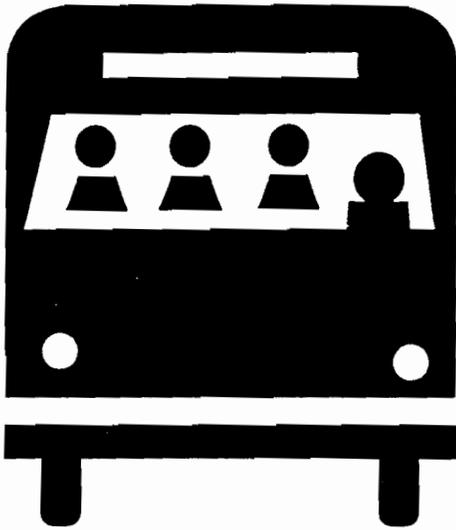
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SRA SPOTLIGHT

U.S. 14 CORRIDOR ADVISORY PANEL

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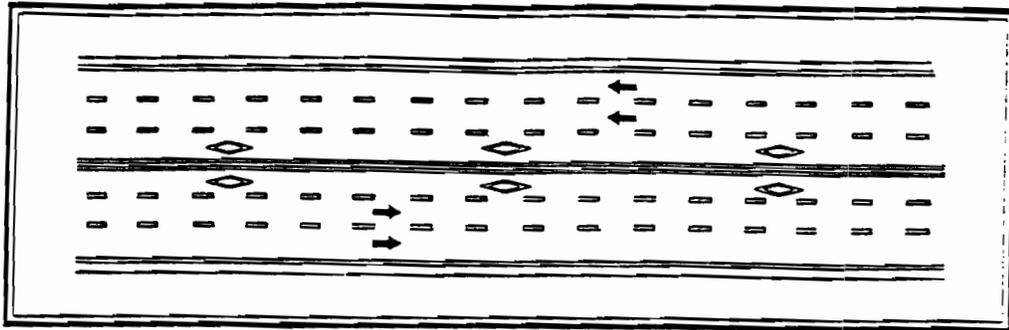


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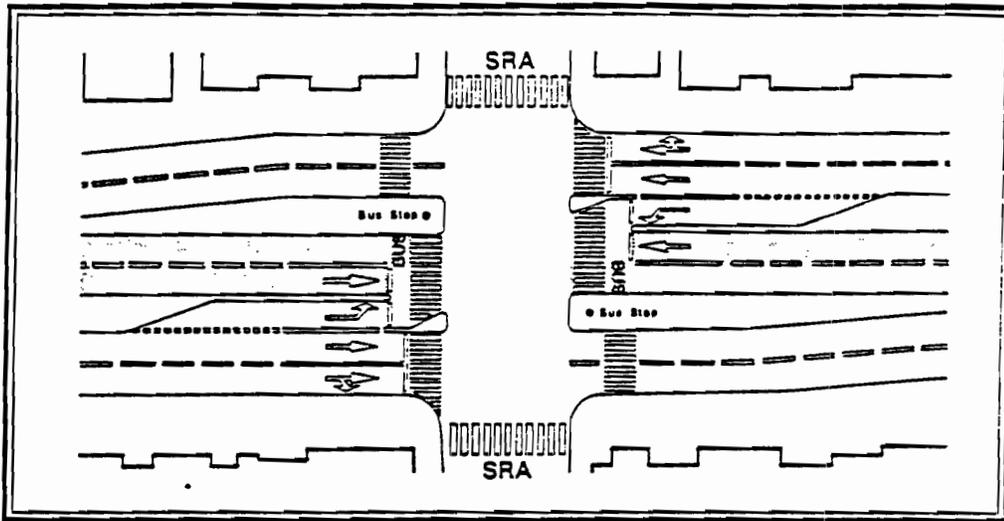


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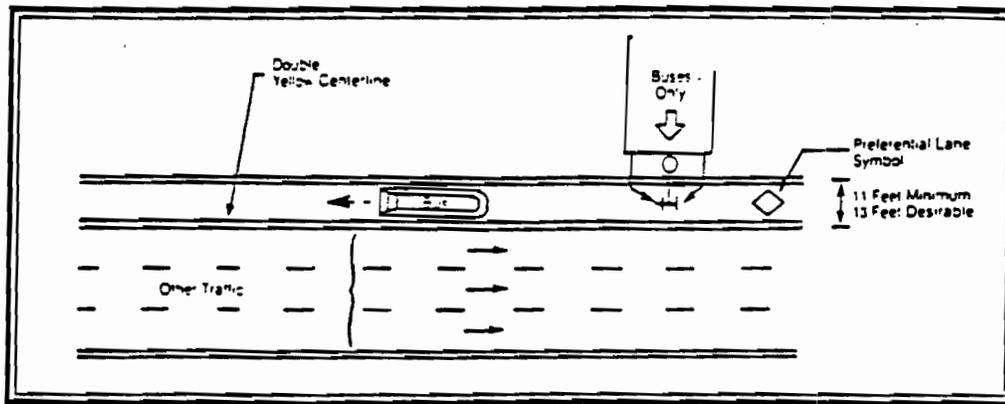


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SRA SPOTLIGHT

U.S. 14 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. 14 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. 14 Corridor

This SRA segment includes areas along U.S. 14 from Palatine Road to Illinois Route 22. The corridor is shown on the accompanying map. Within this segment, the corridor is classified as a "suburban" SRA.

U.S. 14 Corridor

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

- Vacant property at U.S. 14 and Hart Road, in Barrington, is expected to develop as office use.
- At Cuba Road and U.S. 14, the area is expected to develop residential. North of Cuba Road, property is zoned for commercial and industrial use.

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

U.S. 14 Corridor Status

The second Advisory Panel meeting for the U.S. 14 Corridor was held on February 18, 1992. At this meeting, alternative improvements under consideration were presented and discussed, and input was solicited from the panel members. The project team will continue to detail the plan, which will be presented and discussed at the third panel meeting in the fall of 1992.

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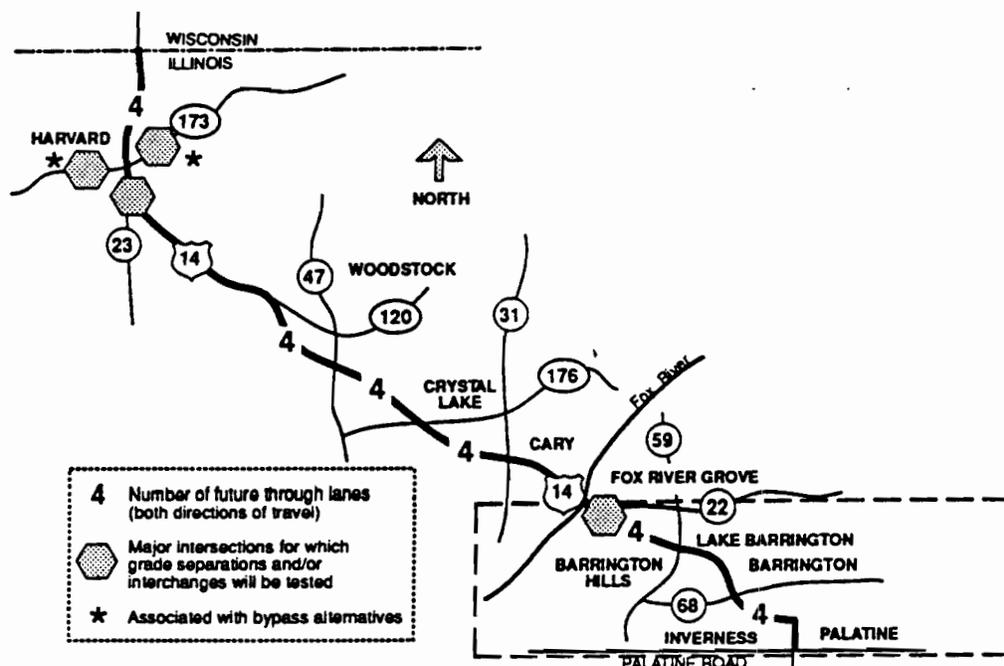
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U.S. 14 CORRIDOR CONCEPT PLAN



SRA SPOTLIGHT

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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.

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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. 14 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. 14 Corridor

This SRA segment includes areas along U.S. 14 from the Wisconsin state line to Illinois Route 22. The corridor is shown on the accompanying map. Within this segment, the corridor carries two SRA facility designations: the corridor is classified "rural" from the Wisconsin-Illinois border to Illinois Route 47 and is classified "suburban" for the remainder of the route.

U.S. 14 Corridor

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

- From the Wisconsin state line to Illinois Route 47, land use along the corridor is predominantly rural. Agricultural use is expected to continue, with development occurring near Harvard and Woodstock, the two main communities along this portion of the corridor.
- U.S. 14 travels through downtown Harvard, an older commercial area. There are several historic structures and buildings located close to the road. Acquiring additional right-of-way would be difficult through this area.
- From Illinois Route 47 to Terra Cotta Road, land use along the corridor is expected to develop with light industrial/office park uses.
- In Crystal Lake, west of Illinois Route 31, commercial land uses, such as a regional mall and several retail strip centers, are located along U.S. 14.

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

U.S. 14 Corridor Status

The second Advisory Panel Meeting for the U.S. 14 corridor was held on February 6, 1992. At this meeting, alternative improvements under consideration were presented and discussed, and input was solicited from the panel members. The project team will continue to detail the plan, which will be presented and discussed at the third panel meeting in the fall of 1992.

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For:

The Strategic Regional Arterials Plan

Advisory Panel

Coordinator: Nancy Baker

Panel Members:

Cary - George Kraus, President

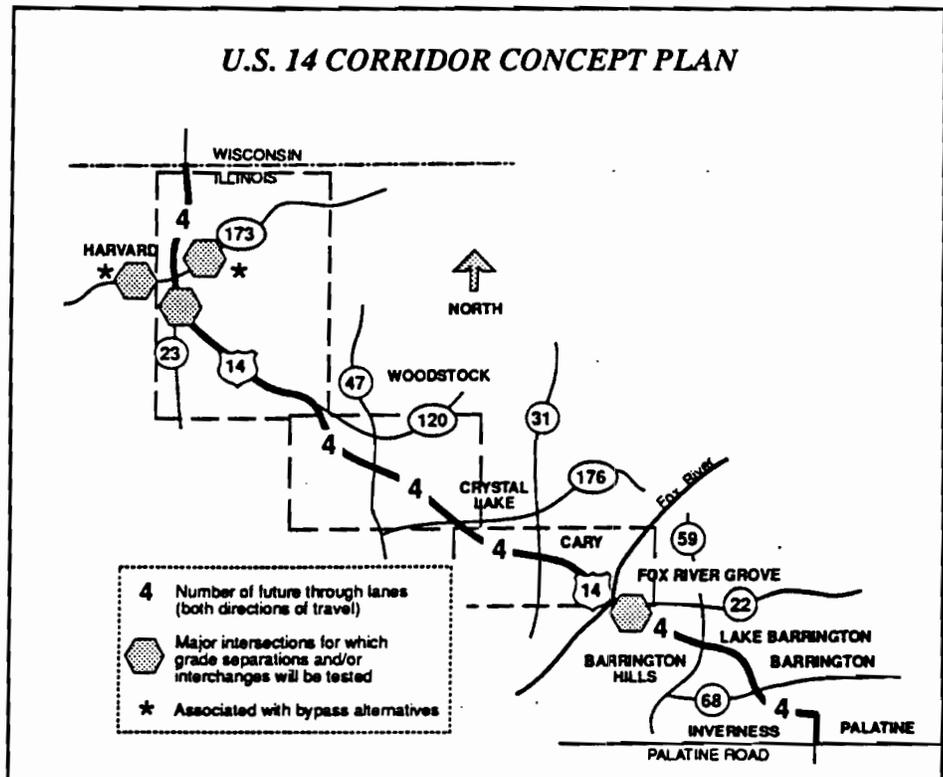
Crystal Lake - George Wells, Mayor

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U.S. 14 CORRIDOR CONCEPT PLAN



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U.S. 14 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.

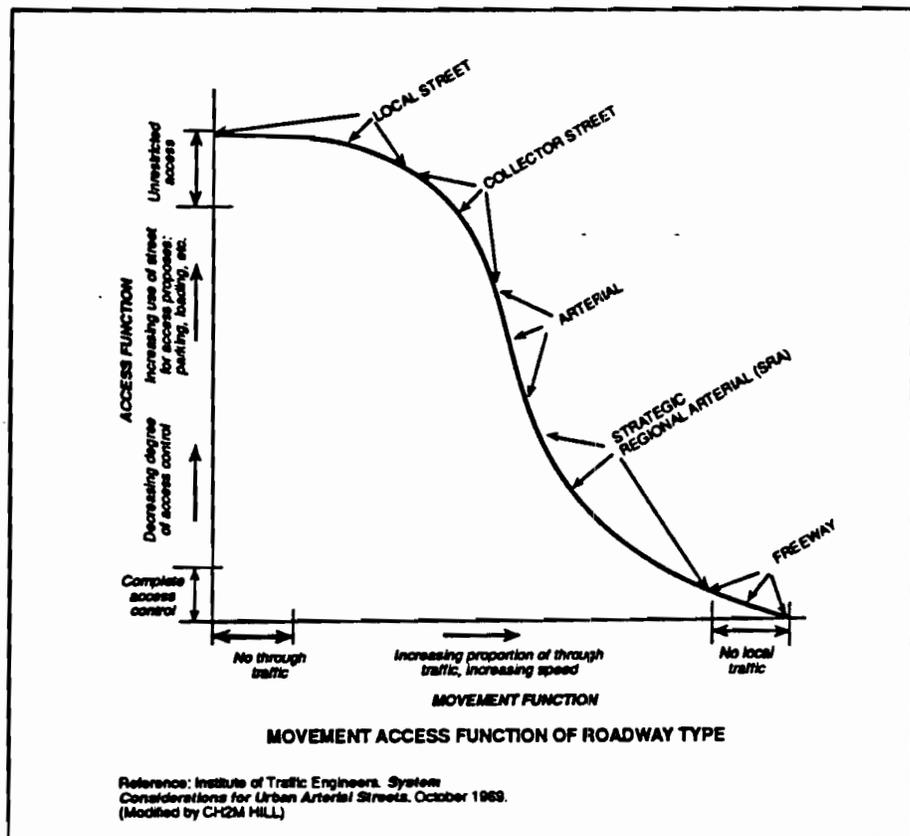
The Illinois Department of Transportation (IDOT) has designated 1,340 miles of existing roadways in northeastern Illinois as *Strategic Regional Arterials* (SRAs). This functional classification falls between the general "arterial" category and "freeway" class.

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



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U.S. 14 Corridor

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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.

U.S. 14 Corridor

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 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. 14

The SRA plan for U.S. 14 should produce a range of benefits to the public and the local communities it serves. For U.S. 14 south from Illinois 22 to Palatine Road, existing four-lane undivided cross section segments will be upgraded by providing a continuous median. The continuous median and continuous left-turn protection will increase driver and pedestrian safety along the facility.

Long-range improvements include reconstructing existing 11-foot lanes to 12-foot lanes (full SRA standards). Other recommended SRA improvements, including access consolidation and intersection relocation/reconstruction, should further relieve congestion and improve safety and operations.

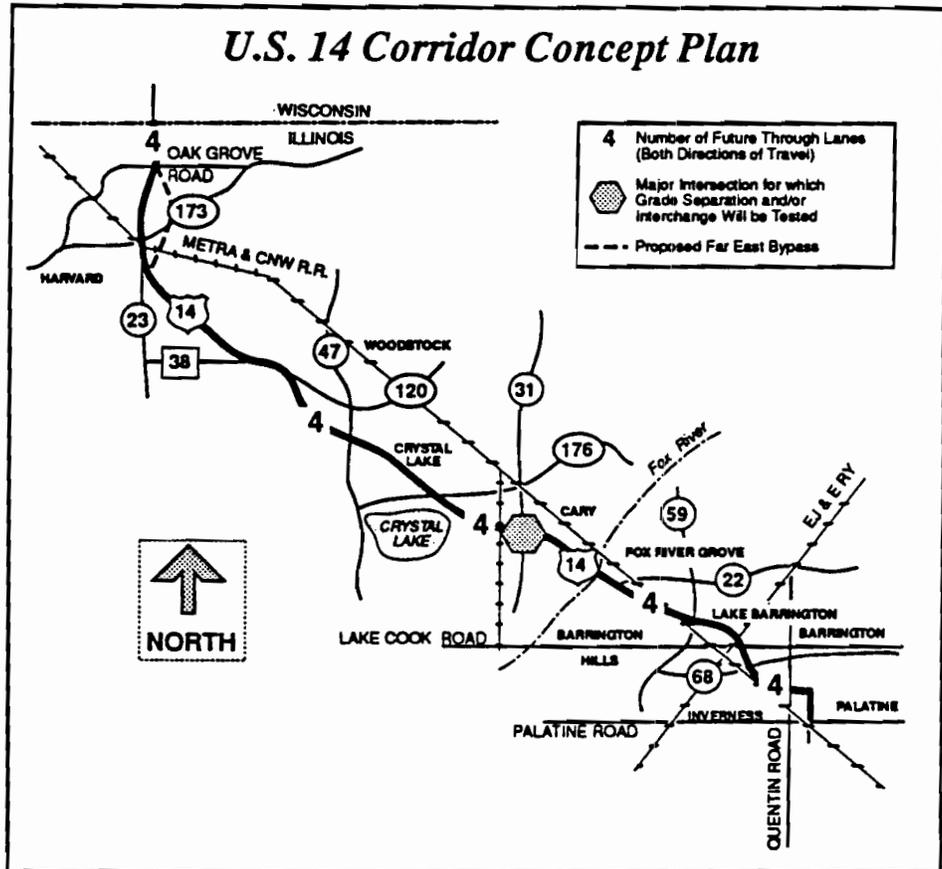
U.S. 14 Corridor

Corridor Planning Status

The U.S. 14 Advisory Panel for this portion of U.S. 14 met on February 18, 1992. Since that meeting, consultant and IDOT staff have worked to develop and to refine the SRA Plan. The accompanying figure illustrates the basic SRA plan that will be presented to the Advisory Panel this summer.

The plan presents U.S. 14 as a continuous four-lane arterial south from Illinois 22 to Palatine Road. In general, cross-section improvements consist of implementing a median where none currently exists, and/or adding a closed drainage, and curb and gutter section.

The consultant has completed a pre-draft of the SRA report, which is currently being reviewed by IDOT staff. The third panel meeting will be scheduled for the near future.



SRA SPOTLIGHT

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For:
The Strategic Regional Arterials Plan

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Northwest Municipal Conference

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Lake Barrington - Nancy Smith, President
Barrington Hills - James A. Kempe, President
Fox River Grove - Daniel Shea, President
Inverness - Donna L. Thomas, President
Palatine - Gregory Solberg, Trustee

SRA SPOTLIGHT

U.S. 14 CORRIDOR ADVISORY PANEL

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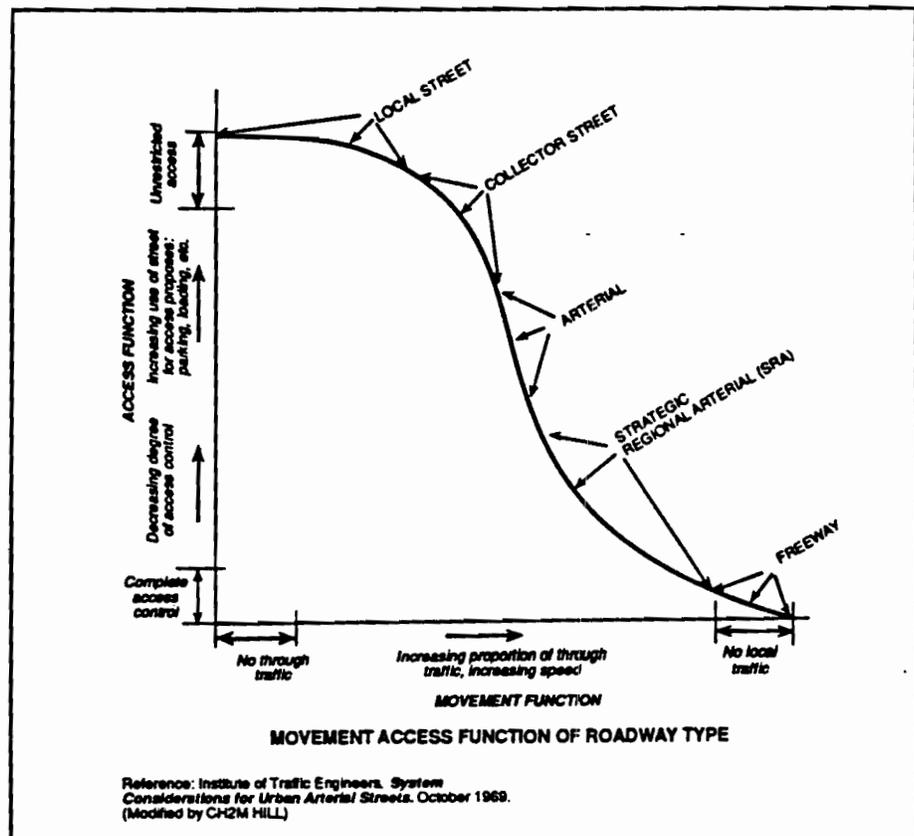
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U.S. 14 Corridor

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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. 14

The SRA plan for U.S. 14 should produce a range of benefits to the public and the local communities it serves. North and south of the town of Harvard, the existing two-lane roadway would be expanded to four lanes (two lanes in each direction) divided by a 40-foot median. Typically, divided four-lane rural facilities are 40 to 50 percent safer than two-lane rural roadways. In order to provide an appropriate SRA cross section, an easterly bypass of Harvard is being considered. This bypass would eliminate any impacts associated with improving U.S. 14 through downtown Harvard.

Further to the south through the communities of Crystal Lake and Cary, the SRA plan includes improvements to signalization and intersection capacity. For the long-range, upgrading existing 11-foot lanes to 12-foot lanes and improving medians are recommended. These SRA improvements would help to relieve existing

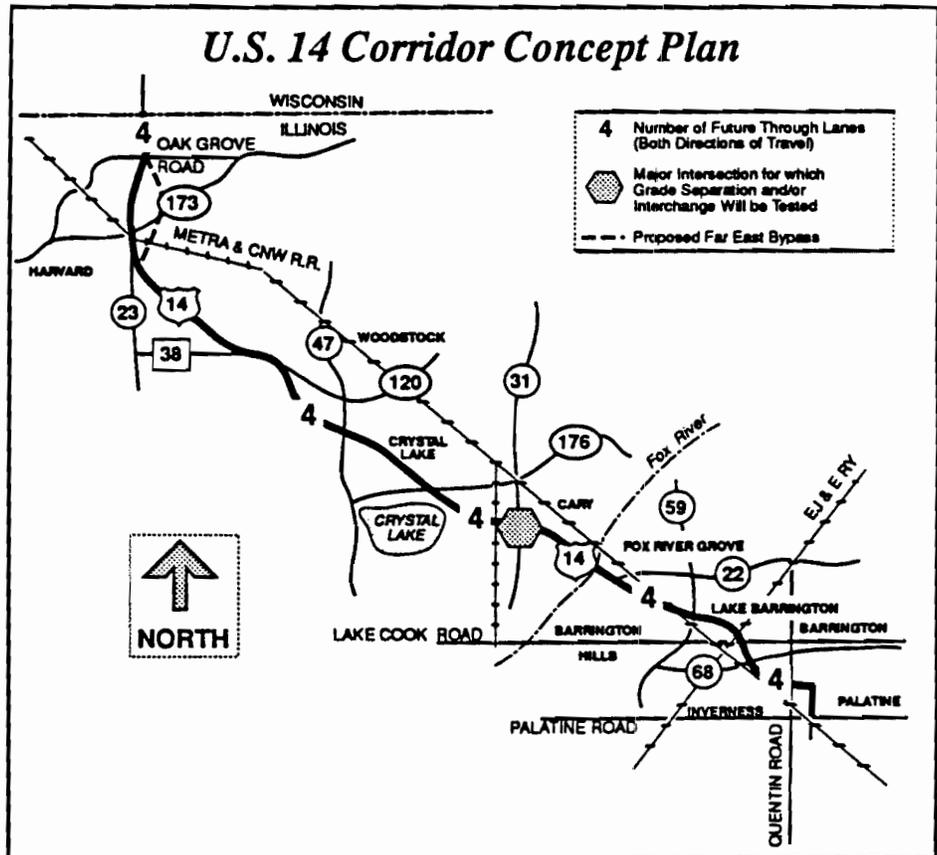
U.S. 14 Corridor

congestion and improve safety.

Corridor Planning Status

The U.S. 14 Advisory Panel for this portion of U.S. 14 last met on February 6, 1992. Since that meeting, consultant and IDOT staff have worked to develop and to refine the SRA plan. The accompanying figure illustrates the basic SRA plan that will be presented to the panel this summer. U.S. 14 is being planned as a continuous four-lane, rural arterial from the Wisconsin-Illinois border south to Crystal Lake. South through Crystal Lake, the arterial essentially has been planned as a four-lane suburban arterial with various cross-section improvements designed to accommodate local constraints and needs.

The consultant has completed a pre-draft of the SRA report, which IDOT staff are reviewing presently. The third panel meeting will be scheduled for the near future.



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For:
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Nancy Baker

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 Fox River Grove - Dan Shea, President
 Harvard - Robert Iftner, Mayor
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SRA SPOTLIGHT

U.S. 14 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

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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.

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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.

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SRA SPOTLIGHT

U.S. 14 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.

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U.S. 14 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.

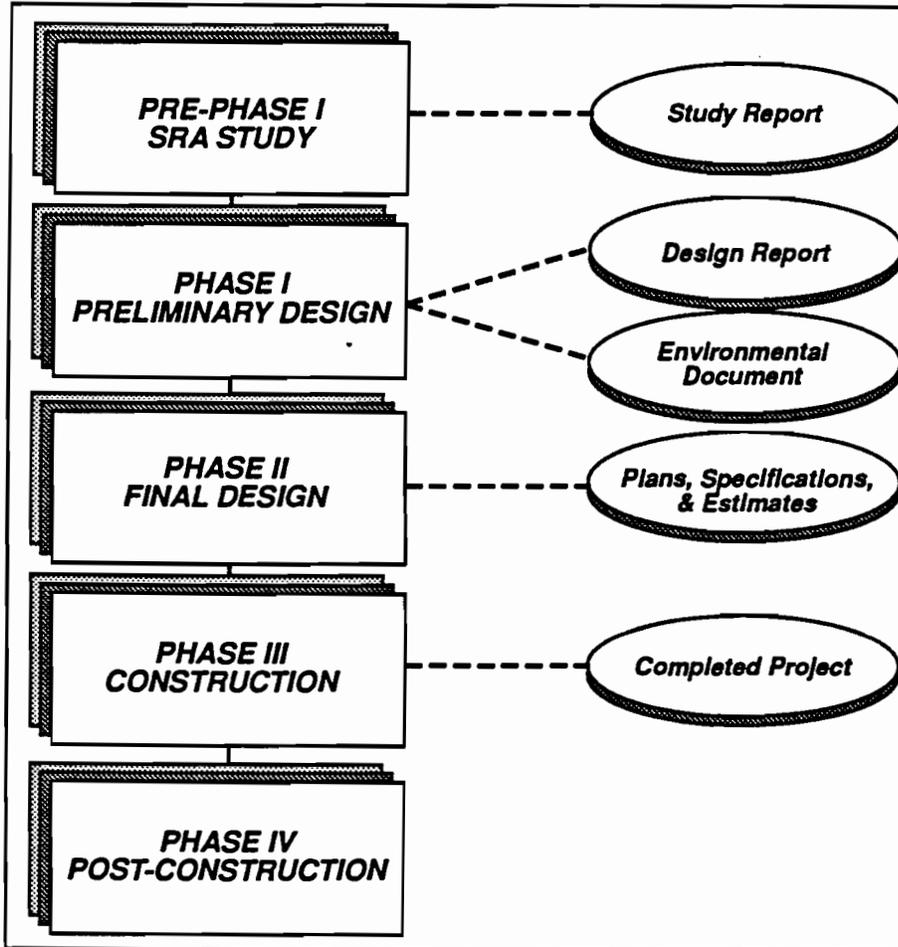
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Although each SRA report identifies project priorities in general terms, the SRA “Pre-Phase I” effort does not develop a specific timeframe for SRA projects. IDOT, with input from local units of government, continually develops and executes a 5-year 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.

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*Phase II Studies—
Final Design*

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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.

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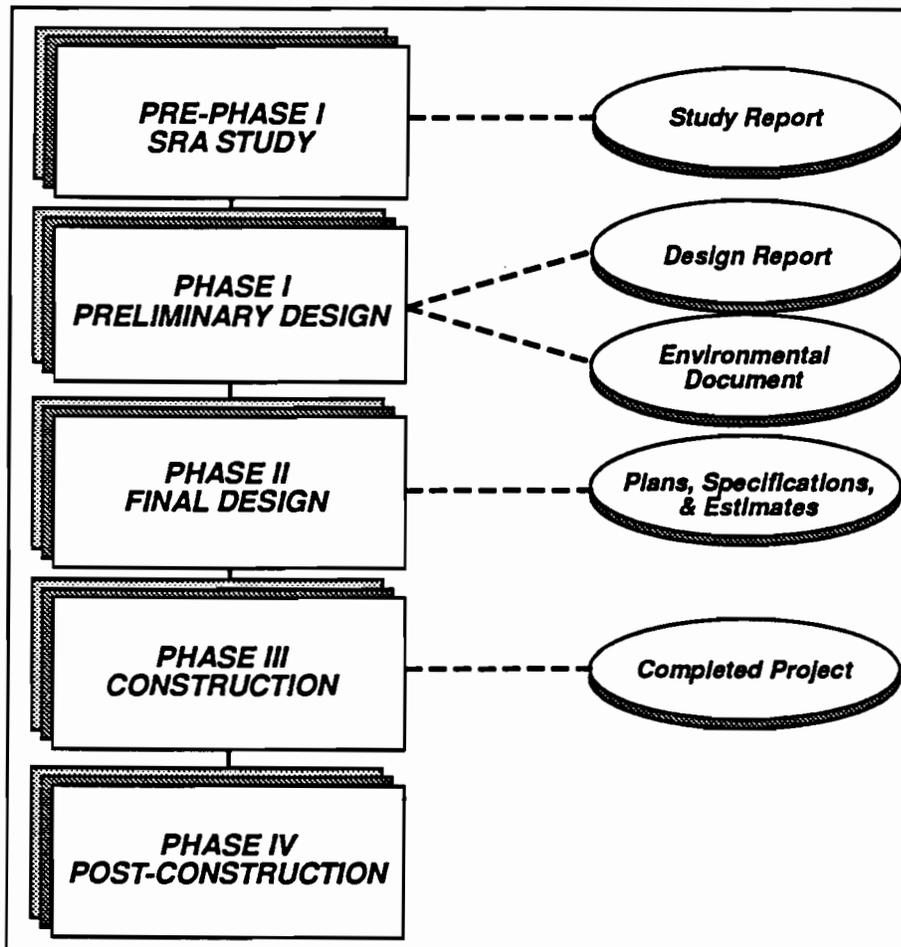
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**Public Hearing Comments,
Questions, and Responses**

TO: Illinois Department of Transportation

COPIES: Rich Starr/IDOT
Tim Neuman/CH2M HILL

FROM: Dick Stafford/CH2M HILL

DATE: February 18, 1993

SUBJECT: U.S. 14 SRA Public Hearing

PROJECT: CHI 31495.11.A5

This memorandum summarizes written and oral comments taken by IDOT, the CH2M HILL staff and the court reporter at the two public hearings for the U.S. 14 SRA held on October 7 and 14, 1992. Responses to the comments are delineated in bold following the appropriate comments.

Mr. Cal Skinner, Jr. (Republican Candidate for State Representative - 64th District)

There is a need for a signal at the proposed medical complex at the southwest quadrant of Doty Road and U.S. 14.

At the intersection of Doty Road and U.S. 14 the recommended plan will show this intersection as a location where a future signal may be warranted. See Exhibit C13 of the final report.

The section of U.S. 14 from North of Ridgefield Road to Doty Road should be expanded to four lanes. This would serve the McHenry County College as well as the proposed medical complex.

The recommended plan (Exhibits C13 and C14 of the final report) shows that this section of U.S. 14 is to be upgraded to four lanes (two lanes each direction of travel).

In Crystal Lake at the intersection of U.S. 14 and Woodstock Street the City of Crystal Lake is about to sign a covenant to a zoning action making it impossible of taking further land on the west. If IDOT is serious about this being three lanes on each side you better get into the Crystal Lake City Hall real fast.

It is our understanding after speaking with the City Engineer that subsequent to a court order, acquiring additional right-of-way in the vicinity of the Woodsock intersection would not be possible for the City of Crystal Lake.

MEMORANDUM

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February 18, 1993

However, the state would still be able to purchase right of way along U.S. 14 in this area. With respect to the three lanes on each side of the roadway, the intent of the proposed cross section is to have two through lanes in each direction of travel, with a left turn lane in the median. To implement this cross section a minimally acceptable right-of-way dimension would be 90 feet.

There is no indication that the cloverleaf interchange at IL 31 is going to be abolished.

An interchange will be maintained. This location is currently being studied separately by IDOT to determine the ultimate interchange configuration.

The relocation and reconstruction of the Virginia Road intersection in Crystal Lake is considered a "complete waste of money."

The recommended plan shown in Exhibit C-17 has been revised to retain the Virginia Road intersection at its present location.

The reconstruction/relocation of the U.S. 14 intersection with Ela Road is a waste of money and a major improvement has recently been made.

The relocation of the Ela Road intersection, approximately 250 feet to the north is considered ultimately desirable to lengthen the distance from the Dundee Road interchange. This will help reduce the weaving conflict associated with vehicles entering northbound from Dundee Road and those vehicles attempting to turn right at Ela Road, thus providing a better operating and safer roadway in this area.

If there is traffic signal coordination along U.S. 14 through Crystal Lake it is difficult to tell. It appears that the lights are timed to allow shoppers out onto U.S. 14 rather than let through traffic through.

Signal coordination does exist along U.S. 14 through Crystal Lake. However, as part of the SRA recommendations, improving the coordination is encouraged, especially to promote better movement of through capacity along U.S. 14.

Are there no park-n-ride lots for car-pooling purposes? If there are any they should be located on the west side of the Fox River.

MEMORANDUM

Page 3

February 18, 1993

Park-n-ride lots have been identified along the corridor. Notes on the plans indicate where these facilities should be located. Park-n-ride facilities are recommended in Harvard at the intersection of U.S. 14 and the proposed bypass; in Woodstock at the intersection of U.S. 14 and IL. 47; in Crystal Lake at the intersection of U.S. 14 and IL. 176, and the intersection of U.S. 14 and IL 31; In Fox River Grove at the intersection of U.S. 14 and IL 22; in Barrington at the intersection of U.S. 14 and IL 59; and in Palatine in the vicinity of the Dundee Road Interchange.

Mr. Dick Klemm (State Representative)

The Virginia Road intersection with U.S. 14 should continue to intersect at its present location.

The recommended plan shown in Exhibit C-17 has been revised to retain the Virginia Road intersection at its present location.

Mr. Robert Stoxen (Township Supervisor)

U.S. 14 should bear southeast after the curve south of Yates/Hebron Road.

U.S. 14 will remain on its present alignment through this segment of U.S. 14. It is recommended that the widening take place to the east side of the roadway. To minimize impacts residential and farm properties on the west side.

Mr. John M. Heinz (Village of Barrington)

The Village of Barrington had several items that they were opposed to and would like them removed from the plan.

Proposed access roads on the north and south sides of U.S. 14 between Cumnor Avenue and Prospect Avenue. The access road on the north side may encroach on the residential areas. The access road on the south side of the road would travel through Lagendorf Park and the Village of Barrington has a current agreement with the Park District that provided for park facilities within the Lions Drive right-of-way.

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Based on the above comments revisions have been made to the recommended plan. These are shown in Exhibit C28 of the final report.

Consolidation of current or existing access to U.S. 14 as it relates to businesses in the area between Cunnor Avenue and Prospect Avenue is opposed unless it is part of a redevelopment or a new development.

While consolidation of existing access is a goal of the SRA study the difficulties both political and other in consolidating driveways are noted. Where possible, access consolidation would be associated with redevelopment or turnover of existing commercial properties. It is the intent of the plan that Barrington and other communities cooperate in access consolidation whenever opportunities arise.

Acquisition of right-of-way at the Illinois 59 intersection is opposed. The purchase of right-of-way would adversely impact and encroach on the residential areas in the northeast quadrant and the commercial properties in the southwest quadrant.

Additional right-of-way would be required for implementation of right turn lanes. The actual impact associated with implementation of right turn lanes will be evaluated in greater detail in future studies (i.e., phase I studies). It is only at that time that the impacts of adding right turn lanes can reasonably be identified.

At the new intersection formed by the realignment of Valencia Ave. and the industrial entrance it is requested that IDOT consider making the exit from the industrial area a right and left turn only, prohibiting the through movement into the residential area.

Based on the above comment the plan has been revised. See Exhibit C29 of the final report. The plan will show the westbound through movement prohibited.

The Village of Barrington adamantly opposes the purchase of right-of-way that would be disruptive to businesses north and south of Lake-Cook Road (Main Street). Furthermore the dual left turn lanes from U.S. 14 to Lake-Cook Road are opposed.

Based on the above comment the recommended plan has been revised. See Exhibit C29 of the final report. The plan maintains single left turn lanes along U.S. 14 north and south of Main Street.

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Mr. Robert Kosin and Mr. Dirk Yuill (Village of Barrington Hills)

The Foxmoor Road intersection was not identified on the recommended plan.

The recommended plan shown in Exhibit C24 of the final report, has been revised to show the new intersection at Foxmoor Road as a future signal location.

The proposed improvements shown for Cuba Road crossing at U.S. 14 are inconsistent with the land use policies of the village of Barrington.

Proposed improvements at Cuba Road intersection, shown in exhibit C26 of the final report, call for the addition of left turn lanes along the Cuba Road approaches to the intersection. Cuba Road is not recommended to be widened except to implement the left turn lanes. This will provide safer operation, by removing left turning traffic from the through traffic lanes, as well as increased capacity. The intersection detail has been revised to reflect a cross section "tie" to the existing width of Cuba Road.

The proposed improvements to the intersection at Hart Road warrant further attention by the consultant before adoption of this plan.

This intent of this study is to outline a framework for recommended highway improvements to the U.S. 14 SRA. Further studies will be performed subsequent to this study before any improvements are implemented.

Mr. Daniel J. Shea (Village of Fox River Grove)

The following are concerns/questions voiced by the Village of Fox River Grove:

Two locations just northwest of the intersection of IL 22 and U.S. 14 are of specific concern to the village. There is a major underground wastewater lift station which would end up under the pavement. There is also a shell station with a car wash attached. There is concern that the water from the car wash may create a hazard on the traffic lanes of U.S. 14. It is requested that these conditions be more carefully considered.

A "savanna" area exists between U.S. 14 and the Metra Tacks. This area extends from IL. 22 to east to east of Doyle Road. Use of this area may be difficult.

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The recommended plan as shown in Exhibit C24 would require approximately 5 to 10 feet of additional right-of-way at this location. Future phase I studies would better estimate right-of-way needs required for the recommended improvements. Furthermore these additional investigations would better determine the impacts to the above concerns. Notes have been added to the plan identifying the location of the lift station as well as the "savanna" area.

The U.S. 14 study shows a non-signalized intersection for U.S. 14 and Doyle Road, while the IL 22 study has a realigned signalized IL 22 and Doyle Road. We feel these two SRA projections to not appear to agree and also that the two SRA proposals should be cross-indexed and considered together when recommendations with these condition are made.

Revisions to Exhibit C24 and the recommended plan have been made to reflect the above comment. The plans shows a potential new signal at the intersection of U.S. 14 and Doyle Road. This would provide access to the zoned commercial areas in the southeast quadrant of the IL 22 and U.S. 14 intersection. In addition, planning for this signal as well as the signal at Foxmoor to serve local commercial traffic, would leave the signal at U.S. 14 and IL 22 to serve SRA to SRA traffic.

The projected 2010 traffic counts for the U.S. 14 and the IL 22 SRA when considered together do not seem to agree.

Corrections to the final report have been made.

It was quite surprising to see that so many of the other communities in McHenry County did not have time available for the presentation when so much future transit in the U.S. 14 corridor will be influenced by this plan.

No comment required

Although the area of U.S. 14 immediately east and west of IL 22 does not specify barrier median development, we feel that barrier median construction in this area is ill-advised.

Only in the area along U.S. 14 between Foxmoor Road and Doyle Road is a barrier median recommended. This is necessary for development of the dual left turn lane along U.S. 14. Access to the commercial areas on either side of IL 22 should be made via the potential future signals at Foxmoor and Doyle.

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The recommended plan for IL 22 has been revised to provide for cross median access to the existing shopping center east of the U.S. 14 intersection.

The businesses in Fox River Grove are predominately a service to local residents. This makes convenience a major factor in the customers choice in purchasing in town. The limiting of access to right in/right out for business along U.S. 14 would be an inconvenience and would result in many potential customers driving to other commercial areas. Striped medians or mountable medians are the best construction in this area.

The recommended plan calls for a flush median through most of this area. The only location where a barrier type median is proposed is between Foxmoor and Doyle Roads.

Other Comments made by the General Public

The reconstruction of the Virginia Road intersection would affect all the commercial properties in the area, devalue them considerably. The existing intersection at Virginia Road should be retained at its present location.

The recommended plan shown in Exhibit C-17 has been revised to retain the Virginia Road intersection at its present location.

The following is a summary of comments regarding a bypass of Harvard.

-2 comments were recorded stating the far east bypass alternative was the preferred bypass alternative.

-4 comments were recorded stating the west bypass alternative was the preferred bypass alternative.

-0 comments were recorded stating the east bypass alternative was the preferred bypass alternative.

-3 comments were recorded stating that a through town alternative was not desired.

-a total of 7 comments were in favor of the by-pass alternative.

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-Concern was expressed regarding either of the eastern bypass alternatives and what impact they may have in the existing conservation district property, that is part of the Rush Creek Conservation Area.

-Concern was expressed that because of the "time-table" of proposed improvements such as the bypass, that people could not plan for there future.

Before any of these questions and concerns can reasonably be resolved or answered, a study of greater detail, such as a location design study, would need to be performed. These studies would better define the extent of impacts associated with a bypass, and more precisely determine reasonable alignments.

Improving U.S. 14 from north of Ridgefield Road to approximately Doty Road should be a priority due to the planned medical complex, the college and the potential for a shopping center just west of the medical center.

The timetable and priority for future SRA improvements has yet to be established. Plans for these developments can proceed, as long as the SRA concept is accommodated.

The frontage road shown between Lake Shore Drive and Doty Road would be incompatible with the medical complex's planned internal circulation road.

The frontage road shown on the plan would be developed in coordination with the internal roadway circulation plan of the medical complex to insure compatibility. What is important to retain is the spacing of at least 400 feet between the U.S. 14/Doty Road intersection and the frontage road/Doty Road intersection.

Better access controls are needed along U.S. 14. In the Crystal Lake area, existing entrances to commercial areas should be consolidated and the use of frontage roads should be considered.

Access management and access consolidation schemes are an important consideration in improving the operation of U.S. 14. Through the Crystal Lake area as well as at other locations recommendations are made to consolidate and/or eliminate access points where possible. Individual communities such as Crystal Lake are encouraged to promote access consolidation.

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The frontage road recommended southeast of Woodstock is a good idea, but it should be part of the improvements, not just a suggestion and left to the municipalities or private developers, because it will not get done.

Improvements shown on the recommended plan such as the frontage road are part of the recommended improvements and not just a suggestion. The intent is to show locations of access to U.S. 14, yet not preclude development.

Concerns was expressed over the impacts to wetland areas along the right-of-way; especially, south of Woodstock, and the crossings of the major waterways. Wetland mitigation/replacement in the Woodstock area should be considered as a way to compensate for unavoidable losses.

Improvements to U.S. 14 took into consideration known wetlands, and attempted to avoid or minimize any impact. If it is determined in more detailed studies that wetlands are impacted, wetland mitigation sites would be included as part of the improvement plan. Such a determination would take place as part of Phase I studies.

The Illinois Department of Transportation should be seeing to it that a Fox River Expressway be developed to relieve congestion and reduce truck traffic in Crystal Lake and Cary.

No comment is required

The plan states that 15 feet of additional right-of-way will be required between Terra Cotta and Ridgefield Road. This will result in the loss of parking in the front of a commercial property (restaurant) located in this area.

The plan as shown in Exhibit C15 of the final report would encroach on existing parking at this location. Additional parking could possibly be replaced on the north side of the existing property. Actual right-of-way needs would be identified in future Phase I studies.

This plan looks just like the Fox Valley Freeway Plan. It is very hard to understand where IDOT is getting the idea that a super highway is going to solve our traffic problems.

U.S. 14 will remain as an arterial, with at-grade intersections and grade separations at existing locations. It will not become a freeway.

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There are several areas where there are prairie remnants between the roadway and the train-line, such as north of Palatine, U.S. 14 at Baldwin, where the intersection is proposed to be reconstructed. There is also a prairie remnant south of Barrington and north of Cary and between Cary and Crystal Lake. It is requested that those areas be identified on the plan and commitments be made to protect, save or move them.

Before any recommended improvements are implemented, further studies will be performed. These included Phase I and II studies including an environmental document which would address prairie remnants and other environmental issues.

Has anyone approached Metra regarding a new station at U.S. 14 north of Cary?

Yes. Metra is evaluating extending the McHenry branch of this line to Richmond. Along with this plan, a new station is proposed at Pingree Road to act as a reliever to the Crystal Lake Metra Station

Does the plan recognize new commuter stations at Pingree Road and at Hart Road?

Metra is considering the potential for a new commuter stop at Pingree Road. See the comment/response above.

Are there provisions for bicycles along the SRA?

The plan for U.S. 14 has taken into consideration known or planned bike paths crossing the corridor. No known bike paths exist along U.S. 14, or cross U.S. 14. Provision for bicycles along the traveled way of U.S. 14 is not recommended, give the emphasis on higher volume and commercial traffic.

At the intersection of Three Oaks Road and U.S. 14 certain turning movements are difficult to make as a result of the skewed intersection geometry.

Existing right-of-way constraints severely limit major feasible improvements. Detailed intersection improvements will be investigated in more detailed studies to follow.

The amount of green time afforded the Main Street approaches at the Main Street and U.S. 14 intersection is too short.

M E M O R A N D U M

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Improvements to existing signal systems are part of the improvements recommended as part of the SRA Plan. Further studies will identify deficiencies and the need for improvements at specific signal locations.

The Village of Inverness is studying the realignment of Colfax opposite Sterling Ave. forming a four leg intersection at U.S. 14.

The plan shown in Exhibit C33 of the final report has been revised to reflect the village's plans.

At Lily Pond Road east of the existing right-of-way is an existing wetland which would serve as a good wetland mitigation site if needed.

No comment required

Expansion of the Lincoln Ave. Metra parking is being discussed by Fox River Grove.

No comment required

A comment was made that the U.S. 14 right-of-way through Crystal Lake is not owned by IDOT. That it was never dedicated.

No comment required.

Transcript available for review at Illinois
Department of Transportation—District 1
headquarters.

IN RE:)
)
STRATEGIC REGIONAL ARTERIAL)
)
OPERATION GREENLIGHT)
)
U.S. ROUTE 14)
FROM THE ILLINOIS-WISCONSIN)
STATE LINE TO PALATINE ROAD)

REPORT of comments made at the Public
Hearing of the above-captioned corridor, taken
before Joan M. Kenny, C. S. R., a Notary Public in
and for the County of DuPage, State of Illinois,
at the Holiday Inn, 800 South Route 31, Crystal
Lake, Illinois, on Wednesday, the 7th day of October,
A. D. 1992, during the hours of 2:00 P. M. and
8:00 P. M.

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Transcript available for review at Illinois
Department of Transportation—District 1
headquarters.

STENOGRAPHIC REPORT OF PUBLIC COMMENTS

ILLINOIS DEPARTMENT OF TRANSPORTATION
PUBLIC HEARING

STRATEGIC REGIONAL ARTERIAL
OPERATION GREENLIGHT

RE: U.S. ROUTE 14
FROM THE ILLINOIS-WISCONSIN STATE LINE
TO PALATINE ROAD

OCTOBER 14, 1992
2:00 - 8:00 P.M.

PALATINE VILLAGE HALL
200 E. WOOD STREET
PALATINE, ILLINOIS

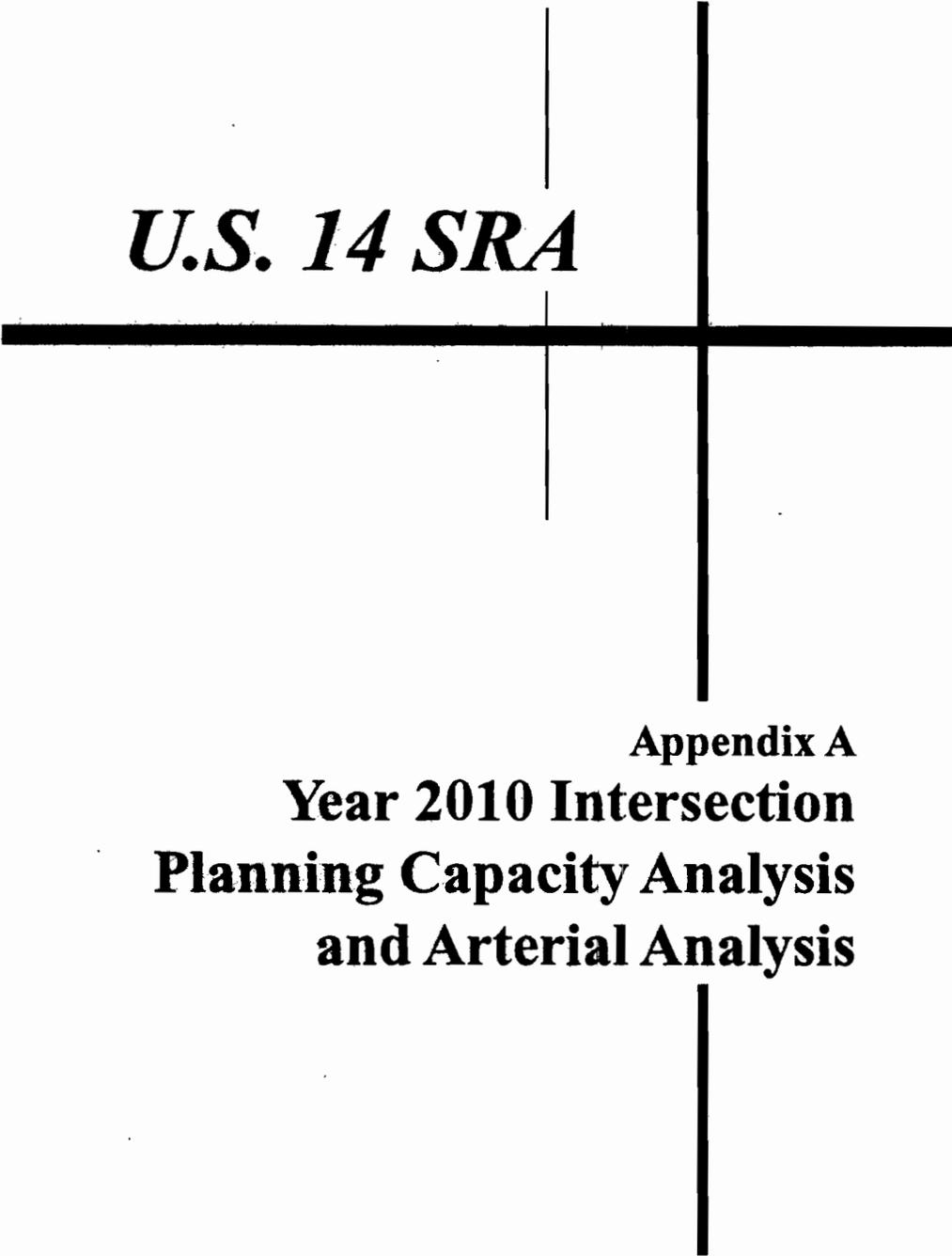


AAA COURT REPORTING

P.O. BOX 777

PROSPECT HEIGHTS, IL 60070

(708) 398-7666



U.S. 14 SRA

**Appendix A
Year 2010 Intersection
Planning Capacity Analysis
and Arterial Analysis**

TABLE A-1

U.S. 14

Year 2010 Intersection Planning Capacity Analysis

U.S. 14 AND:	U.S. 14							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
IL 120	14600	15%	60	0.99	20%	263	L-TT	0.41	20000	15%	60	0.99	100%	605	L-R	0.60	1.01
Kishwaukee Valley Rd	12100	15%	60	0.99	20%	218	L-TT-R	0.31	12000	15%	60	0.99	30%	324	L-TR	0.44	0.75
Dean St	7600	15%	60	0.99	20%	137	L-TT-R	0.20	5000	15%	60	0.99	20%	90	L-TR	0.19	0.39
IL.47	15200	15%	60	0.99	20%	274	LL-TT-R	0.22	23300	15%	60	0.99	20%	419	L-TT-R	0.40	0.63
Lake Ave	15500	15%	60	0.99	10%	140	L-TT	0.32	12000	15%	60	0.99	100%	370	L-R	0.36	0.68
Lake Shore Dr	15500	15%	60	0.99	10%	140	L-TT-R	0.29	5000	15%	60	0.99	30%	135	L-TR	0.18	0.47
Doty Road	15500	15%	60	0.99	10%	140	L-TT-R	0.29	5000	15%	60	0.99	30%	135	L-TR	0.18	0.47
Ridgefield Rd (North)	15500	15%	60	0.99	10%	140	L-TT-R	0.29	5000	15%	60	0.99	30%	135	L-TR	0.18	0.47
Lucas Road	15800	15%	60	0.99	10%	142	L-TT-R	0.29	5000	15%	60	0.99	30%	135	L-TR	0.18	0.48
Ridgefield Rd (South)	15800	15%	60	0.99	10%	142	L-TT-R	0.29	5000	15%	60	0.99	30%	135	L-TR	0.18	0.48
IL 176	24400	10%	60	0.99	10%	146	L-T-TR	0.50	12000	10%	60	0.99	10%	72	L-T-R	0.47	0.98
Woodstock Ave.	24900	10%	60	0.99	10%	149	L-T-TR	0.51	5000	10%	60	0.99	30%	90	L-TR	0.18	0.70
Crystal Lake Rd	24900	10%	60	0.99	10%	149	L-T-TR	0.46	12000	10%	60	0.99	10%	72	L-T-TR	0.25	0.71
Dole Ave	25100	10%	60	0.99	10%	151	L-T-TR	0.52	12000	10%	60	0.99	10%	72	L-TR	0.47	0.99
McHenry Ave	25100	10%	60	0.88	20%	301	L-T-TR	0.52	12000	10%	60	0.99	20%	144	L-T-TR	0.21	0.73
Devonshire Ln	37800	10%	60	0.99	10%	227	L-TT-R	0.71	5000	10%	60	0.99	30%	90	L-TR	0.18	0.89
Virginia Rd	37800	10%	60	0.99	10%	227	L-TT	0.78	12000	10%	60	0.99	100%	370	L-R	0.24	1.02
Teckler Blvd	24800	10%	60	0.99	10%	149	L-T-TR	0.46	5000	10%	60	0.99	10%	30	L-TR	0.20	0.66
Main St	24800	10%	60	0.94	10%	149	LL-TT-R	0.36	12000	10%	60	0.99	10%	72	L-TT-R	0.21	0.57
Crystal Point Mall	24800	10%	60	0.99	10%	149	L-T-TR	0.51	5000	10%	60	0.99	30%	90	L-TR	0.18	0.70

**TABLE A-1
U.S. 14**

Year 2010 Intersection Planning Capacity Analysis

U.S. 14 AND:	U.S. 14						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
East of Crystal Point Mail	34150	10%	60	0.99	10%	205	L-TT-R	0.64	5000	10%	60	0.99	30%	90	L-TR	0.18	0.82
West of Pingree	34150	10%	60	0.99	10%	205	L-TT-R	0.64	5000	10%	60	0.99	30%	90	L-TR	0.18	0.82
Pingree Rd	43900	10%	60	0.99	20%	527	L-T-TR	0.91	12000	10%	60	0.99	10%	72	L-T-R	0.38	1.29
Sands Rd	33800	10%	60	0.99	20%	406	L-T-TR	0.72	5000	10%	60	0.99	20%	60	L-TR	0.19	0.91
Three Oaks Rd	39500	10%	60	0.99	10%	237	L-TT-R	0.74	12000	10%	60	0.99	10%	72	L-TR	0.47	1.21
Cary Rd	40200	10%	60	0.88	20%	482	L-TT-R	0.75	12000	10%	60	0.99	20%	144	L-TR	0.46	1.21
Main St	40200	10%	60	0.88	10%	241	L-TT	0.88	5000	10%	60	0.99	30%	90	L-T	0.14	1.02
First St	41800	10%	60	0.88	10%	251	L-TT	0.92	5000	10%	60	0.99	100%	370	L-R	0.10	1.02
Main St	41800	10%	60	0.94	10%	251	L-TT	0.92	12000	10%	60	0.99	100%	370	L-R	0.24	1.16
Lake Julian Rd	41800	10%	60	0.99	10%	251	L-T-TR	0.86	5000	10%	60	0.99	10%	30	L-TR	0.19	1.06
Lincoln Ave	41800	10%	60	0.94	10%	251	L-T-TR	0.86	5000	10%	60	0.99	20%	60	L-TR	0.19	1.05
Algonquin Rd	55700	10%	60	0.94	10%	334	L-T-TR	1.15	5000	10%	60	0.99	30%	90	L-TR	0.19	1.34
Foxmoor Dr.	55700	10%	60	0.94	10%	334	L-T-TR	1.15	5000	10%	60	0.99	30%	90	L-TR	0.19	1.34
IL 22	55700	10%	60	0.99	20%	668	LL-TT	0.82	23900	10%	60	0.99	40%	576	LL-RR	0.29	1.11
Doyle Rd.	35000	10%	60	0.99	10%	210	L-T-T-R	0.65	5000	10%	60	0.99	100%	300	L-R	0.10	
Kelsey Rd	35000	10%	60	0.99	10%	210	L-T-T-R	0.65	5000	10%	60	0.99	30%	90	L-TR	0.18	0.84
Cuba Rd	35100	10%	60	0.99	100%	2106	L-T-T-R	0.66	12000	10%	60	0.99	30%	216	L-TR	0.44	1.10
Hart Rd	39500	10%	60	0.99	10%	237	L-TT-R	0.74	5000	10%	60	0.99	10%	30	L-TR	0.20	0.93
Western Ave/ Old Northwest	39500	10%	60	0.99	10%	237	L-TT-R	0.74	5000	10%	60	0.99	30%	90	L-TR	0.18	0.92
Cumnor Ave	39500	10%	60	0.99	10%	237	L-TT-R	0.74	5000	10%	60	0.99	30%	90	L-TR	0.18	0.92

TABLE A-1
U.S. 14
Year 2010 Intersection Planning Capacity Analysis

U.S. 14 AND:	U.S. 14							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
Bryant Ave	39500	10%	60	0.94	10%	237	L-TT-R	0.74	5000	10%	60	0.99	30%	90	L-TR	0.18	0.92
Hough St	39500	10%	60	0.94	10%	237	LL-TT-R	0.68	20000	20%	60	0.99	20%	480	L-T-R	0.59	1.27
Berry Rd	39400	10%	60	0.99	10%	236	L-T-TR	0.81	5000	10%	60	0.99	30%	90	L-TR	0.18	1.00
Main St	34200	10%	60	0.99	20%	410	L-T-TR	0.71	20000	10%	60	0.99	20%	240	L-T-TR	0.43	1.13
Eastern Ave	35100	10%	60	0.99	10%	211	L-T-T-R	0.66	5000	10%	60	0.99	20%	60	L-TR	0.19	0.85
Ela Rd	50700	10%	60	0.99	10%	304	L-TTT	0.74	20000	10%	60	0.99	30%	808	LL-R	0.27	1.01
Baldwin Rd	40900	10%	60	0.99	10%	245	L-T-T-R	0.76	12000	10%	60	0.99	30%	216	L-TR	0.35	1.12
Quentin Rd	31000	10%	60	0.99	10%	186	LL-T-T-R	0.54	33900	10%	60	0.99	20%	407	LL-T-TR	0.59	1.12
Smith St	30600	10%	60	0.99	10%	184	L-T-TR	0.63	12000	10%	60	0.99	20%	144	L-TR	0.46	1.09
Plum Grove Rd	28000	10%	60	0.99	10%	168	L-TT	0.52	12000	10%	60	0.99	100%	360	L-R	0.24	0.76
First Bank Dr	28000	10%	60	0.99	10%	168	L-T-TR	0.58	5000	10%	60	0.99	30%	90	L-T-R	0.12	0.70
Hicks Rd	36900	10%	60	0.99	10%	221	LL-T-T	0.64	20000	10%	60	0.99	100%	800	L-LR	0.40	1.04
Lincoln St	36900	10%	60	0.94	10%	221	L-T-T	0.74	5000	20%	60	0.99	10%	60	L-TR	0.19	0.93
Palatine Rd	41200	10%	60	0.94	20%	494	LL-T-TR	0.63	20100	10%	60	0.99	20%	241	L-T-T-R	0.35	0.98

**Table A-2
Suburban Arterial Level-of-Service Analysis Inputs for U.S. 14**

Intersection	Intersection Operations						Assumed Signal Operation					
	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 (Seconds)	Arrival ^f Type ^f	Progression Factor ^e	Spacing to Next Intersection	Arterial Type/Class ^h and Speed	
Illinois 176	0.98	150	1	0.10	0.40	1,280	120	IV	0.83	1,750	I-40	
Woodstock Road	0.70	150	1	0.10	0.60	1,920	120	IV	0.77	1,200	I-40	
Crystal Lake Road	0.71	150	1	0.10	0.55	1,760	120	IV	0.77	1,950	II-30	
Dole Avenue	0.95	150	1	0.10	0.40	1,280	120	IV	0.90	1,970	II-30	
McHenry Avenue	0.69	300	1	0.20	0.50	1,600	120	IV	0.77	2,000	II-30	
Devonshire Lane	0.89	230	1	0.15	0.65	2,080	120	IV	0.86	600	II-35	
Virginia Road	1.02	230	1	0.15	0.60	1,920	120	V	0.82	2,000	I-35	
Teckler Boulevard	0.66	150	1	0.10	0.60	1,920	120	V	0.57	1,010	I-35	
Main Street	0.57	150	2	0.05	0.58	1,440	120	V	0.71	1,050	I-40	
Crystal Point Mall	0.70	150	1	0.10	0.60	1,920	120	V	0.60	1,600	I-40	
East of Crystal Point Mall	0.82	200	1	0.15	0.65	2,080	120	V	0.68	1,150	I-40	
West of Pingree	0.82	200	1	0.15	0.65	2,080	120	IV	0.82	1,500	I-40	
Pingree/Terra Cotta	1.29	530	1	0.30	0.40	1,280	120	IV	1.00*	3,590	I-45	
Sands Road	0.91	410	1	0.25	0.55	1,760	120	III	1.00	6,710	I-45	
Three Oaks Road	1.21	240	1	0.15	0.45	1,440	120	III	1.00	2,900	I-45	
Cary Road	1.21	480	1	0.25	0.35	1,120	120	III	1.00	3,800	I-40	
Main Street	1.02	240	1	0.15	0.70	2,240	120	IV	0.90	500	I-40	
First Street	1.02	250	1	0.15	0.75	2,400	120	IV	0.90	1,170	II-35	
Main Street	1.16	250	1	0.15	0.65	2,080	120	IV	1.00	700	II-35	
Lake Julian Road	1.06	250	1	0.15	0.65	2,080	120	IV	1.00	4,750	II-35	
Lincoln Avenue	1.10	250	1	0.15	0.65	2,080	120	III	1.00	820	II-35	

**Table A-2
Suburban Arterial Level-of-Service Analysis Inputs for U.S. 14**

Intersection	Intersection Operations						Assumed Signal Operation					
	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 (Seconds)	Arrival ^e Type ^f	Progression Factor ^g	Spacing to Next Intersection	Arterial Type/Class ^h and Speed	
Algonquin Road	1.34	330	1	0.20	0.65	2,080	120	V	0.82	1,440	I-45	
Foxmoor Drive	1.34	330	1	0.20	0.65	2,080	120	V	0.82	1,200	I-45	
Illinois 22	1.11	670	2	0.20	0.55	1,760	120	V	0.82	1,400	I-45	
Doyle Road	1.13	330	1	0.20	0.71	2,276	120	V	0.82	4,780	I-45	
Kelsey Road	0.84	210	1	0.15	0.60	1,920	120	III	1.00	5,170	I-50	
Cuba Road	1.10	210	1	0.15	0.45	1,440	120	III	1.00	6,600	I-50	
Hart Road	0.93	240	1	0.15	0.65	2,080	120	III	1.00	1,670	I-50	
Western Ave	0.92	240	1	0.15	0.65	2,080	120	IV	0.86	1,370	I-45	
Cumnor Avenue	0.92	240	1	0.15	0.65	2,080	120	V	0.74	1,330	I-45	
Bryant Avenue	0.92	240	1	0.15	0.65	2,080	120	V	0.74	1,330	I-35	
Hough Street	1.26	240	2	0.10	0.45	1,440	120	V	0.82	2,570	I-35	
Berry Road	1.00	240	1	0.15	0.65	2,080	120	III	1.00	2,040	I-35	
Main Street	1.13	410	1	0.27	0.36	1,440	120	III	1.00	1,310	I-35	
Eastern Avenue	0.85	210	1	0.15	0.65	2,080	120	III	1.00	7,810	I-45	
Ela Road	1.01	300	1	0.20	0.55	1,760	120	III	1.00	7,290	I-45	
Baldwin Road	1.12	250	1	0.15	0.55	1,760	120	III	1.00	1,800	I-45	
Quentin Road	1.12	190	1	0.15	0.35	1,120	120	III	1.00	4,070	I-45	
Smith Street	1.09	180	1	0.10	0.45	1,440	120	III	1.00	1,360	I-40	
Plum Grove Road	0.76	170	1	0.10	0.60	1,920	120	III	1.00	2,000	II-40	
First Bank Drive	0.70	170	1	0.10	0.75	2,400	120	III	1.00	730	II-35	
Hicks Road	1.04	220	1	0.15	0.45	1,440	120	IV	0.90	1,620	II-30	

Table A-2

Suburban Arterial Level-of-Service Analysis Inputs for U.S. 14

Intersection Operations				Assumed Signal Operation							
Intersection	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 (Seconds)	Arrival ^f Type ^f	Progression Factor ^g	Spacing to Next Intersection	Arterial Type/Class ^h and Speed
Lincoln Street	0.93	220	1	0.15	0.65	2,080	120	IV	0.90	1,350	II-30
Palatine Road	0.98	500	2	0.15	0.50	1,600	120	IV	0.90		

^aFrom Intersection Planning Capacity Analysis—Table B-1

^bG/C for left turns = $\frac{LT\ Vol./LT\ Lanes}{1,500}$

^cG/C for through movement = $\frac{V/C\ for\ SRA - G/C\ (for\ left\ turns)}{V/C\ for\ Intersection}$

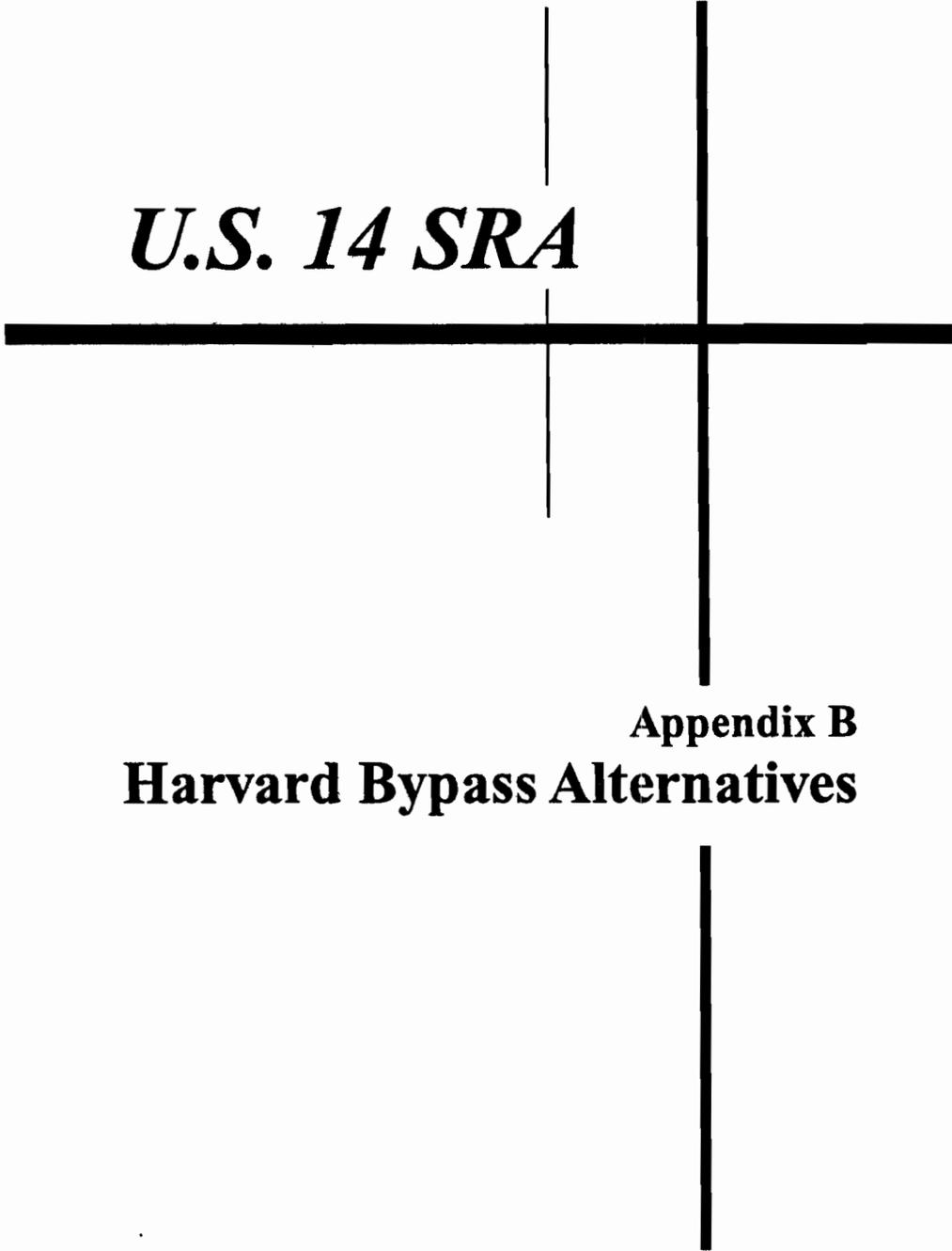
^dCapacity = 1,600 * number of through lanes * G/C (for through movement)

^eAssumption:
 2-Phase signals 60-90 seconds
 3-Phase signals 90-100 seconds
 4-Phase signals 120-150 seconds

^fAssume Type IV or Type V, depending on spacing of signals relative to SRA guidelines

^gPer *Highway Capacity Manual* Table 11-6

^hPer *Highway Capacity Manual*—Assume Types I or II for suburban SRAs



U.S. 14 SRA

Appendix B
Harvard Bypass Alternatives

Appendix B Harvard Bypass Alternatives

This appendix summarizes the recommendations of CH2M HILL regarding the selection of a preferred alignment for a bypass around the town of Harvard, Illinois, for the U.S. 14 SRA corridor.

Background

Previous presentations by CH2M HILL and discussions involving IDOT staff, and the SRA Advisory Panel, are summarized in the following documents:

- Meeting Minutes for IDOT Review, January 10, 1992
- Meeting Minutes for Advisory Panel Meeting No. 2, February 6, 1992
- Meeting Minutes for IDOT Geometric Review, May 14, 1992

It has previously been concluded that implementation of appropriate SRA cross section and geometry along existing U.S. 14 in Harvard would pose significant problems and negative impacts. The preferred plan is to identify a long-term bypass for U.S. 14 to avoid these negative right-of-way and community impacts, enabling continuity for the SRA.

Three general alternative alignments appear reasonable and worthy of investigation. Summarized on Exhibit B-1, these are identified as "Far East," "East," and "West" bypasses. A brief discussion of each alternative follows.

Far East Bypass

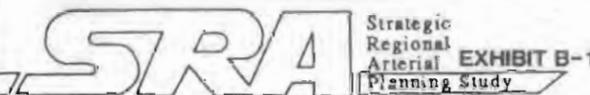
The far east bypass generally follows the Lindwall Road corridor from the south, heading north approximately 1.8 miles east of existing U.S. 14 through Harvard. It turns west slightly to rejoin the U.S. 14 corridor in the vicinity of Crowley Road.

East Bypass

The east bypass leaves the U.S. 14 alignment on the south in the vicinity of Windy Hill Road. It skirts the eastern limits of existing development in Harvard, turning slightly west to join U.S. 14 north of the town near Crowley Road.



U.S. 14 – PROPOSED BYPASS PLAN



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

Scale 0 1000 2000 feet

West Bypass

The West bypass leaves the U.S. 14 alignment on the south opposite Windy Hill Road. It proceeds due west for about 1.3 miles, then turns north, running about 0.4 mile west of Marengo Road. The alignment bends slightly west to skirt existing development, before turning back east to cross the C&NW Railroad line. It then proceeds northeast to rejoin U.S. 14 in the vicinity of Crowley Road on the north.

For the purposes of evaluation, it is assumed that all three alignments would require a standard right-of-way of 170 feet, enabling development of a four-lane, divided highway. Full access control is also assumed, whereby access would be only via intersecting crossroads.

Table B-1 presents a summary, qualitative evaluation of the three alignments. To aid in comparison of these alignments, a column is added to describe the impacts of implementing a four-lane suburban SRA along existing U.S. 14. The reader should note in reviewing Table B-1 that it is based on published, readily-available data that are used for all SRA studies. These data sources are summarized in Table B-2. Also, extensive field reviews, detailed analyses, and other steps normally taken in route location or environmental assessment/impact studies have not been performed.

Transportation Impacts

The East bypass would present the shortest, most direct alignment. A Far East bypass is 1.6 miles longer, but would also be direct. Both are more direct and shorter than a West bypass alignment. In terms of other transportation impacts, a West bypass alignment would conflict with proposed local transportation plans both west and north of Harvard.

A similar SRA bypass for Illinois 173 is a distinct possibility. Given the general alignment of Illinois 173, it is likely that such a bypass would run north of Harvard. A general assessment of the three U.S. 14 alternatives shows that all three would be compatible with a north Illinois 173 bypass. Note, however, that the west U.S. 14 alternative may result in a route overlap with an Illinois 173 bypass.

A general benefit of any of the alignments is the higher safe speed possible for SRA traffic compared to that achieved using a routing along the existing alignment.

**Table B-1
Summary Evaluation of Harvard Bypass Alternatives**

	Implement SRA on Existing Alignment	Far East Bypass	East Bypass	West Bypass
Transportation Impacts				
• Length of Alignment	4.9 miles	5.5 miles	3.9 miles	5.9 miles
• Quality of Horizontal Geometry	Fair	Direct—Mild Curve (Excellent)	Direct—Predominantly Tangent (Excellent)	Indirect—Multiple Curves (Fair)
• Compatibility with Local Transportation Plans	Yes	Yes	Yes	May conflict with planned N-S local improvements west of Harvard
• Compatibility with Possible IL 173 Bypass (North of Harvard)	Good	Good	Good	Northern 2 miles may overlap with IL 173 bypass
• Effect on Traffic Along Existing Alignment	Traffic would continue to increase	Would reduce volume on "Old" US 14	Would reduce volume on "Old" US 14	Would reduce volume on "Old" US 14
• Operating Speed	25 - 30 mph	50 mph	50 mph	50 mph
Land Development Impacts				
• Compatibility with Local Land Use Plans	No Apparent Conflicts	No Apparent Conflicts—Skirts Planned Residential Development	Penetrates Planned High Density Residential Development	Penetrates Planned commercial, Industrial and Residential Developments Northwest of Harvard
• Effects on Existing Residential Properties	Continuous Impacts and/or Disruptions	Minor Impacts Along Lindwall Road and East of Town	Skirts Existing Neighborhoods on East Side of Harvard	Minor impacts
• Effects on Existing Commercial Properties	Minor Impacts	No Apparent Impacts	Impacts Commercial Development at IL 173/US 14 Intersection	Minor impacts
• Farmland/Agricultural Effects	None	Continuous Displacement of Designated Agricultural/Rural Land	Minor Displacement of Designated Agricultural/Rural Land (north of town)	Some Displacement of Designated Agricultural/Rural Land—Impacts on Corporate Farm

**Table B-1
Summary Evaluation of Harvard Bypass Alternatives**

	Implement SRA on Existing Alignment	Far East Bypass	East Bypass	West Bypass
Environmental Effects				
• Conflicts With Known Wetlands	None	Greatest of 3 Alternatives—Alignment would require adjustment to minimize and avoid impacts	Some Minor Impacts Apparent	Some Minor Impacts Apparent
• Number of River/Stream Crossings	No additional crossings	Rush Creek and Mokeler Creek Crossings	Rush Creek and Mokeler Creek Crossings	Rush Creek Mokeler Creek, Lawrence Creek Crossings
• Impacts on Sensitive Land Uses (Churches, Schools, Hospitals, etc.)	Widening near 3 churches, 3 schools	No Apparent Impacts	No Apparent Impacts	Conflicts with Sanitary Treatment Plant; Bisects Site of Potential School
• Historic/Archaeological Impacts	4 Historic Sites	No Known Impacts	No known Impacts	No Known Impacts
• Parkland, Forest Preserve Impacts	No known Impacts	No Known Impacts	Bisects McHenry County Conservation Land	No Known Impacts
• Noise Considerations	Serious Impacts on residential neighborhood	No Known Sensitive Receptors	Possible Impacts on Existing Residences to East	Possible Minor Impacts on Residences
• Air Quality Considerations	Impacts through Harvard	Positive Impacts Expected	Positive Impacts Expected	Positive Impacts Expected
Community Acceptance				
To be completed following public hearing				
Costs of Implementation				
• Construction Costs	Moderate	Moderate	Lowest of Bypasses	Highest of Bypasses
• Right-of-Way Costs	Probably Lowest	Probably Lowest	Moderate	Probably Highest

Table B-2
Sources of Environmental and Land Use Data
U.S. 14 Corridor

Item	Data Source	Comment
Parkland and Other Open Space	<ul style="list-style-type: none"> • United States Department of the Interior, National Park Service, listing of LAWCON Projects • Northeastern Illinois Planning Commission, Bikeways, 1985 • Illinois Natural Areas Inventory • Visual Survey 7/91 • Illinois Nature Preserves System 1987-1988 Report, Illinois Nature Preserves Commission • McHenry County Conservation District • Lake County Forest Preserve • Forest Preserve District of Cook County 	<p>LAWCON-Land and Water Conservation Fund</p> <p>Illinois Dept. of Transportation Files</p> <p>Updated 12/90 list also used</p>
Wetland	<ul style="list-style-type: none"> • National Wetlands Inventory Map, United States Department of the Interior, Fish and Wildlife Service 	
Floodplains	<ul style="list-style-type: none"> • FIRM, Flood Insurance Rate Map, Federal Emergency Management Agency • Floodway, Flood Boundary and Floodway Map, United States Department of Housing and Urban Development 	
Hazardous Materials	<ul style="list-style-type: none"> • U.S. EPA Superfund Program, CERCLIS listing, 5/8/91 • Leaking Underground Storage Tank Listing, 12/88 	<p>CERCLIS—Comprehensive Environmental Response Compensation and Liability Act Information System</p> <p>Illinois Department of Transportation, Environmental Division Files</p>
Historic Sites	<ul style="list-style-type: none"> • The National Register of Historic Places, 1990 • Illinois State Historical Markers Text Book, 1973 • Inventory of Historic Structure, 1973 • Inventory of Historic Landmarks, 1973 	<p>Prepared by the Illinois Historic Structures Survey</p>
Existing and Future Land Use	<ul style="list-style-type: none"> • Visual Survey, 7/91 	

Land Development Impacts

Community residents and business owners typically believe that bypasses can have both positive and negative impacts. Business owners along the existing alignment may oppose the loss of any traffic by their businesses. Their residential neighbors, conversely, may be in favor of reducing traffic and its accompanying effects (noise, pollution, accident potential) from their neighborhoods. In terms of bypass locations, alignments far from the center of town may be negatively perceived, while those too close to one edge of town may serve (or be perceived as serving) as a physical barrier to the direction of growth.

From the perspective of planned land development and growth, a bypass through a proposed, developing area may be positively viewed by local residents and officials because it may stimulate development. In terms of the SRA function, however, which is to serve long distance, through traffic (and not to provide local access), there is a clear conflict between a route bypass and planned development. The bypass should have full access control, and as such, should probably not be planned around future development.

For the U.S. 14 Harvard bypass, knowledge of land use planning indicates that commercial and industrial growth is planned for the west side of Harvard. (Data sources include the current *McHenry County Land Use Plan: Year 2005 Update*, as well as conversations with town of Harvard professional staff.) Future development to the east is expected to be primarily residential in character. It is considered desirable for the U.S. 14 SRA bypass to be located such that future access pressures are avoided or minimized. Either of the east alignments thus appear favored over a west bypass.

Environmental Impacts

The east bypasses appear to present the greatest challenges in terms of environmental impacts. Wetland conflicts appear greatest for the Far East bypass alignment. The East bypass conflicts with McHenry County conservation lands, and appears to affect the greatest amount of agricultural land.

Of course, improvement to the existing alignment would also present serious environmental problems. These include the visual, noise, and air quality impacts on

residential properties from Illinois 173 north; similar impacts on three churches, three schools and a retirement home; and potential right-of-way conflicts with four historic sites. Also, removal of continuous rows of mature trees along the existing corridor would be necessary should SRA implementation occur.

Community Acceptance

The concept of a bypass was presented at the second panel meeting, along with two basic options—east and west. The mayor of Harvard indicated a favorable impression of the concept of a bypass, and expressed a mild preference for an east alignment. Since that time, the third panel meetings as well as Public Hearings were held. In general, comments from the public regarding the bypass options were favorable.

Costs of Implementation

Due to its shorter length, an east bypass would probably cost the least. A west bypass is the longest, and involves one creek crossing more than the two eastern alternatives. Also, intersection construction requirements would probably be greatest on the west side, and one more crossing of a rail line (desirably grade separated) would be required compared to the east alignments.

In general, it appears that right-of-way may be least costly for either east alignment. The east alternative travels predominantly through rural land; the western bypass involves commercial and industrial lands that may cost more per acre to acquire. Moreover, the total acreage of required right-of-way is greatest for the west alignment, given its greater length.

Recommendations

Actual selection and definition of a route must involve detailed environmental and engineering studies that are far beyond the scope of this SRA study. CH2M HILL cannot state, with certainty, that any of the alignments are not flawed fatally by unusual or unique features that are not apparent from our general overview, or are not recorded in existing databases made available to us for these SRA studies.