BRIDGE CORRIDOR STUDY at THE FOX RIVER
Kane County Division of Transportation
FINAL REPORT

Within the Village of Carpentersville, IL
Kane County
October 2004

TENG
205 North Michigan Avenue
Chicago, Illinois 60601

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EXHIBITS

APPENDICES

1.0 EXECUTIVE SUMMARY

The Kane County Division of Transportation selected Teng & Associates to complete a Bridge Corridor Study for a Fox River crossing within the Village of Carpentersville Corporate limits. The Study was initiated in an effort to identify and study potentially viable bridge crossing locations to supplement the proposed Longmeadow Parkway Corridor and alleviate current and projected traffic congestion due to the lack of existing area bridge crossings.

Based on the Scope of Work for this Project, Teng coordinated closely with Kane County to identify two potentially viable Corridor routes with limited constraints to serve as the basis of Study. The two Corridors were identified as the Lincoln/Williams Corridor and the Miller Road Corridor. From each of these two Corridors, two specific Alternatives were generated yielding a total of four Alternatives investigated. Exhibit 6 at the end of this report identifies all four Alternative alignments superimposed on an aerial photo of the Study area.

A conceptual level cost estimate was developed for each of the four Alternatives yielding total project costs ranging from $22.9 Million to $33.6 Million. Detailed breakdowns of these estimates are included later in this report in Section 8.0.

2.0 PURPOSE

The purpose of this Study is to investigate local Bridge Corridor Alternatives in the Carpentersville portion of Kane County, and to assist in identifying a possible Preferred Alternative with the review of the Village of Carpentersville. Refer to Appendix A at the end of this report to view the Meeting Minutes summarizing a project meeting held represented by Kane County, the Village of Carpentersville and Teng & Associates.

It is important to note that this Study is not intended to develop Bridge Corridors to replace those already investigated such as the Longmeadow Parkway Corridor, but rather to serve as a supplemental option for future consideration.

3.0 INTRODUCTION

At the request of Kane County, Teng & Associates was requested to perform a Concept level Bridge Corridor Study for a crossing of the Fox River, specifically in the Carpentersville area of the County. The goal of the Study was to arrive at two separate Corridors, and to further develop two distinct Alternatives for each of these Corridors to result in four total Alternatives.

The Study area focuses in the region north of the existing Main Street Bridge and south of the proposed Longmeadow Parkway Corridor. Refer to Exhibit 1 attached to this report to view a Project Location Map. Under current traffic conditions, it is estimated that the Main Street Bridge experiences volumes as high as 25,000 Average Daily Traffic (ADT). A two lane facility of this nature can reasonably accommodate traffic volumes slightly under 20,000 ADT. It stands to reason that this facility is substantially over capacity. In fact this bridge operates at a Level of Service F under current traffic volumes, enforcing the fact that the need for additional local bridge crossings is an impending, if not immediate need for the Carpentersville area.

Based on coordination with the Kane County Division of Transportation, several possible corridor combinations were suggested. After evaluating these proposed corridor options, the County concurred that the two most logical corridors in the Study area were the following.

The southernmost Corridor would begin west of the Fox River near Lincoln Avenue and extend east over the Fox River, finally connecting with Williams Avenue. The northernmost Corridor would begin at the intersection of Miller Road and Route 31 and extend east, traversing nearly a mile of farmland before bridging the Fox River and connecting to Williams Avenue located just east of the river.

Once the two Corridors were established, several alignments were investigated both on paper and in the field. These were presented to the County and again, concurrence was established for the two most viable alternatives for each Corridor. Criteria used to select these alternatives included but were not limited to, neighborhood impact, environmental considerations, local traffic circulation, and traffic safety issues.

Additionally, the intent was to develop alternatives for each Corridor that although were similar, offered distinctly different features to set them apart. Each of the four Alternatives studied are presented in greater detail in Section 5.0 of this report.

4.0 EXISTING CONDITIONS

4.1 EXISTING ADJACENT ROADWAY CORRIDORS

In the study area, there are two major north-south thoroughfares, Illinois Route 31 and Illinois Route 25. They are located on either side of the Fox River with Route 31 on the west and Route 25 on the east. These routes are under the jurisdiction of the Illinois Department of Transportation which is responsible for maintenance of these roadways. Both routes are functionally classified as minor arterials. Although all of the corridor alternatives investigated in this report will connect directly with Route 31 west of the river, all of the proposed connection points east of the river are with Williams Avenue which runs north-south and is situated between Route 25 and the Fox River.

Illinois Route 31 runs in the north-south direction along the west side of the Fox River in the project area. It generally provides two lanes, one lane in each direction. In some sections, four lanes exist with curb and gutter on each side.

Illinois Route 31, within the study area, primarily lies on a gently rolling terrain with a profile grade that generally follows the immediate topography. The horizontal alignment consists of a combination of tangent sections and several curves.

Illinois Route 31 provides two lanes comprised of typically one 11-foot lane in each direction with a gravel shoulder of varying width. A ditch and swale drainage system is provided throughout the study area. No Parking signs are posted along Illinois Route 31 within the study area since there are no available areas for long term parking on either side of Illinois Route 31.

Miller Road runs in an east-west direction between Huntley Road near its Randall Road intersection and Illinois Route 31. This roadway is a two lane facility with a rolling profile including a substantial downward longitudinal grade as it approaches Route 31 where Miller and Route 31 form a T-intersection. At the T-intersection, Miller Road terminates and Route 31 is the through leg. The proposed Miller Corridor Alternatives as presented in this Study will extend east from this intersection, thereby creating a four way intersection.

Lincoln Avenue runs in a north-south direction and curves to the northwest to connect to Illinois Route 31 in the vicinity of the study. This roadway is a local collector street for the residential area lying between Route 31 and the Fox River. Lincoln intersects Route 31 at a highly undesirable angle, which would be addressed by one of the proposed Alternatives.

Williams Avenue runs in a northeast-southwest direction and connects with Lake Marion Road to the northeast and curves to the west before connecting with North Wisconsin Avenue to the southwest. This roadway is also a two lane facility and appears to be the main north-south route in the Study area between the Fox River and Route 25. Barring physical and environmental constraints, this roadway generally follows the east bank of the Fox River.

4.2 LAND USE

Residential development in proximity to the proposed Miller Road Corridor and the Lincoln/Williams Corridor is primarily single-family detached residential. Along Miller Road, residential development primarily occupies larger lots. Where Miller Road intersects Route 31, large tracts of agricultural land exist between Route 31 and Forest Preserve areas occupying the western fringes of the Fox River. East of the river where the Miller Road alignments would potentially tie into Williams Avenue, Forest Preserve land is nestled between the river and Williams Avenue. Single-family detached homes exist along the east edge of Williams.

The area in the vicinity of the proposed Lincoln/Williams Corridor consists of single-family detached residential. This area is urban in character with denser development than is associated with the Miller Corridor.

In the vicinity of the proposed alignments, there are three areas owned by the Kane County Forest Preserve. These include Fox River Shores, Raceway Woods, and Lincolnwood Manor. Exhibit 2A attached to this report shows areas of interest in terms of Nature Preserves, trails, and the Carpentersville Dam with respect to the proposed Alternative alignments.

4.3 EMERGENCY SERVICES

The Village of Carpentersville maintains a municipal police department. Unincorporated portions of Kane County are serviced by the Kane County Sheriff's Department. All departments provide backup assistance when needed.

Both the Miller Corridor and Lincoln/Williams Corridor are served by the Village of Carpentersville Fire Department. Three stations currently serve Carpentersville. Ambulance service is provided from the Spring Street, Sleepy Hollow Road and Lake Marion Road stations.

4.4 HISTORIC SITES

The presence of Historic Sites was investigated through direct coordination with the Kane County Development Department and on-line via the National Register Information System. Both efforts yielded no presence of Historic Sites lying within close proximity to any of the four Alternatives proposed in this report.

4.5 WETLANDS

All four Alternatives developed in this Study pose an impact to area wetlands. Any bridge crossing in this region must traverse wetlands fringing on the Fox River, therefore minimal impacts are unavoidable. Any selected Corridor Route would be required to provide either on-site wetland mitigation, or mitigation by means of wetland banking.

Investigation of Kane County's February 2004 Draft ADID by NIPC yielded several wetlands of varying quality value throughout the Study area. Below is a summary of the wetlands in the immediate vicinity of the Corridors investigated in this Study. Exhibit 2B at the end of this report includes a color map which displays various wetland types which encompasses the project area and beyond. It should be noted that this map, extracted from the February 2004 ADID is a Draft, meaning modifications to this mapping are possible.

The information below was obtained from the February 2004 Draft ADID by NIPC. Exhibit 2B displays related Mapping of these wetland areas.

<u>WETLAND 658 – HIGH HABITAT VALUE</u>

This wetland is a sedge meadow with Carex stricta, and Solidago gigantea as dominant species. There is a lot of shrub invasion. Management concerns include purple loosestrife (Lythrum salicaria) in one area and lots of buckthorn (Rhamnus cathartica). This wetland was rated with a grade of "C."

<u>WETLANDS 692, 695, 707, & 669 – HIGH FUNCTIONAL VALUE</u>

These wetlands all qualified for high functional value for their ability to trap or retain inorganic sediments and/or chemical substances toxic to aquatic life.

The value of an individual wetland in performing sediment/toxicant retention is related to its size and other physical characteristics as well as the presence of potential contaminant sources upstream.

OTHER WETLANDS

The other wetlands in these map sections were not identified as either high functional value or high habitat value in the ADID study.

OVERVIEW OF QUALITY DESIGNATIONS

1) HIGH HABITAT QUALITY WETALNDS & STREAMS:

Wetlands and streams were identified as having high quality wildlife habitat, high floristic quality, or high quality aquatic habitat. These high quality habitat sites are considered “irreplaceable” and unmitigatable based on the fact that the complex biological systems and functions that these sites support cannot be successfully recreated within a reasonable time frame using existing mitigation methods.

2) HIGH FUNCTIONAL VALUE WETLANDS:

These are wetlands that were identified as providing very important water quality and stormwater storage benefits to Kane County. In evaluating water quality/stormwater storage functions, an intermediate category of wetlands was identified. These are wetlands whose functions were evaluated and which met certain basic criteria of “significant functional value” but which did not qualify for the "high functional value" rating at the time of evaluation. Their functions are recorded in the ADID database and should be considered for watershed planning and mitigation decisions.

Viewing West across the Fox River – High Habitat Value Wetlands. In the Vicinity of the Miller Road Corridor Alternatives C & D.

3) OTHER WETLANDS & STREAMS:
This includes all wetlands not placed into one of the two categories above. These wetlands generally were smaller wetlands that were not thoroughly evaluated due to project resource constraints; or they were wetlands that were evaluated but did not meet the criteria for high habitat quality or high functional value. It is important to note that certain wetlands that were not evaluated because of their small size may perform very important functions. This category also includes streams for which no quality information existed at the time of the study and streams which could not be evaluated because no methodology for their evaluation existed at the time of this study. This latter group includes all headwater streams.

4.6 FLOODPLAIN LIMITS

There should be no surprise that a substantial watercourse such as the Fox River presents floodplain issues to confront. The available FEMA flood mapping was obtained for the Study area and used to approximate abutment locations and low chord bridge elevations so as not violate minimum freeboard requirements or create backwater.

Exhibit 3 attached to this report identifies the FEMA defined limits in the Study area for both the 100-yr and 500-yr flood boundaries. Since the Base flood (100-yr) elevations are displayed on the FEMA mapping, the low chord bridge elevations were selected to maintain a minimum of three feet of freeboard between the low chord and 100-yr water surface elevations at the proposed bridge crossing locations.

4.7 AREA UTILITIES

Coordination initiated with the Illinois Department of Transportation resulted in the following list of Utility Companies which most likely own utility facilities along the existing roadway corridors lying within the selected Corridor Study areas.

- Commonwealth Edison
- SBC
- Nicor Gas
- ComCast Cable Communications

Notification letters were drafted and sent to these Utility Companies to both inform them of this Study and to request information and mapping that may be in conflict with any of the proposed Corridor Alternatives. A location map was developed and attached to each of the letters for referencing purposes on the part of the individual Utility Companies. Draft copies of the Utility Company letters prepared, as well as available responses to these inquiries can be found in Appendix B of this report.

5.0 PROPOSED ALIGNMENT ALTERNATIVES

5.1 DESIGN CRITERIA

The Design Criteria below was used to develop the bridge corridor geometrics.

DESIGN CRITERIA

Design Speed	30 mph
Design Vehicle	WB-50
Cross Section Elements:	
Lane Width	12 ft. 12 ft. on structure
Pavement Cross Slope	2.0%
Curb and Gutter	B6.24
Shoulder Width (on Structure)	4 ft. Paved
Shoulder Cross Slope	4%
Bikeway / Sidewalk Width	Not yet Determined
Bikeway / Sidewalk Cross Slope	N/A
Earth Slopes:	
Cut	3:1
Fill	3:1
Clearances:	
Horizontal – Bikeway	10’ Paved width
Geometric Requirements:	
Stopping Sight Distance	325 ft. desirable 275 ft. minimum
Horizontal Alignment	
Minimum Radius	509 ft.
Minimum Length of Curve	200 ft.
Maximum Curvature for Normal Crown Section	5,550 ft. radius
Superelevation	

Maximum Rate	6% desirable
Minimum Tangent Between Curves	167.5 ft.
Transition Run-Off Length	125 ft.
Vertical Alignment	
Maximum Grade	4% desirable 8% maximum
Minimum Grade	0.35%
Minimum Length of Curve – Sag	L=KA, K=60 minimum 70 desirable
Minimum Length of Curve – Crest	L=KA, K=60 minimum K = 80 desirable
Drainage:	
Release Rate (2-yr, 24-hr event)	0.04 cfs/acre maximum
Release Rate (100-yr, 24-hr event)	0.15 cfs/acre maximum
Minor Drainage System	10-yr event
Major Drainage System	100-yr event
Detention Storage	100-yr, 24-hr event
Slope – Mainline Pipes / Laterals	3-10 fps must be maintained
Slope – Ditches	0.30% minimum

5.2 LINCOLN / WILLIAMS CORRIDOR – ALTERNATIVE A

This Alternative proposes bridging the Fox River with a Route beginning at Williams Avenue east of the river and running west directly to Lincoln creating a T-intersection with the new bridge corridor and Lincoln. This Alternative also proposes a realignment of Lincoln beginning in the vicinity of the new intersection and running to the Lincoln intersection with Route 31. Currently, the Lincoln-Route 31 intersection possesses an extreme skew angle which creates undesirable conditions such as difficult sight distance conditions.

The realignment of the portion of Lincoln between the proposed T-intersection and Route 31 allows Lincoln to intersect Route 31 at a more desirable approach angle slightly less than ninety degrees thereby dramatically improving the conditions at this intersection. The Lincoln realignment would not require the purchase of private residential property, but would require the partial acquisition

of an existing local Park. The horizontal and vertical alignments for Alternative A are attached to this report as Exhibits 4A-1 (Plan) and 4A-2 (Profile).

5.3 LINCOLN / WILLIAMS CORRIDOR – ALTERNATIVE B

Alternative B proposes a bridge which would initially follow the same alignment as Alternative A, however this bridge profile would be constructed at a much higher elevation and connect directly to Route 31 by means of a T-intersection. This Alternative does not involve any improvements to Lincoln since the proposed bridge would cross well above Lincoln. The existing Lincoln alignment would remain unaltered, including the undesirable skew connection.

As opposed to Alternative A, this bridge alignment proposes a direct connection to Route 31 with the trade-off being a bridge constructed at a higher profile and thus a higher construction cost. The estimated construction cost for this Alternative, as well as the others is presented in Section 8.0 of this report. The horizontal and vertical alignments for Alternative B are attached to this report as Exhibits 4B-1 (Plan) and 4B-2 (Profile).

5.4 MILLER CORRIDOR – ALTERNATIVE C

The Miller Road Corridors are north of the Lincoln/Williams Corridors. Besides this difference in latitude, the Miller Road Corridors are approximately four times longer than the Lincoln Corridors since a large portion of agricultural property separates the Miller Road – Route 31 intersection and the Fox River. Specifically, the Miller Corridors C and D measure 7773 feet and 7408 feet respectively, whereas the Lincoln Corridors A and B measure 1322 feet and 1890 feet respectively

Alternative C, the first Miller Road Corridor Alternative begins at the intersection of Route 31 and Miller Road and extends east through an existing farm field before bridging the Fox River and connecting into a four leg intersection at Kings Road.

Just east of the Fox River at Williams where the bridge would terminate, total reconstruction of the existing Kings Road – Williams Avenue intersection would be required since the approach alignment to this location must be shifted north of the existing Kings Road alignment. This is due to the existence of a small Village of Carpentersville wastewater treatment facility situated immediately west of Williams. The forced shift north also requires Williams to be raised approximately three feet in order to prevent the transition leg from the new

intersection to Kings Road from exceeding the maximum desirable longitudinal slope. Because of the increase in elevation required at the new intersection, both the north and south legs of Williams will have to be reconstructed for several hundred feet necessary to re-establish the longitudinal profile in these areas. . The horizontal and vertical alignments for Alternative C are attached to this report as Exhibits 4C-1 (Plan) and 4C-2 (Profile).

5.5 MILLER CORRIDOR – ALTERNATIVE D

This Alternative also begins at the intersection of Route 31 and Miller Road. The roadway alignment follows a similar path as Alternate C, but diverges slightly north to cross the Fox River and finally connect directly to Williams Avenue east of the River. The connection at Williams forms a T-intersection approximately 0.20 miles north of Kings Road.

The intersection point at Williams for this Alternative offers relatively flat terrain with excellent sight distances both north and south on Williams from the proposed bridge termination. Alternative D also includes the shortest required bridge length at approximately 900 feet, as compared to the longest bridge length owned by Alternative B at nearly 1700 feet in length. Although Alternative D proposes a T-intersection versus the four way intersection proposed by Alternative C, there are less physical constraints to confront. Refer to Exhibits 4D-1 (Plan) and 4D-2 (Profile) attached to this report to view the proposed horizontal and vertical alignments for Alternative D.

6.0 SUGGESTED BRIDGE TYPES

6.1 OVERVIEW

The approach adopted in this Study for selecting a bridge type was to choose an industry standard construction type which would suit the site conditions offered by all four Alternatives. Based on this common bridge type, a benchmark unit cost can be established and applied to the specific bridge lengths for each Alternative, with the exception of the Lincoln Corridor, Alternative B. Because of the much higher profile needed for this crossing, a premium will be established above and beyond the benchmark unit cost for the other three Alternatives.

Because Alternative B does present such a high profile relative to the other alternatives, a second bridge type was investigated which provides a more suitable profile. Both bridge types investigated are described below and represented in drawings attached to this report and labeled as Exhibits 5A and 5B.

6.2 BRIDGE TYPE 1

All of the alignments result in relatively long and narrow bridges. Another characteristic of the alignments is that, with the exception of Alternative B for the Lincoln Corridor, all of the alignments are fairly low to the water. Given these characteristics, it is appropriate to consider conventional bridge type structures utilizing precast-prestressed concrete beams (PPC) or steel girders. Consideration should be given in determining a structure depth that provides for some nominal clearance under the bridge at normal water levels.

In general, Bridge Type 1 considered for these alignments is comprised of typical 100 foot spans using seven lines of 54 inch deep, PPC beams with a 7-1/2" reinforced concrete deck. The PPC beams are assumed to act continuously to support live loads. This superstructure would be supported on wall piers to protect the substructure from flowing debris. The exact subsurface condition at the various alignments is unknown. It is possible that bedrock may be close to the mud-line. However without sufficient geotechnical information, it has been assumed that the piers would be founded on either driven piles or drilled shaft caissons of some nominal depth.

Bridge Type 1 could be an appropriate solution for any one of the four alignments considered. Continuous rolled steel beams or built-up plate girders could be substituted for PPC beams depending on relative costs at time of construction. Similarly, once the subsurface conditions have been identified, a parametric study could be conducted to ascertain the optimum span length based on the relative costs of the superstructure and substructure. Regardless, for the

alignments with the lower profiles, i.e. Alternatives A, C and D, a probable cost for a conventional bridge of this type would be on the order of $105/sq. ft. A similar type bridge for Alternatives B, which features a much higher alignment, might be $130/sq. ft. The increase in cost for Alternative B relates to the increased substructure costs. Either way, these values can serve as a benchmark for comparison in evaluating the costs of different bridge types that might place more emphasis on aesthetics.

6.3 BRIDGE TYPE 2

As a basis of comparison, a second concept, Bridge Type 2, has been considered for the alignment at Lincoln/Williams Corridor – Alternative B. Given the higher profile of this structure, an appropriate structure for this alignment might consider longer spans in order to reduce substructure costs. This might be possible in some regards since the increased height of the piers will allow for a deeper superstructure.

One alternate bridge type considered in this study provides for a more dramatic appearance, while at the same time still utilizing some conventional “off the shelf” type components to provide a somewhat economical approach to a signature structure. The bridge type presented is comprised of a series of medium span precast concrete arch ribs that in turn support a superstructure of six lines of conventional 54-inch deep PPC beams that are post-tensioned together for continuity. The superstructure also incorporates a conventional cast-in-place concrete deck.

Similar to Bridge Type 1, some assumptions have been made in the subsurface conditions in order to establish the foundation type for the short vertical piers that in-turn support the arches. A probable cost for the arch bridge presented here might be on the order of $163/sq. ft. When compared to the cost of a conventional bridge of the same height as noted above ($130/sq. ft.), this results in approximately a 25% premium for this type of structure.

6.4 BRIDGE TYPE SUMMARY

Other structure types could be considered as well for any of the Corridor Alternatives. Variable depth, spliced PPC beams, or spandrel arch structures could be considered as well as post-tensioned flat plate or segmental construction. It is likely that structure types such as this would also result in approximately a 25% cost premium over a conventional structure. Although the

low profile of Alternatives A, C and D do not lend themselves to deeper girders, aesthetically pleasing solutions could also be provided with deck through structures possessing longer spans, such as arches, trusses and cable stays. These types of structures will likely result in even higher cost premiums, however in some cases the overall cost of a longer-span structure may be tempered by limiting the number of long spans and providing less expensive approaches with shorter spans. Typical bridge cross sections for both types investigated are represented by drawings in Exhibits 5C and 5D attached to this report.

7.0 TRAFFIC ANALYSIS & PROJECTIONS

7.1 OVERVIEW & ASSUMPTIONS

The introduction of any local bridge corridor within the Village of Carpentersville will alter the traffic flow at existing intersections along both the east and west sides of the Fox River. As part of this Study, critical intersections were identified for each corridor that would most likely experience significant changes in traffic flow.

As a starting point in this analysis, 2030 ADT projections recently developed by the Consulting firm CH2M Hill were used to identify future traffic volumes for roadway segments viewed as lying directly within the proposed bridge corridor routes or on the fringe of these corridors. The Technical Memorandum prepared by CH2M Hill which summarizes their findings is attached as Appendix C to this report. The approach adopted by this ADT analysis examined the following three scenarios.

1.) Longmeadow Parkway in place – No other Bridge Crossings.
2.) Lincoln/Williams Bridge Corridor – No other Bridge Crossings.
3.) Miller Bridge Corridor – No other Bridge Crossings.

Teng & Associates applied the generated 2030 ADT projections in a traffic analysis intersection study using the Highway Capacity Software (HCS). The goal of the analysis was to develop Year 2030 Peak Hour Volumes, and to determine 2030 lane configuration requirements for the studied intersections considered to lie within the affected corridors.

The following assumptions were employed in the development of the traffic analysis:

TRAFFIC MODELING ASSUMPTIONS

- The Lincoln/Williams and Miller Road Corridor Models were prepared as independent corridors and modeled with a reasonable two lane bridge capacity cap of 20,000 vehicles per day. The existing bridge corridors and the Longmeadow Parkway Bridge Corridor are anticipated to carry the additional projected traffic growth for the area.
- Year 2030 Design Hourly Volumes DHV's were approximated by assuming 10% of the projected ADT's.
- A minimum of 5% trucks were used for non-State routes and 10% trucks were used for State Routes.
- The traffic analysis for each affected intersection targeted a Level of Service (LOS) "C" or better.

- The intersection models were designed to “balance” the traffic flow.
- A 50/50 directional split was assumed.

7.2 TRAFFIC ANALYSIS FINDINGS – LINCOLN / WILLIAMS CORRIDOR

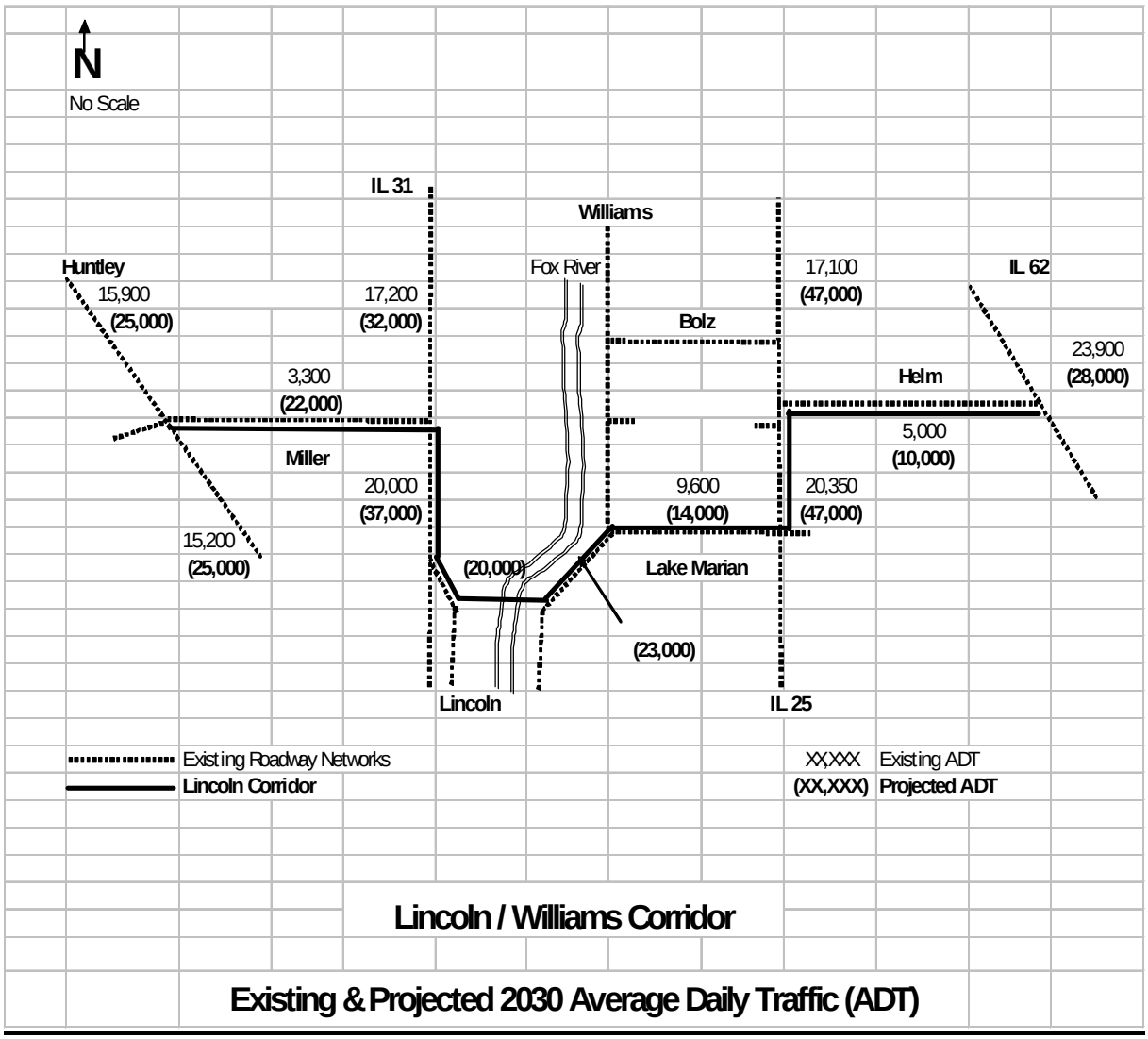
Nine nodes (intersections) were selected to represent those intersections considered to potentially experience significant traffic flow changes both in nature of movements and volume. These particular intersections were determined in a working session involving Teng, CH2M Hill, and the Kane County Division of Transportation.

The network of selected roadways for this Corridor begins in the West at the intersection of Huntley and Miller. The area of interest terminates in the east at the intersection of Helm and IL 62.

Intersection of Lincoln and IL 31.
Looking North along IL 31.

Specific roadways within the Lincoln/Williams Corridor include Miller, Lincoln, Williams, Lake Marian, IL 25, and Helm. Nodes were developed in the modeling to represent key intersections along these roadways. The entire Traffic Analysis package for the Lincoln/Williams Corridor is labeled as Exhibit 7A at the end of

this report. The diagram below summarizes the regional results of the Lincoln/Williams Corridor analysis in terms of approximate existing, and year 2030 projected traffic volumes.



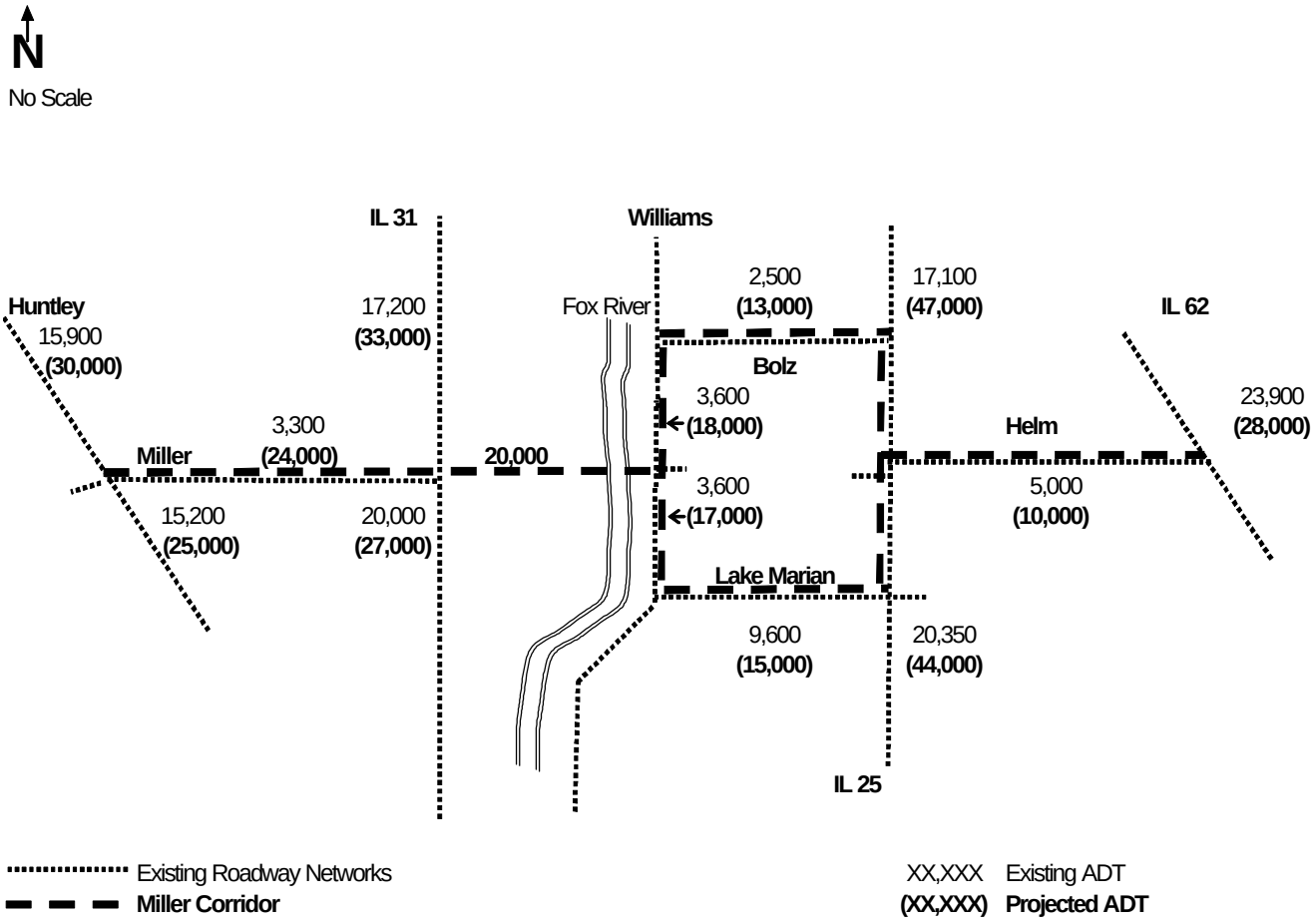
7.3 TRAFFIC ANALYSIS FINDINGS – MILLER CORRIDOR

The study for the Miller Corridor resulted in the selection of ten nodes to analyze. The same working session described in 7.2 above developed the area of interest and identified those intersections likely to be affected by the implementation of a Miller Road Bridge Corridor.

The network of selected roadways for this Corridor has essentially the same East-West limits as defined by the Lincoln/Williams Corridor which are the Miller/Huntley intersection in the West and the Helm/IL 62 intersection in the East.

Intersection of Miller and IL 31.
Looking East on Miller toward the Fox River.

Roadways lying within the regional Corridor created by the proposed Miller Road Bridge Alternatives include Miller, Williams, Boltz, Lake Marian, Helm and IL 62. The Traffic Analysis package for the Miller Corridor is labeled as Exhibit 7B at the end of this report. The diagram on the following page summarizes the regional results of the Miller Corridor analysis in terms of approximate existing, and year 2030 projected traffic volumes.



Miller Corridor

Existing & Projected 2030 Average Daily Traffic (ADT)

8.0 COST ESTIMATES

8.1 LINCOLN / WILLIAMS CORRIDOR – ALTERNATE A

Summary Description:
This Alternative proposes bridging the Fox River with a Route beginning at Williams Street east of the river and running west directly to Lincoln creating a T-intersection with the new bridge corridor and Lincoln. This Alternative also proposes a realignment of Lincoln beginning in the vicinity of the new intersection and running to the Lincoln intersection with Route 31.

Alternative A - Lincoln Corridor - Includes Lincoln Realignment:				
Item Description	**Unit**	**Quantity**	**Unit Cost**	**Total**
N.P.D.E.S. Permitting, Including SWPPP	Lump Sum	1	$25,000.00	$25,000
Army Corps 404 Permitting	Lump Sum	1	$125,000.00	$125,000
Community Relations - Public Meetings	Allowance	1	$40,000.00	$40,000
Engineer's Field Office	Lump Sum	1	$30,000.00	$30,000
Roadway Excavation	CY	2,500	$12.00	$30,000
Borrow for Fill Construction	CY	106,800	$14.00	$1,495,200
Ditch Construction	LF	3,040	$11.00	$33,440
New Asphalt Concrete Pavement , 4" AC over 10" Agg. Base	SQ YD	1,503	$22.00	$33,066
Lincoln Realignment Related , 3" AC over 8" Agg. Base	SQ YD	4,667	$18.00	$84,006
Concrete Curb & Gutter	FT	700	$15.00	$10,500
Traffic Signing & Striping - 2 lanes	FT	2,887	$3.50	$10,105
Traffic Signal, Full Intersection	EA	2	$125,000.00	$250,000
Bridge & Roadway Lighting	LF	1,350	$35.00	$47,250
Major Intersection Improvements	EA Location	6	$650,000.00	$3,900,000
Major Intersection Improvements	EA Location	5	$250,000.00	$1,250,000
Pavement Improve. on Adjacent Exist. Roadways (i.e. Widening, Turn La	Lump Sum	1	$750,000.00	$750,000
Catch Basins/Manholes	EA	12	$2,000.00	$24,000
RCP Storm Sewer	FT	850	$90.00	$76,500
Bridge Cost - Bridge Type 1 as per Report	SQ FT	46,000	$105.00	$4,830,000
Guardrail Including End Section	FT	800	$32.00	$25,600
Permanent Seeding & Landscaping	ACRE	1.67	$15,000.00	$25,050
Wetland Mitigation	ACRE	0.35	$50,000.00	$17,500
Erosion Control & Maintenance	Lump Sum	1	$50,000.00	$50,000
	Subtotal			**$13,162,217**
Removal of Existing Improvements, Clearing & Grubbing @ 2%	Lump Sum	1	$263,244.00	$263,244
Mobilization/Demobilization @ 4%	Lump Sum	1	$526,489.00	$526,489
ROW Acquisition	ACRE	3.25	$109,000.00	$354,250
Traffic Control @ 3%	Lump Sum	1	$394,866.00	$394,866
SUBTOTAL Construction				$14,701,066
	Contingency		30%	$4,410,320
Engineering & C.A. (20% of SUBTOTAL+ Contingency)			20%	$3,822,277
	TOTAL			**$22,933,662**

8.2 LINCOLN / WILLIAMS CORRIDOR – ALTERNATE B

Summary Description:

Alternative B proposes a bridge which would initially follow the same alignment as Alternative A, however this bridge profile would be constructed much higher and connect directly to Route 31. This Alternative does not involve any improvements to Lincoln since the proposed bridge would cross well above Lincoln.

Alternative B - Lincoln Corridor - Connects w/ Route 31				
Item Description	**Unit**	**Quantity**	**Unit Cost**	**Total**
N.P.D.E.S. Permitting, Including SWPPP	Lump Sum	1	$25,000.00	$25,000
Army Corps 404 Permitting	Lump Sum	1	$125,000.00	$125,000
Community Relations - Public Meetings	Allowance	1	$40,000.00	$40,000
Engineer's Field Office	Lump Sum	1	$30,000.00	$30,000
Roadway Excavation	CY	1,500	$12.00	$18,000
Borrow for Fill Construction	CY	21,946	$14.00	$307,244
Ditch Construction	LF	500	$11.00	$5,500
New Asphalt Concrete Pavement , 4" AC over 10" Agg. Base	SQ YD	1,003	$22.00	$22,066
Concrete Curb & Gutter	FT	520	$15.00	$7,800
Traffic Signing & Striping - 2 lanes	FT	1,890	$3.50	$6,615
Traffic Signal, Full Intersection	EA	2	$125,000.00	$250,000
Bridge & Roadway Lighting	LF	1,890	$35.00	$66,150
Major Intersection Improvements	EA Location	6	$650,000.00	$3,900,000
Major Intersection Improvements	EA Location	5	$250,000.00	$1,250,000
Pavement Improve. on Adjacent Exist. Roadways (i.e. Widening, Turn La	Lump Sum	1	$750,000.00	$750,000
Catch Basins/Manholes	EA	8	$2,000.00	$16,000
RCP Storm Sewer	FT	250	$90.00	$22,500
Bridge Cost - Bridge Type 2 as per Report	SQ FT	77,050	$163.00	$12,559,150
Guardrail Including End Section	FT	420	$32.00	$13,440
Permanent Seeding & Landscaping	ACRE	0.50	$15,000.00	$7,500
Wetland Mitigation	ACRE	0.35	$50,000.00	$17,500
Erosion Control & Maintenance	Lump Sum	1	$50,000.00	$50,000
	Subtotal			**$19,489,465**
Removal of Existing Improvements, Clearing & Grubbing @ 2%	Lump Sum	1	$389,789.00	$389,789
Mobilization/Demobilization @ 4%	Lump Sum	1	$779,579.00	$779,579
ROW Acquisition	ACRE	3.00	$109,000.00	$327,000
Traffic Control @ 3%	Lump Sum	1	$584,684.00	$584,684
SUBTOTAL Construction				$21,570,517
	Contingency		30%	$6,471,155
Engineering & C.A. (20% of SUBTOTAL+ Contingency)			20%	$5,608,334
	TOTAL			**$33,650,007**

8.3 MILLER CORRIDOR – ALTERNATE C

Summary Description:

This Alternative begins at the intersection of Route 31 and Miller Road and extends east through an existing farm field before bridging the Fox River and connecting into a four leg intersection at Kings Road. Complete reconstruction of the intersection and approach legs will be required due to both vertical and horizontal alignment considerations.

Alternative C - Miller Corridor - 4-way Intersection w/ Kings				
Item Description	**Unit**	**Quantity**	**Unit Cost**	**Total**
N.P.D.E.S. Permitting, Including SWPPP	Lump Sum	1	$25,000.00	$25,000
Army Corps 404 Permitting	Lump Sum	1	$125,000.00	$125,000
Community Relations - Public Meetings	Allowance	1	$40,000.00	$40,000
Engineer's Field Office	Lump Sum	1	$30,000.00	$30,000
Roadway Excavation	CY	42,970	$12.00	$515,640
Borrow for Fill Construction	CY	65,690	$14.00	$919,660
Ditch Construction	LF	12,200	$11.00	$134,200
New Asphalt Concrete Pavement , 4" AC over 10" Agg. Base	SQ YD	29,880	$22.00	$657,360
Traffic Signing & Striping - 2 lanes	FT	7,773	$3.50	$27,206
Traffic Signal, Full Intersection	EA	2	$140,000.00	$280,000
Bridge & Roadway Lighting	LF	7,773	$35.00	$272,055
Major Intersection Improvements	EA Location	5	$650,000.00	$3,250,000
Major Intersection Improvements	EA Location	7	$350,000.00	$2,450,000
Pavement Improve. on Adjacent Exist. Roadways (i.e. Widening, Turn La	Lump Sum	1	$750,000.00	$750,000
Multiple Box Culverts at Tributary Crossing	Lump Sum	1	$175,000.00	$175,000
Catch Basins/Manholes	EA	6	$2,000.00	$12,000
RCP Storm Sewer	FT	400	$90.00	$36,000
Bridge Cost - Bridge Type 1 as per Report	SQ FT	63,020	$105.00	$6,617,100
Guardrail Including End Section	FT	900	$32.00	$28,800
Permanent Seeding & Landscaping	ACRE	6.30	$15,000.00	$94,500
Wetland Mitigation	ACRE	0.60	$50,000.00	$30,000
Erosion Control & Maintenance	Lump Sum	1	$50,000.00	$50,000
	Subtotal			**$16,519,521**
Removal of Existing Improvements, Clearing & Grubbing @ 2%	Lump Sum	1	$330,390.00	$330,390
Mobilization/Demobilization @ 4%	Lump Sum	1	$660,781.00	$660,781
ROW Acquisition	ACRE	9.85	$109,000.00	$1,073,650
Traffic Control @ 3%	Lump Sum	1	$495,586.00	$495,586
SUBTOTAL Construction				$19,079,928
	Contingency		30%	$5,723,978
Engineering & C.A. (20% of SUBTOTAL+ Contingency)			20%	$4,960,781
	TOTAL			**$29,764,687**

8.4 MILLER CORRIDOR – ALTERNATE D

Summary Description:

This Alternative also begins at the intersection of Route 31 and Miller Road. The roadway alignment follows a similar path as Alternate C, but diverges slightly north to cross the Fox River and finally connect directly to Williams Street east of the River. The connection at Williams forms a T-intersection approximately 0.20 miles north of Kings Road.

Alternative D - Miller Corridor - T-intersection at Williams				
Item Description	**Unit**	**Quantity**	**Unit Cost**	**Total**
N.P.D.E.S. Permitting, Including SWPPP	Lump Sum	1	$25,000.00	$25,000
Army Corps 404 Permitting	Lump Sum	1	$125,000.00	$125,000
Community Relations - Public Meetings	Allowance	1	$40,000.00	$40,000
Engineer's Field Office	Lump Sum	1	$30,000.00	$30,000
Roadway Excavation	CY	19,387	$12.00	$232,644
Borrow for Fill Construction	CY	39,335	$14.00	$550,690
Ditch Construction	LF	12,400	$11.00	$136,400
New Asphalt Concrete Pavement , 4" AC over 10" Agg. Base	SQ YD	30,370	$22.00	$668,140
Traffic Signing & Striping - 2 lanes	FT	7,408	$3.50	$25,928
Traffic Signal, Full Intersection	EA	2	$125,000.00	$250,000
Bridge & Roadway Lighting	LF	7,408	$35.00	$259,280
Major Intersection Improvements	EA Location	5	$650,000.00	$3,250,000
Major Intersection Improvements	EA Location	7	$350,000.00	$2,450,000
Pavement Improve. on Adjacent Exist. Roadways (i.e. Widening, Turn Lar	Lump Sum	1	$750,000.00	$750,000
Multiple Box Culverts at Tributary Crossing	Lump Sum	1	$175,000.00	$175,000
Catch Basins/Manholes	EA	6	$2,000.00	$12,000
RCP Storm Sewer	FT	400	$90.00	$36,000
Bridge Cost - Bridge Type 1 as per Report	SQ FT	41,400	$105.00	$4,347,000
Guardrail Including End Section	FT	1,100	$32.00	$35,200
Permanent Seeding & Landscaping	ACRE	6.20	$15,000.00	$93,000
Wetland Mitigation	ACRE	0.60	$50,000.00	$30,000
Erosion Control & Maintenance	Lump Sum	1	$50,000.00	$50,000
	Subtotal			**$13,571,282**
Removal of Existing Improvements, Clearing & Grubbing @ 2%	Lump Sum	1	$271,426.00	$271,426
Mobilization/Demobilization @ 4%	Lump Sum	1	$542,851.00	$542,851
ROW Acquisition	ACRE	9.85	$109,000.00	$1,073,650
Traffic Control @ 3%	Lump Sum	1	$407,138.00	$407,138
SUBTOTAL Construction				$15,866,347
	Contingency		30%	$4,759,904
Engineering & C.A. (20% of SUBTOTAL+ Contingency)			20%	$4,125,250
	TOTAL			**$24,751,501**

9.0 PERMITTING & ENVIRONMENTAL COORDINATION CONSIDERATIONS

The following is a list of permit requirements for authorization under the Regional Permits Program – U.S. Army Corps of Engineers. Other anticipated permit/environmental coordination requirements are also listed below.

1. State 401 Water Quality Certification
   Contact: Illinois Environmental Protection Agency

2. Threatened and Endangered Species
   Contact: U.S. Fish and Wildlife Service

3. Historic Properties
   Contact: Illinois Historic Preservation Agency (IHPA)
   National Register of Historic Places

4. Soil Erosion and Sediment Control
   Contact: Kane/DuPage Soil and Water Conservation District

5. NPDES – Requires Submittal of a Notice of Intent (NOI) form as well as full development of a Storm Water Pollution Prevention Plan (SWPPP).

6. Section 404 Permit.
   Contact: U.S. Army Corps of Engineers.

7. Aquatic Life Movements – no adverse effect

8. Wetland Mitigation. Includes a wetland investigation and development of Wetland Impact Evaluation (WIE) Forms. The proposed method of Mitigation (i.e. Wetland Banking) should be defined during this process.
   Contact: Illinois Department of Natural Resources (IDNR).

9. Wild and Scenic Rivers
   Contact: National Park Services
   U. S. Forest Service

10. Tribal Rights – no adverse impact

11. Water Supply Intakes – no discharge near public water supply intakes

12. Shellfish Production – no discharge near concentrated shellfish production

13. Suitable Material – no discharge may consist of unsuitable material

14. Spawning Areas – avoid discharges in spawning areas

15. Obstruction of High Flows – discharges must not restrict passage of normal high flows

16. Impacts from Impoundments – minimize adverse impacts on aquatic life/minimize restriction of flow

17. Waterfowl Breeding Areas – no adverse impacts

18. Removal of Temporary Fills

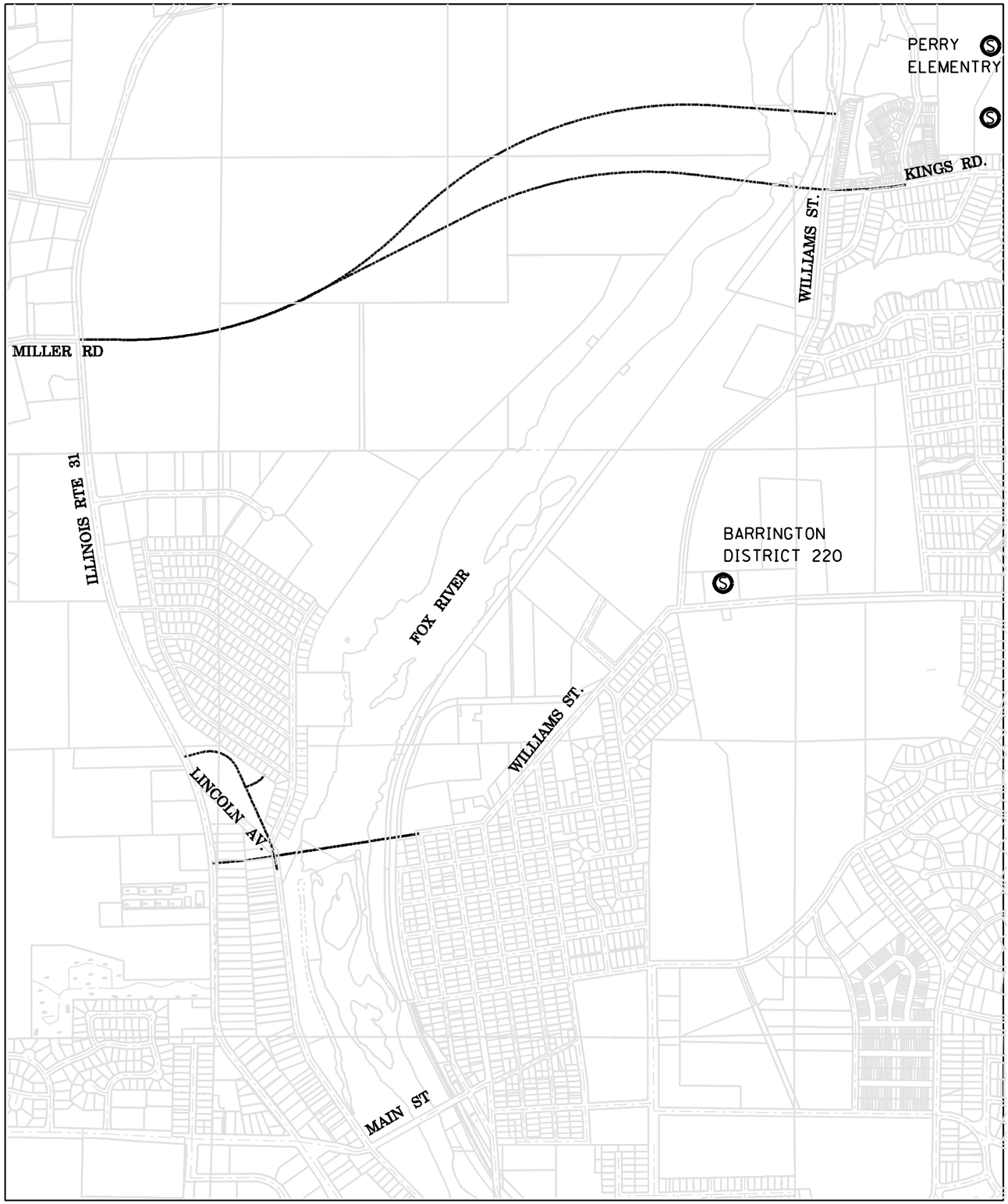
19. Mitigation – minimize discharges before mitigation is considered

10.0 CONCLUSIONS

Based on anticipated construction costs, Alternative A (Lincoln/Williams, Direct Connection to Lincoln) appears to be the most cost effective Alternative at approximately $22.9M. However, the overall impacts of each Alternative must be compared as relates to cost, environmental impacts, public input, and certainly effects on the traveling public.

This Study is a conceptual assessment of potential local bridges for the Carpentersville area. Additional engineering and environmental studies will need to be completed by the Village of Carpentersville before any final determination of viable local bridge corridors.

The Study results contained in this report are not intended to develop an alternative Bridge Corridor to replace the previously studied Longmeadow Parkway Corridor, but rather to investigate potential bridge crossing options which could supplement the Longmeadow structure. Review and consideration of this report by the Village of Carpentersville and the local public will serve to shape future consideration and actions by the Village. Similarly, subsequent updates and enhancements of related traffic modeling will lend themselves in better understanding the potential traffic impacts to the Corridors introduced in this report.



N

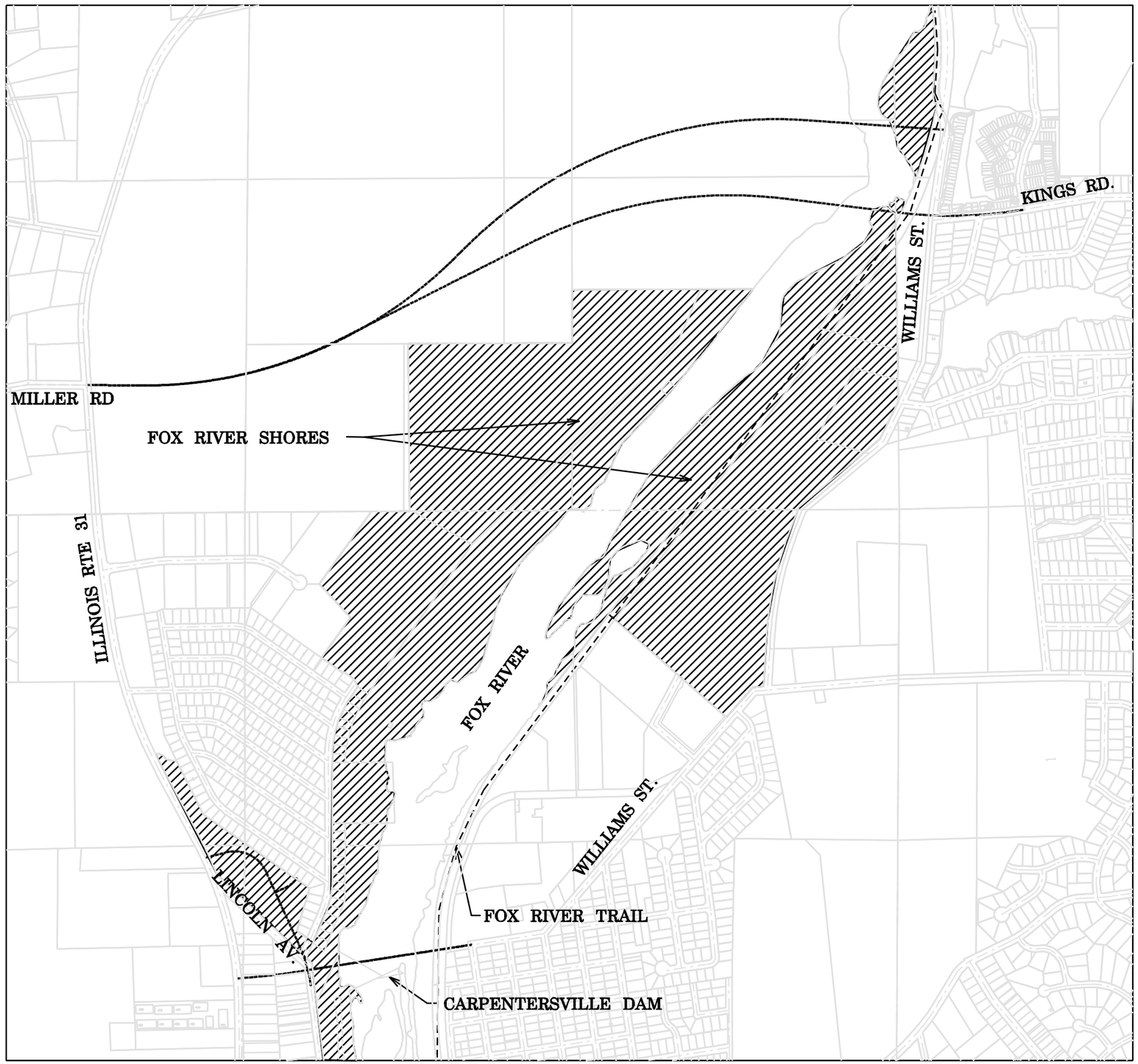
LEGEND

—— ALTERNATE ALIGNMENTS

Ⓢ SCHOOLS

EXHIBIT 1
PROJECT LOCATION MAPPING

FOX RIVER BRIDGE CROSSING PROJECT
APRIL 2004



N

LEGEND

- FOREST PRESERVE
- FOX RIVER TRAIL
- PROPOSED ALTERNATIVE ALIGNMENTS

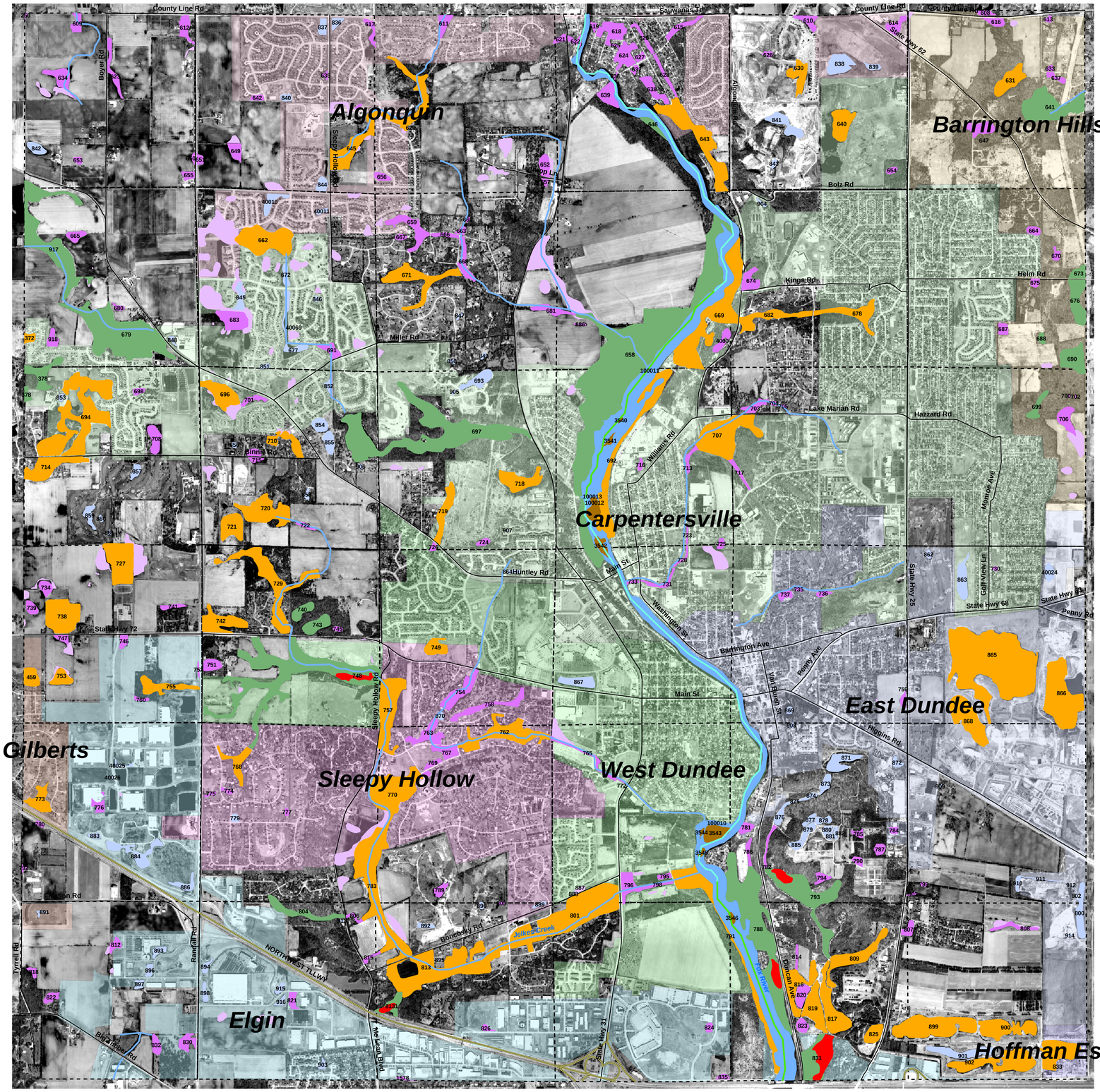
EXHIBIT 2A

ENVIROMENTAL - FOREST PRESERVE AREAS

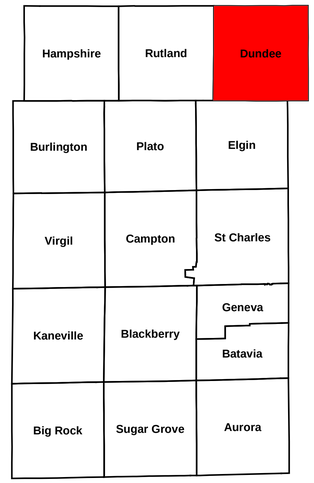
FOX RIVER BRIDGE CROSSING PROJECT

APRIL 2004

Kane County Advanced Identification of Aquatic Resources (ADID) Dundee Township



Kane County Townships



Map Sections
Expressways
Major Roads

Rivers, Streams, and Ditches

Biological Stream Characterization

- High Quality
- C,D, and E Quality
- Unrated

Wetland Type

- High Habitat Value
- High Functional Value
- Wetland
- Natural Open Water and Fox River
- Artificial Ponds
- ADID Farmed Wetlands
- Islands
- Fens
- NRCS Farmed Wetlands

This map was produced under the Advanced Identification (ADID) Program of the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers. Descriptions of the wetland inventory methodology and the wetland and stream designation criteria are available in the Kane County ADID Study Methodology.

The wetland boundaries shown are not jurisdictional delineations.

Note: Although the aerial photography displayed on this mapwas taken in 2001, the ADID data was based on aerial photography taken in 1996-1998 and then updated with photography from 2000. For this reason some features present on the 2001 photography may not be reflected in the ADID data.

Date of Map Creation: August 30, 2004
L. Barghusen, Senior Environmental Analyst

Watersheds and Non-point Source Programs Branch
Region 5
U.S. Environmental Protection Agency

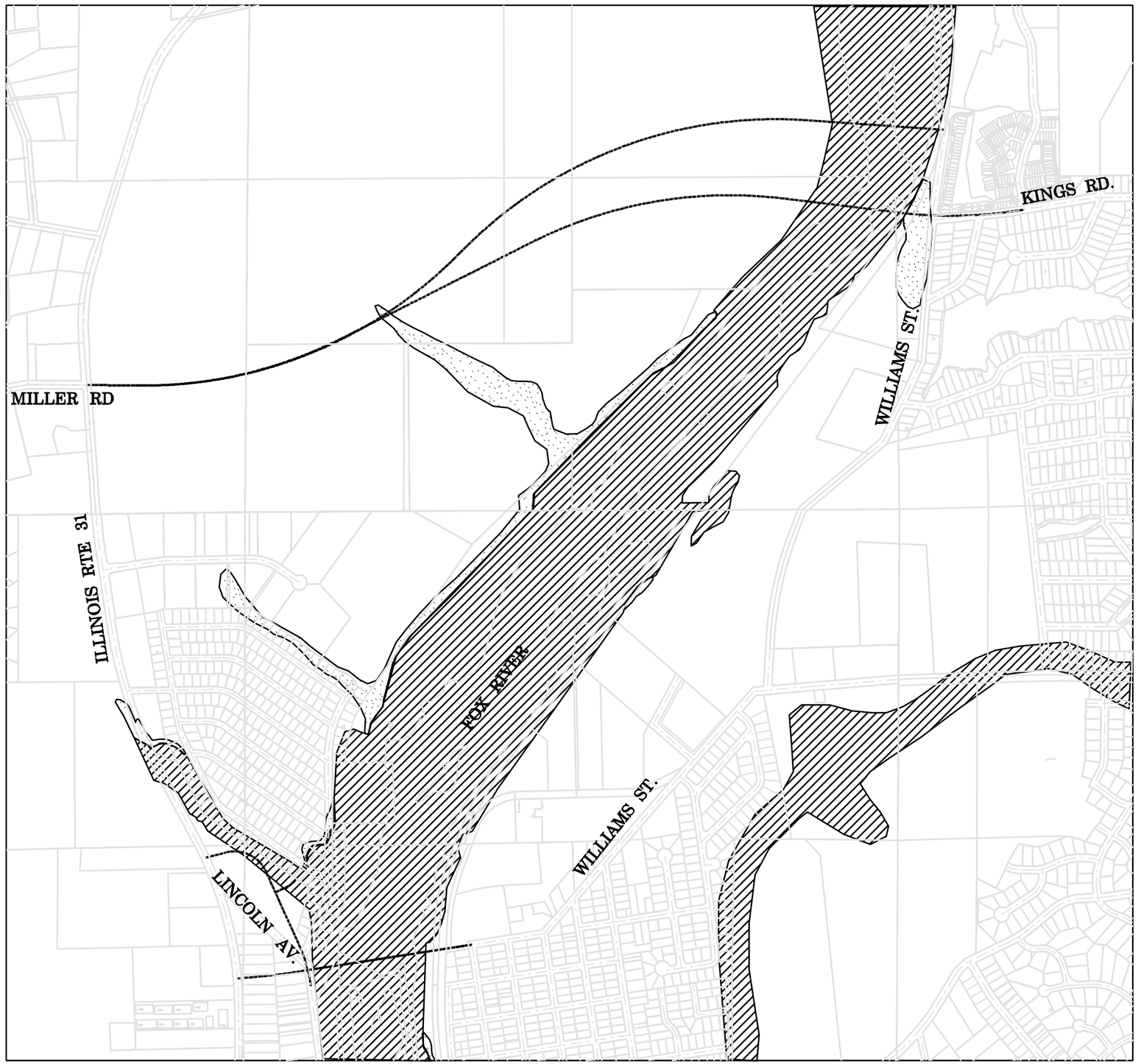
Regulatory Branch
U.S. Army Corps of Engineers

US Army Corps of Engineers

northeastern illinois planning commission

0 0.25 0.5 1 Miles

N W E S



N

LEGEND

ALTERNATE ALIGNMENTS
100 YEAR FLOOD
500 YEAR FLOOD

EXHIBIT 3

FEMA FLOOD PLAIN MAPPING

FOX RIVER BRIDGE CROSSING PROJECT

APRIL 2004

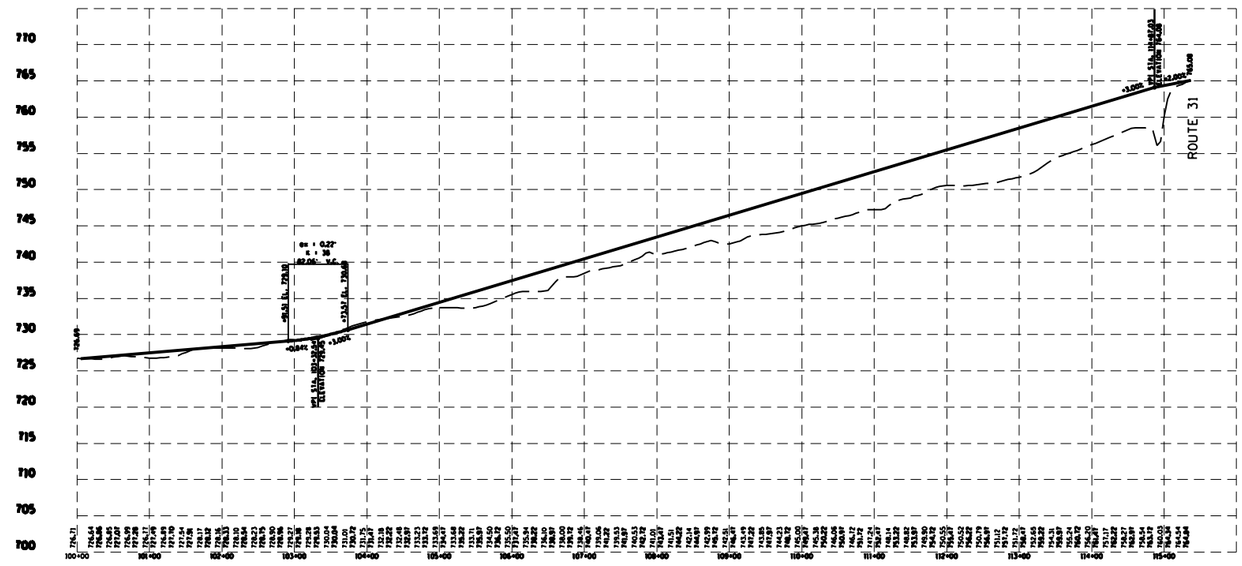
PROP. CURVE PRL(INC-2
PI STA. = 112+14.34
Δ = 80° 17' 49" (LT)
D = 20° 50' 05"
R = 275.00'
T = 231.97'
L = 385.40'
E = 84.77'
e = -----
T.R. = -----
S.E. RUN = -----
P.C. STA = 109+82.37
P.T. STA = 113+67.77

PROP. CURVE PRL(INC-1
PI STA. = 101+66.90
Δ = 17° 15' 19" (LT)
D = 5° 12' 31"
R = 1,100.00'
T = 166.90'
L = 331.28'
E = 12.59'
e = -----
T.R. = -----
S.E. RUN = -----
P.C. STA = 100+00.00
P.T. STA = 103+31.28

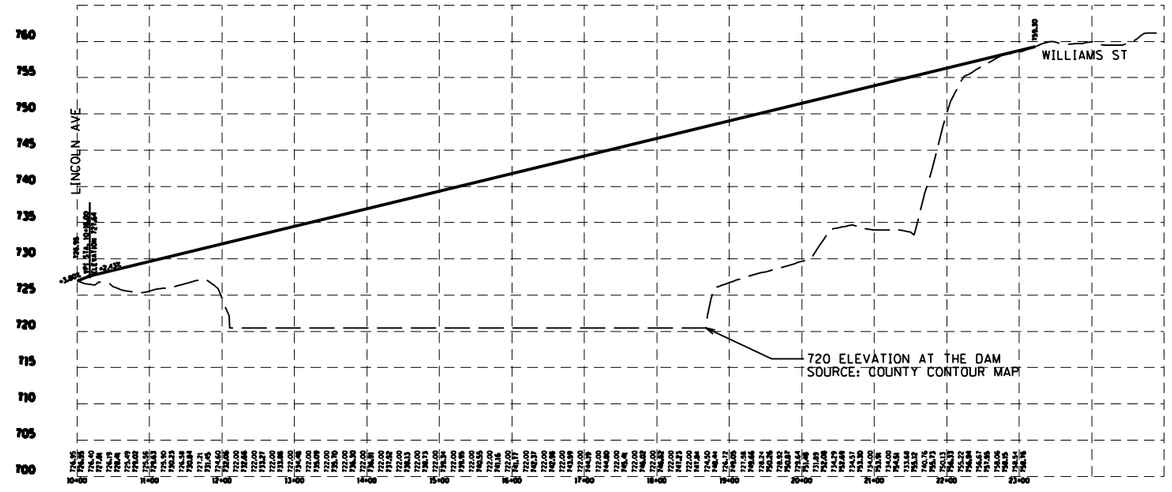
RIVERS VIEW DR.
FOX RIVER DR.
LINCOLN AVE.
WILLIAMS ST.
PARK AVE.
CARPENTER ST.
Fox River
Fox River

EXHIBIT 4A-1
PLAN: LINCOLN CORRIDOR
ALTERNATIVE A

FOX RIVER BRIDGE CROSSING PROJECT
APRIL 2004



LINCOLN AVE. PROFILE



ALT A BRIDGE CROSSING

EXHIBIT 4A-2
PROFILE: LINCOLN CORRIDOR
ALTERNATIVE A

FOX RIVER BRIDGE CROSSING PROJECT
APRIL 2004

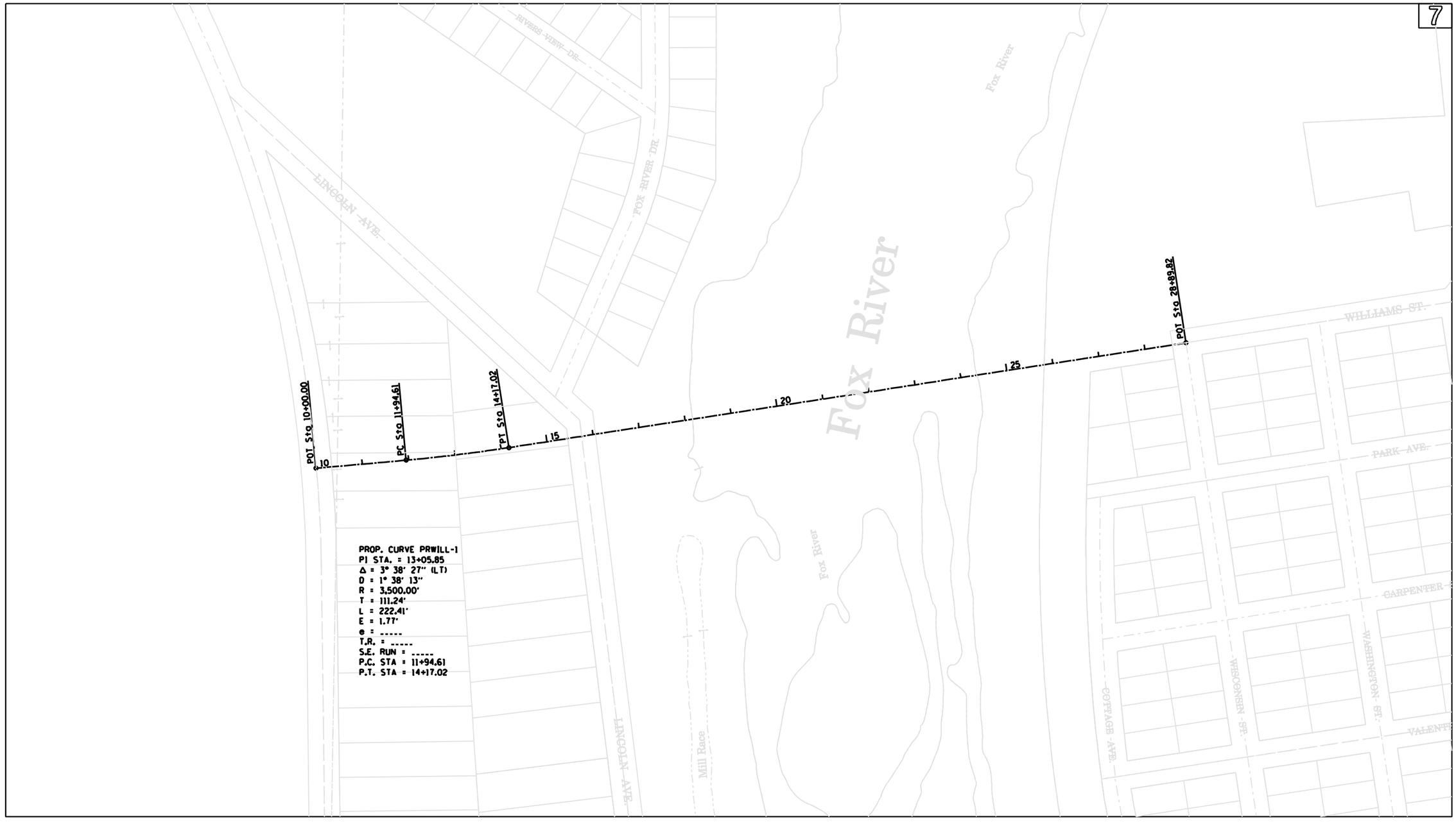


EXHIBIT 4B-1
PLAN: LINCOLN CORRIDOR
ALTERNATIVE B

FOX RIVER BRIDGE CROSSING PROJECT
APRIL 2004

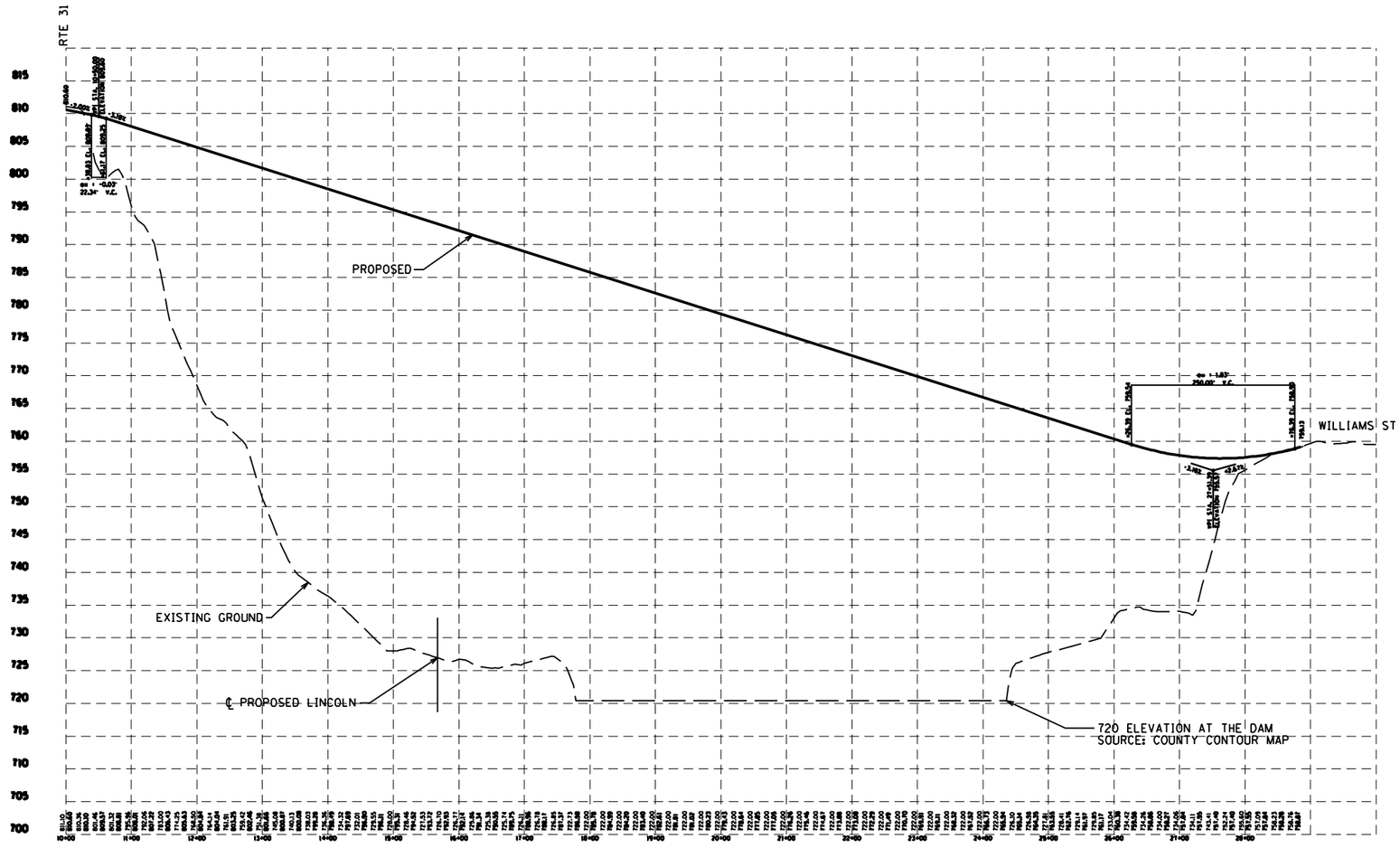
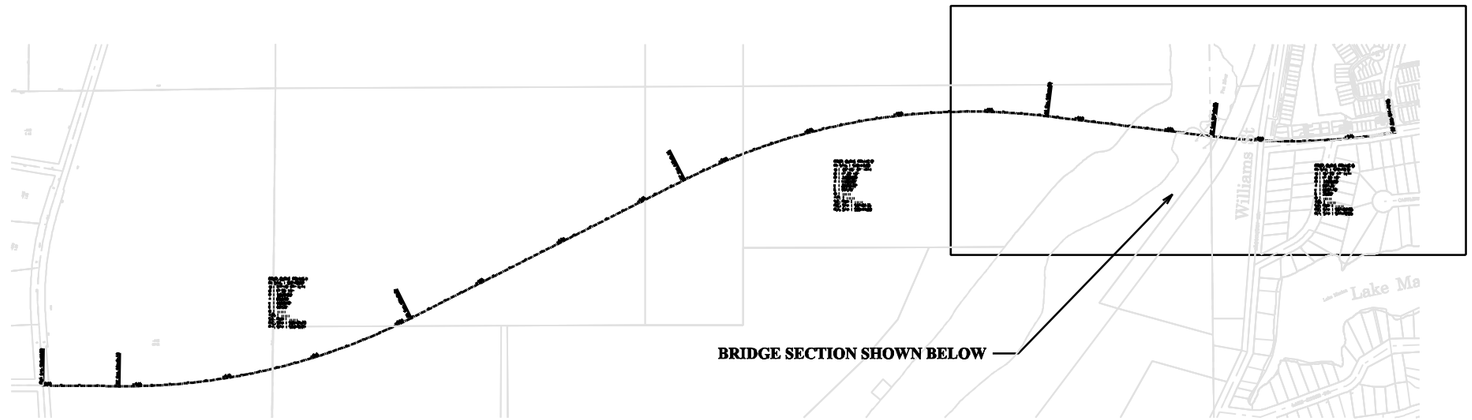


EXHIBIT 4B-2
PROFILE: LINCOLN CORRIDOR
ALTERNATIVE B

FOX RIVER BRIDGE
CROSSING PROJECT
APRIL 2004



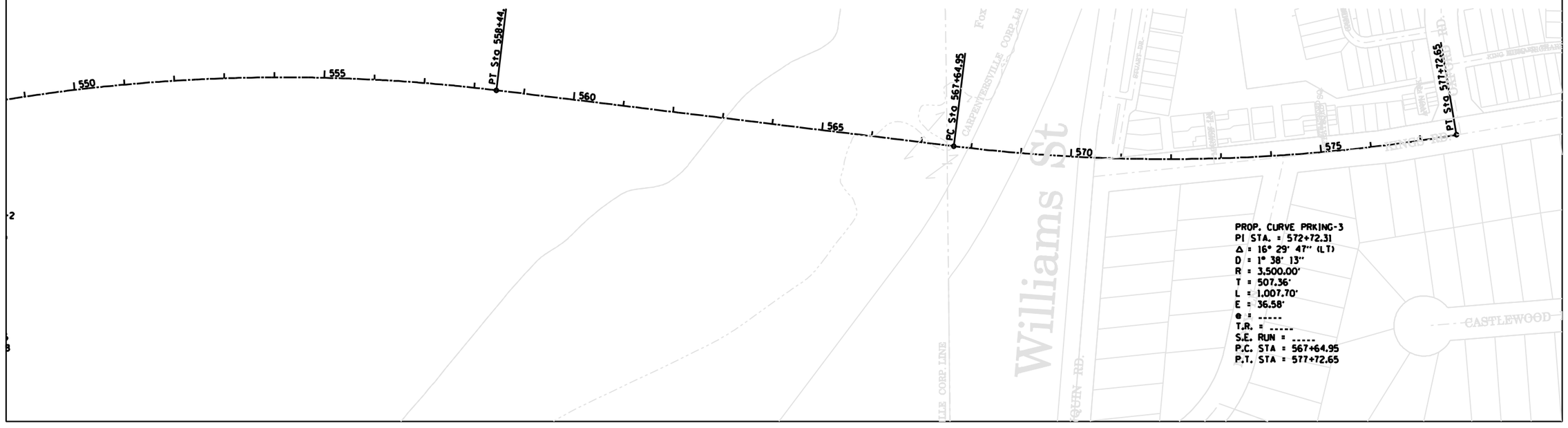
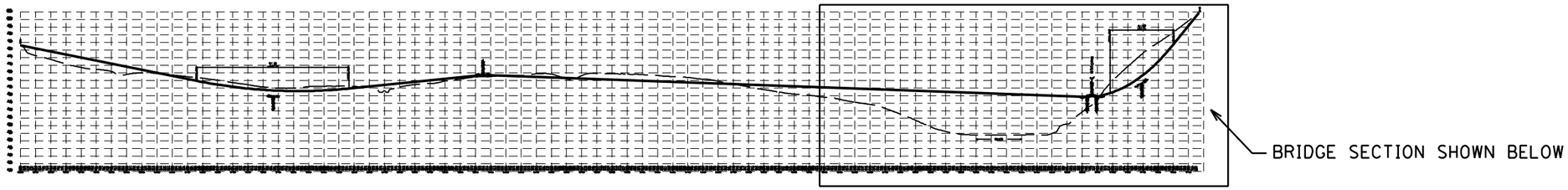


EXHIBIT 4C-1
PLAN: MILLER CORRIDOR
ALTERNATIVE C

FOX RIVER BRIDGE CROSSING PROJECT
APRIL 2004



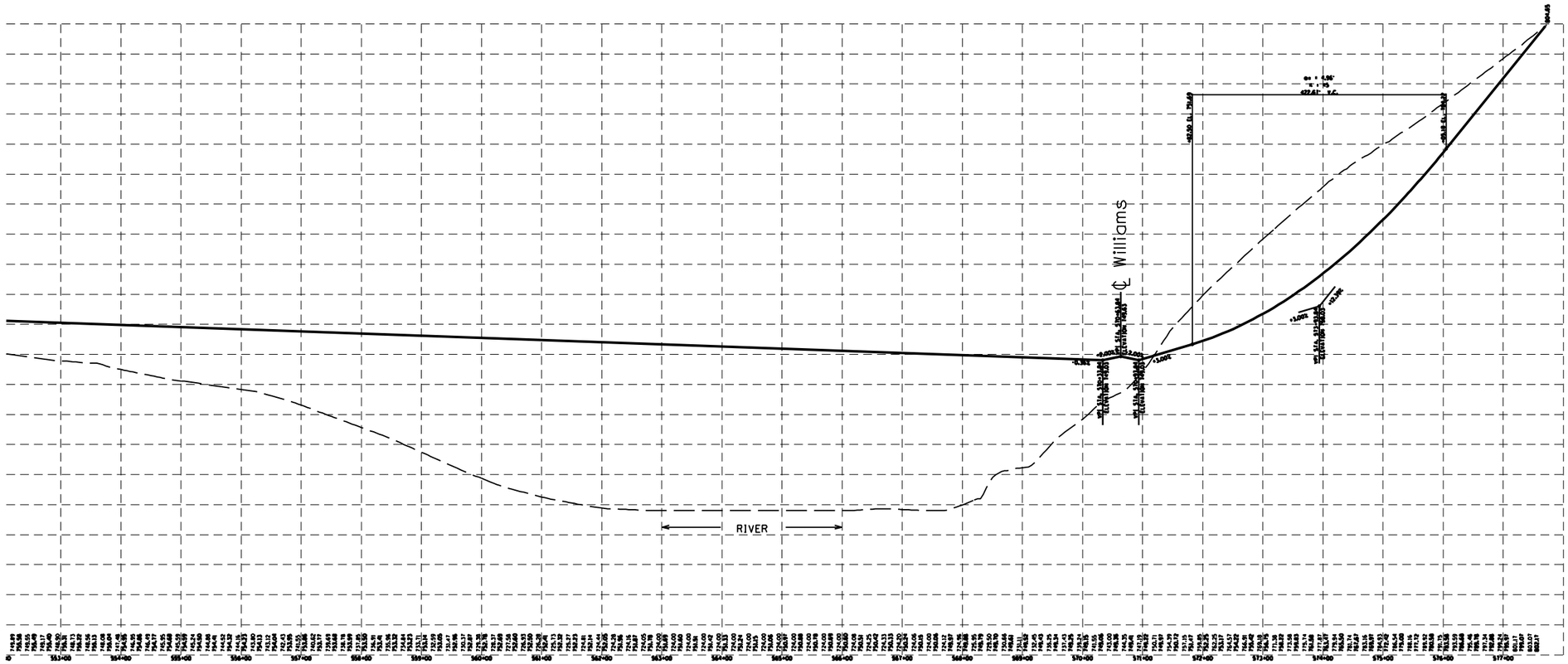
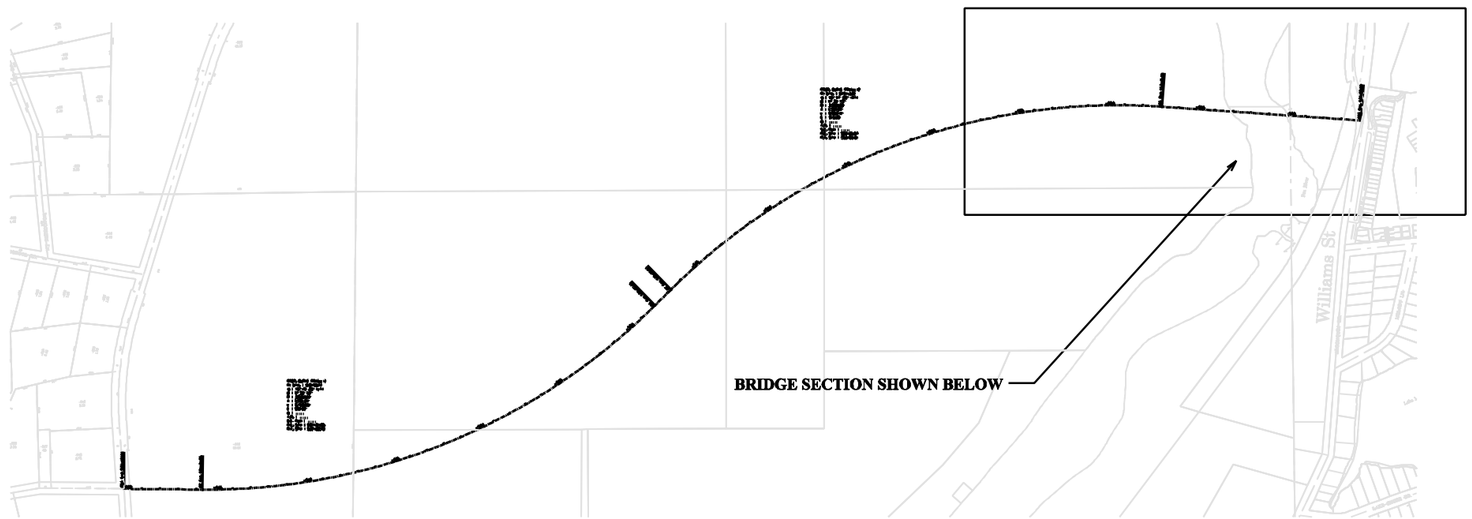


EXHIBIT 4C-2
PROFILE: MILLER CORRIDOR
ALTERNATIVE C

FOX RIVER BRIDGE CROSSING PROJECT
APRIL 2004



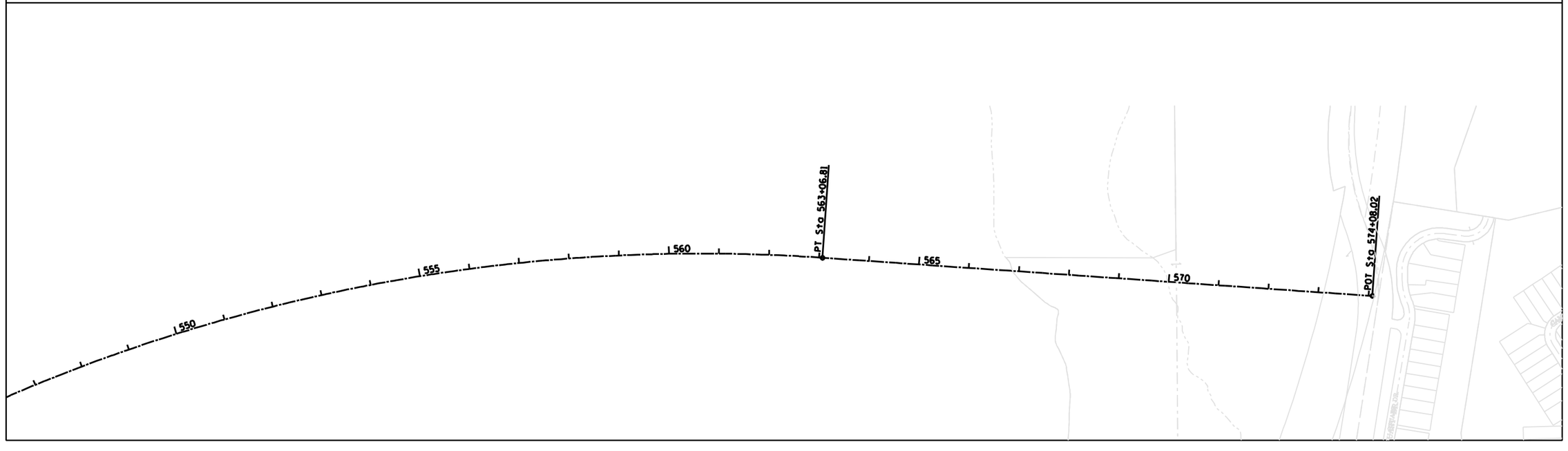
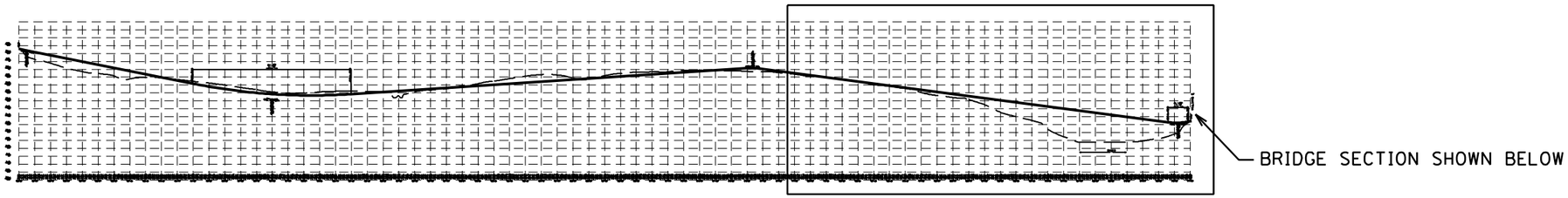


EXHIBIT 4D-1

PLAN: MILLER CORRIDOR
ALTERNATIVE D

FOX RIVER BRIDGE
CROSSING PROJECT

APRIL 2004



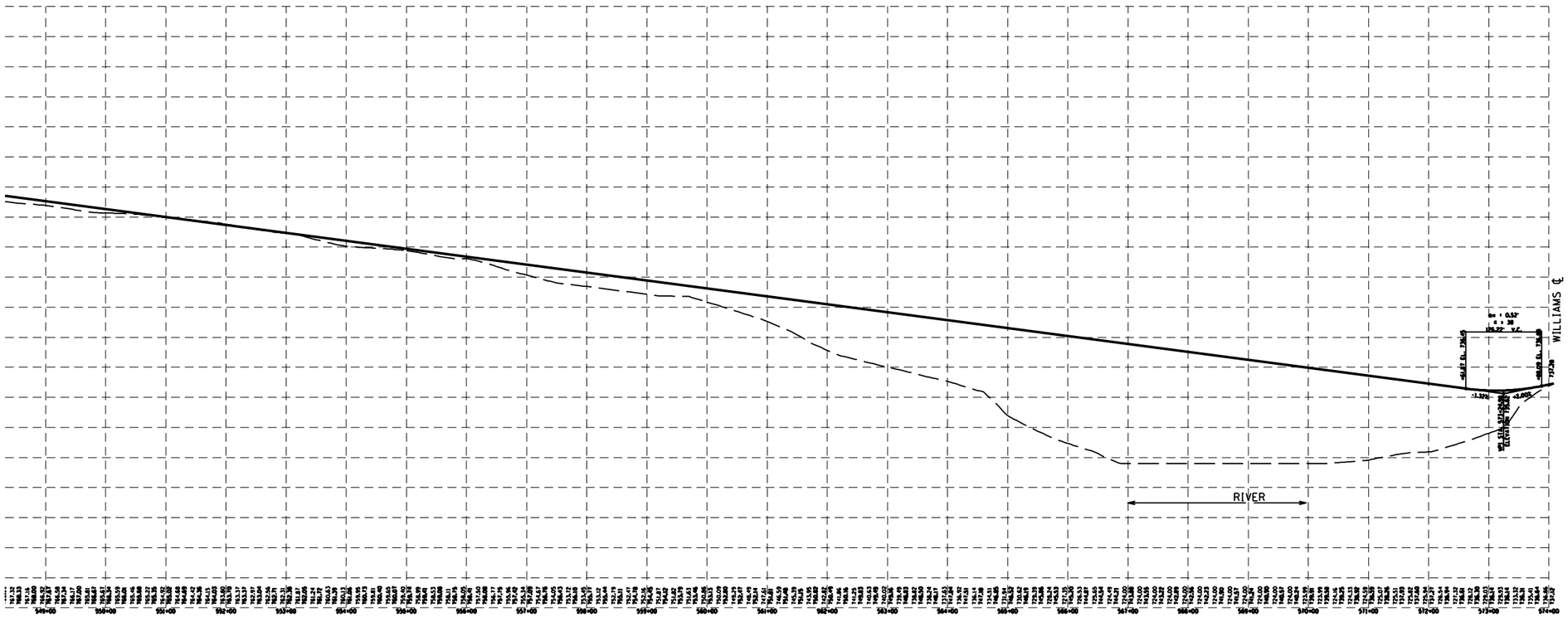


EXHIBIT 4D-2
PROFILE: MILLER CORRIDOR
ALTERNATIVE D

FOX RIVER BRIDGE CROSSING PROJECT
APRIL 2004

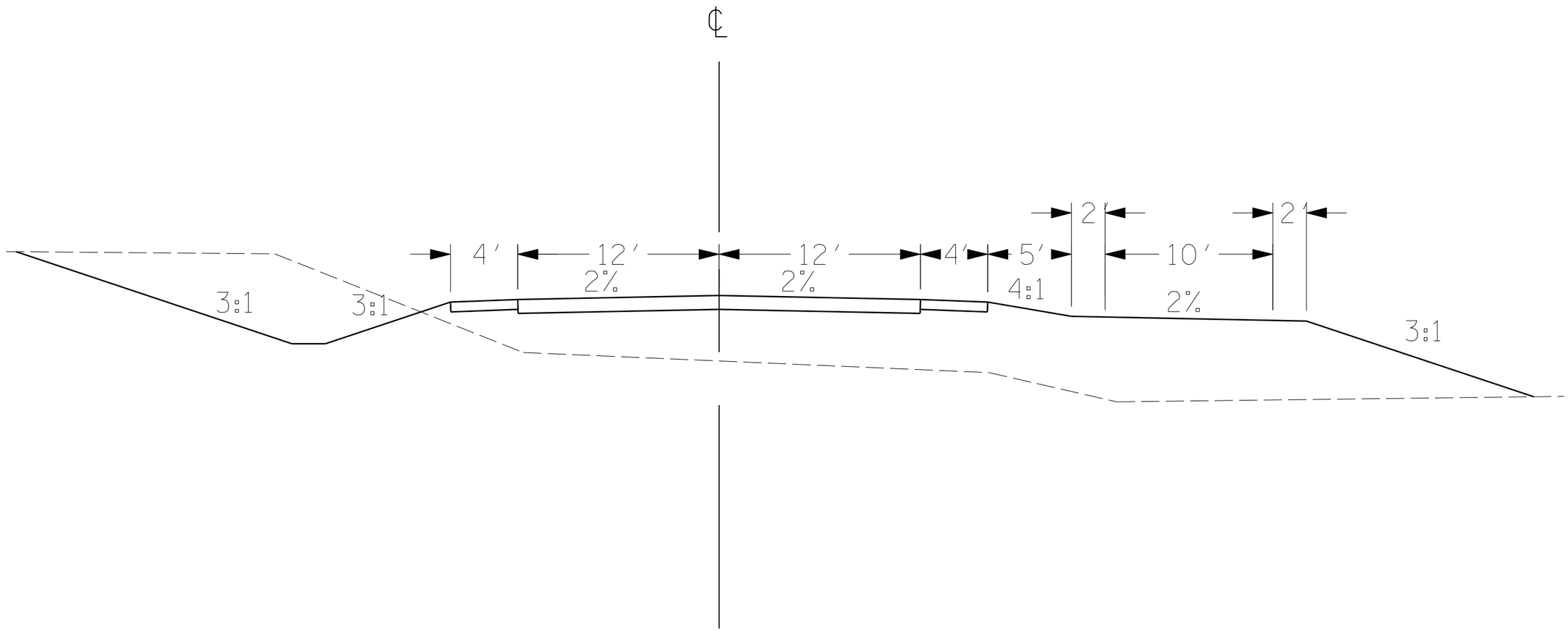


EXHIBIT 4E

TYPICAL ROADWAY SECTION
ALTERNATIVES A-D

FOX RIVER BRIDGE
CROSSING PROJECT

APRIL 2004

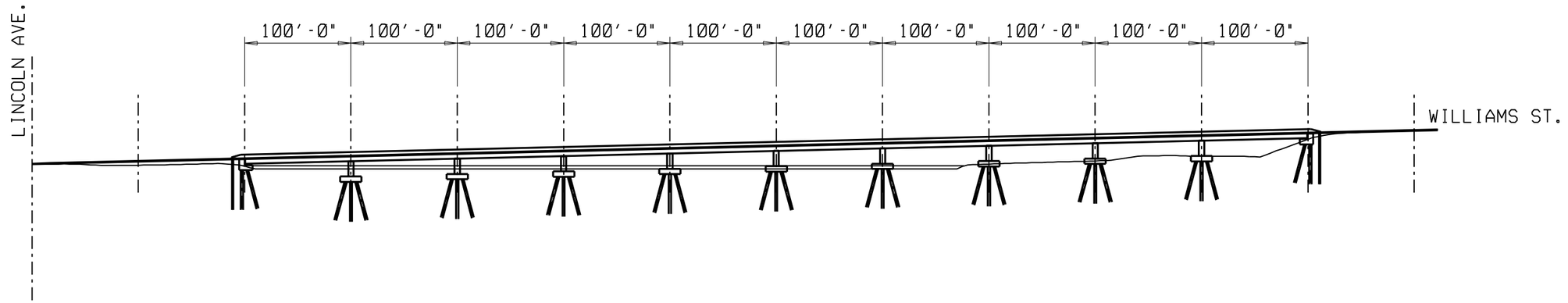


EXHIBIT 5A
BRIDGE TYPE 1 ELEVATION

FOX RIVER BRIDGE
CROSSING PROJECT
APRIL 2004

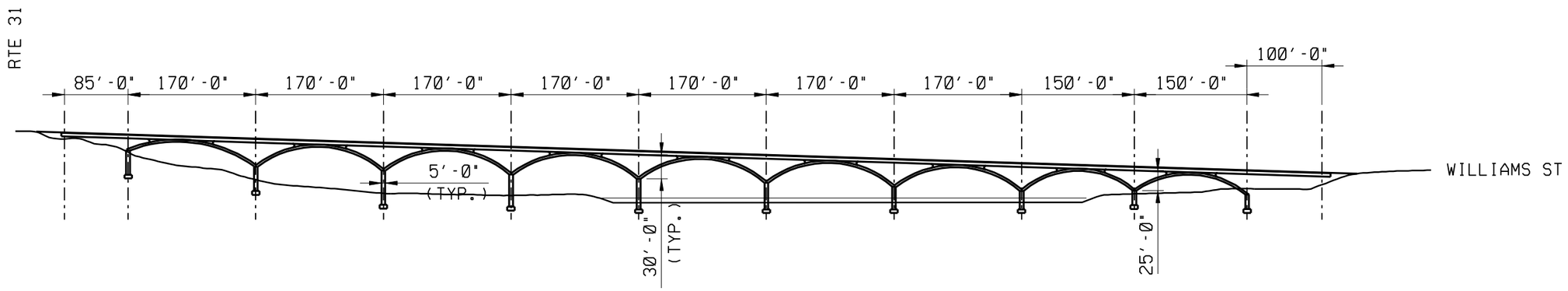


EXHIBIT 5B
BRIDGE TYPE 2 ELEVATION

FOX RIVER BRIDGE
CROSSING PROJECT
APRIL 2004

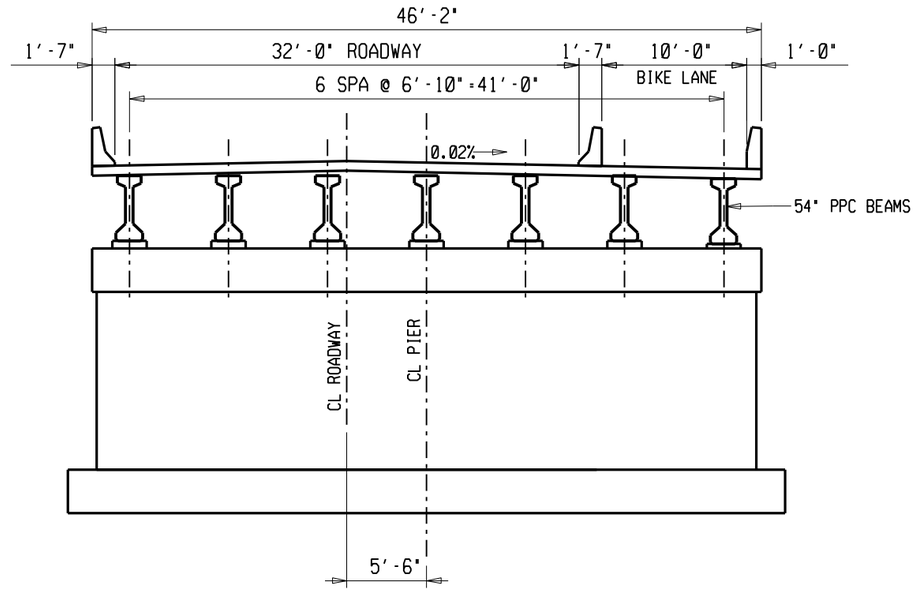


EXHIBIT 5C

BRIDGE TYPE 1 CROSS SECTIONS

FOX RIVER BRIDGE
CROSSING PROJECT

APRIL 2004

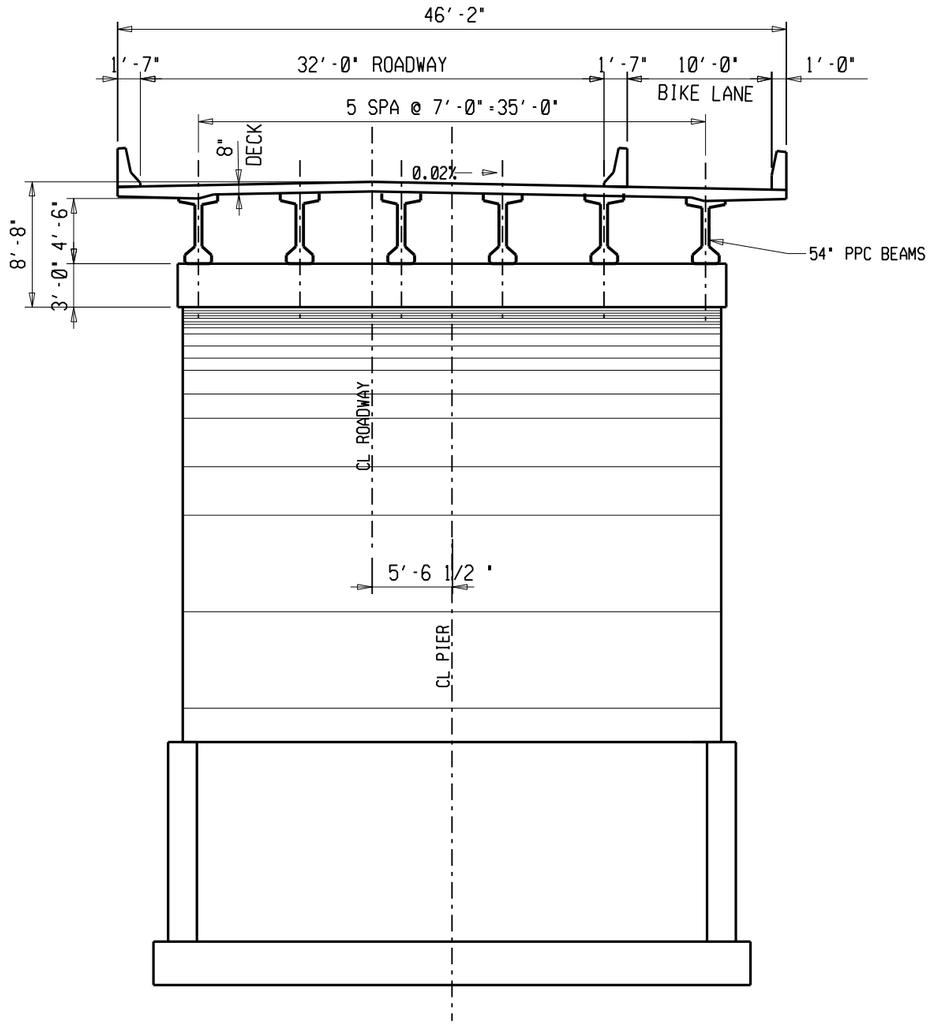


EXHIBIT 5D
BRIDGE TYPE 2 CROSS SECTIONS

FOX RIVER BRIDGE
CROSSING PROJECT
APRIL 2004

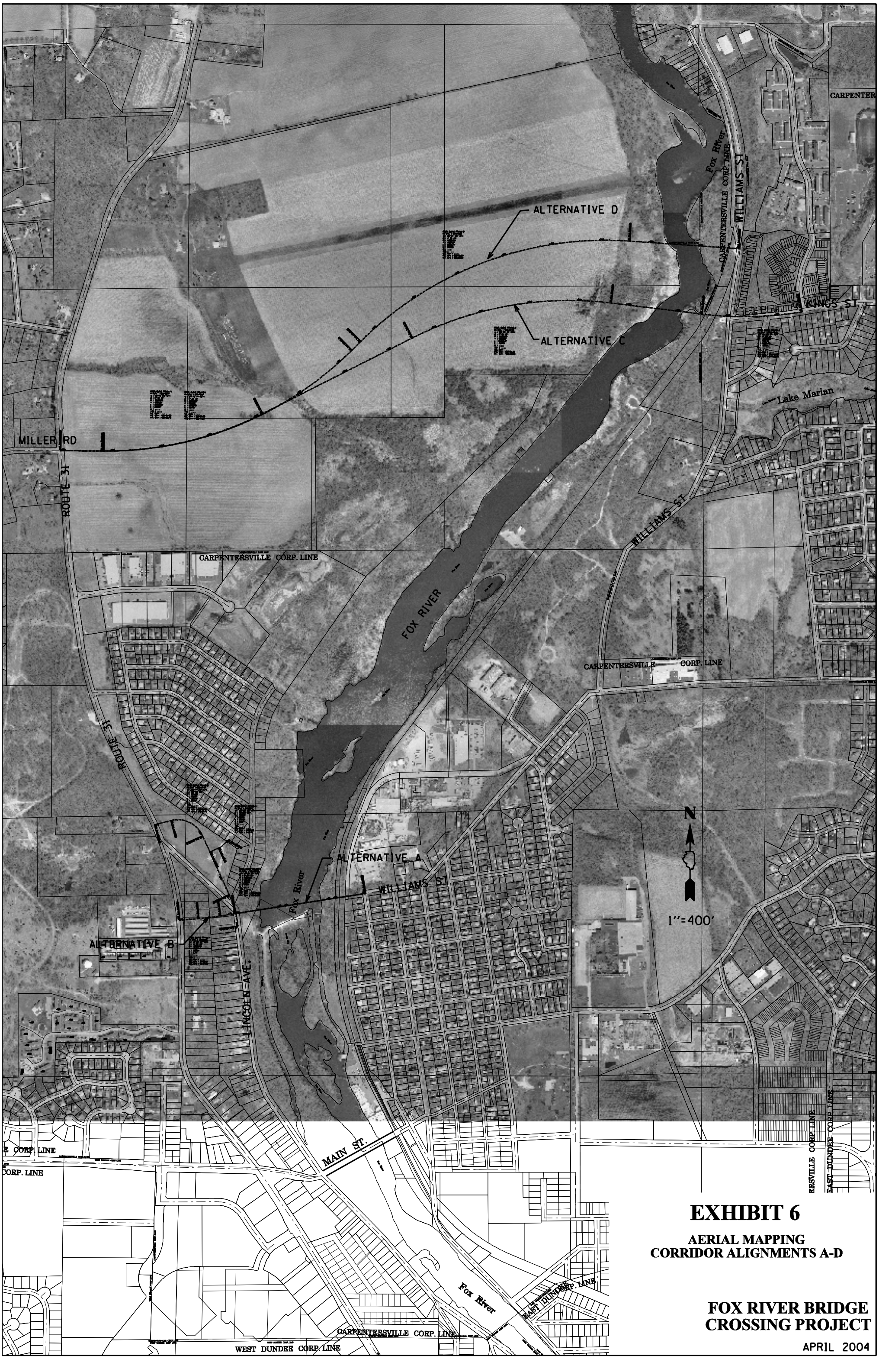


EXHIBIT 6

AERIAL MAPPING
CORRIDOR ALIGNMENTS A-D

FOX RIVER BRIDGE CROSSING PROJECT

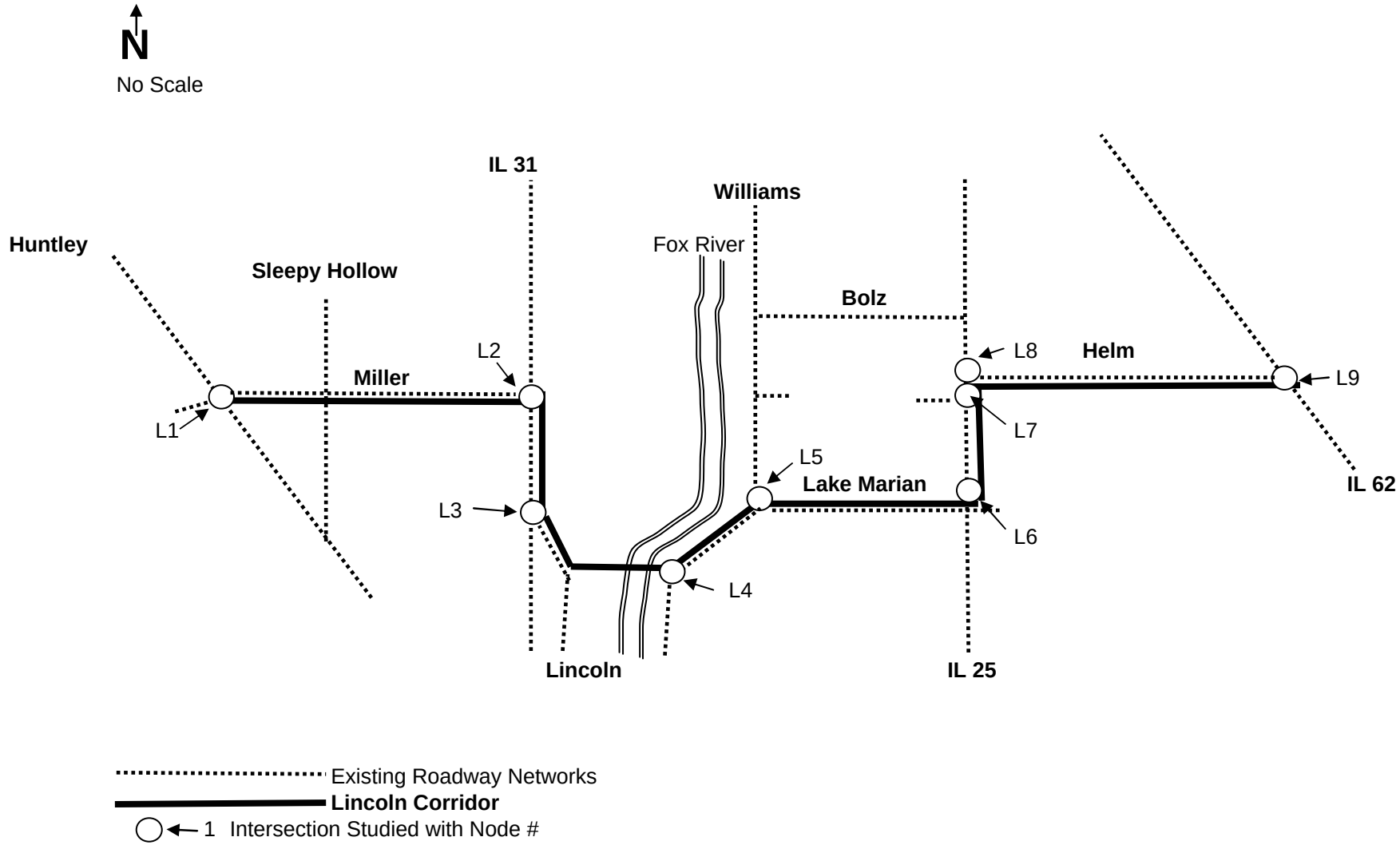
APRIL 2004

Exhibit 7A

Lincoln / Williams Corridor

List of Sections

1. Intersection - Node Map (9 Nodes)
2. ADT (also see Section 7 of the report body)
3. a. 2030 Peak Hour Volumes
   b. Existing Lane Configuration at each Node and Lane Requirements under a New Bridge in order to provide Level of Service "C"



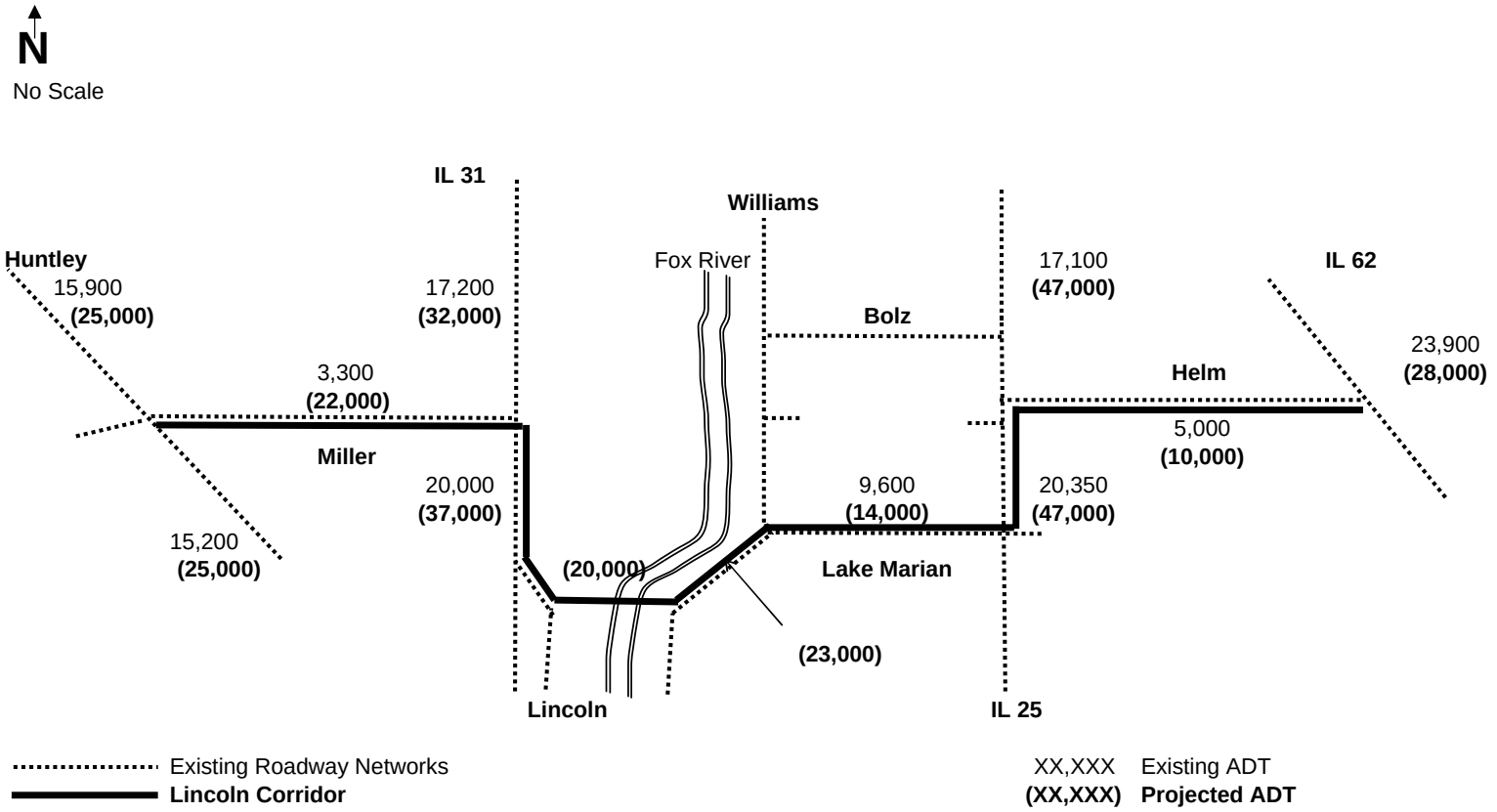
Lincoln / Williams Corridor

Intersection-Node Map

Bridge Corridor Study at the Fox River

Teng

October 2004

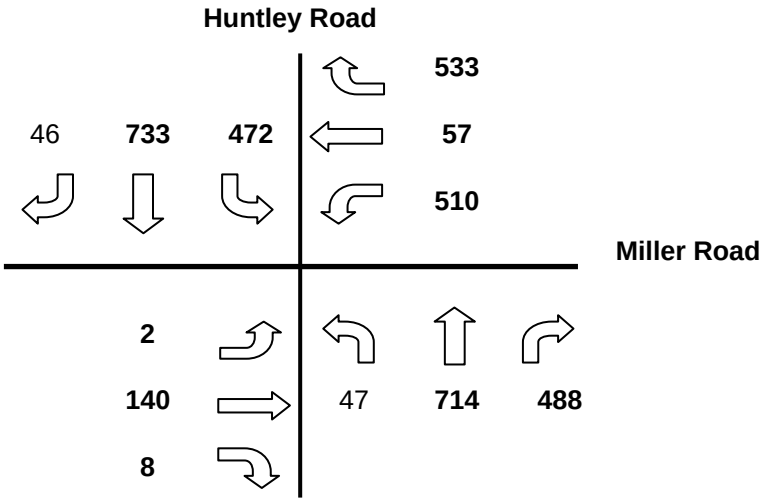


Lincoln / Williams Corridor

Existing & Projected 2030 Average Daily Traffic (ADT)

N

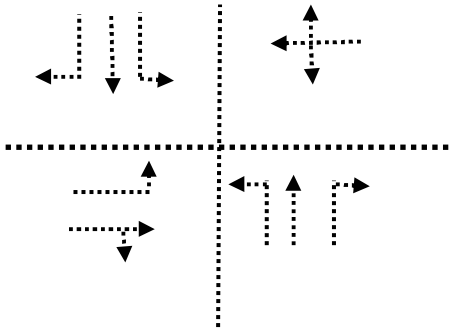
No Scale



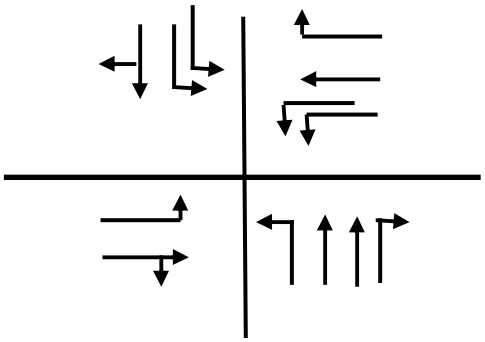
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L1

Miller Road @ Huntley Road

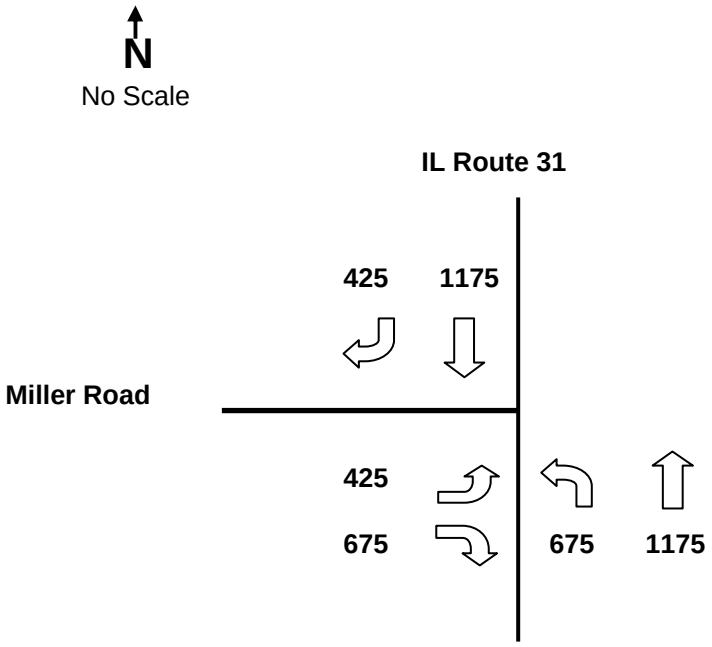


Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

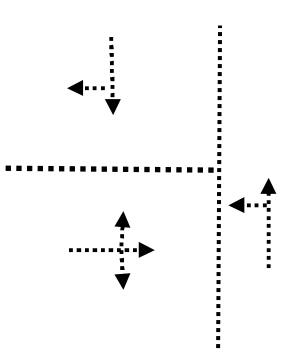
Traffic Control: Assume Traffic Signals



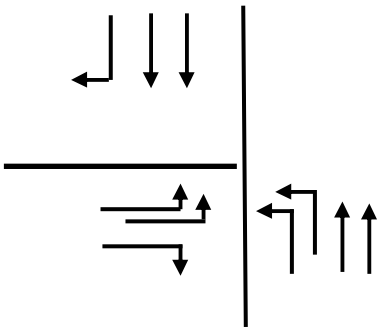
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L2

Miller Road @ IL Route 31



Existing Lane Configuration
Source: Field Observation

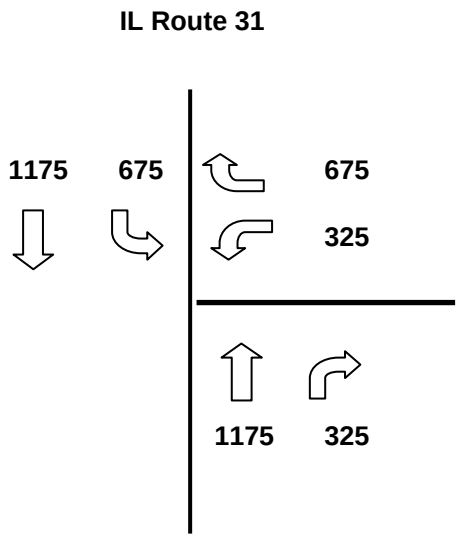


Lane Requirements under the Projected Traffic with a New Bridge Crossing

Traffic Control: Assume Traffic Signals

N

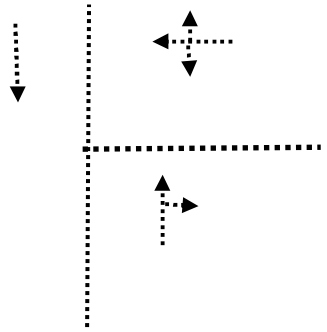
No Scale



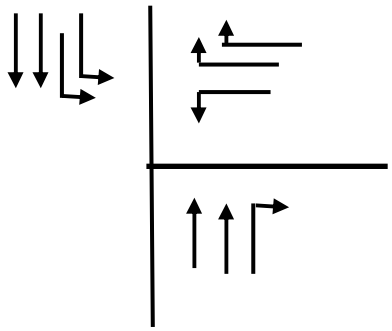
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L3

IL Route 31 @ Lincoln-Williams Street Extension



Existing Lane Configuration
Source: Field Observation



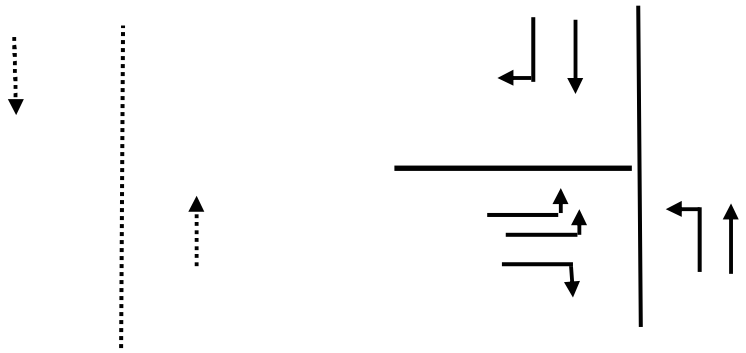
Lane Requirements under the Projected Traffic with a New Bridge Crossing

Traffic Control: Assume Traffic Signals

Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L4

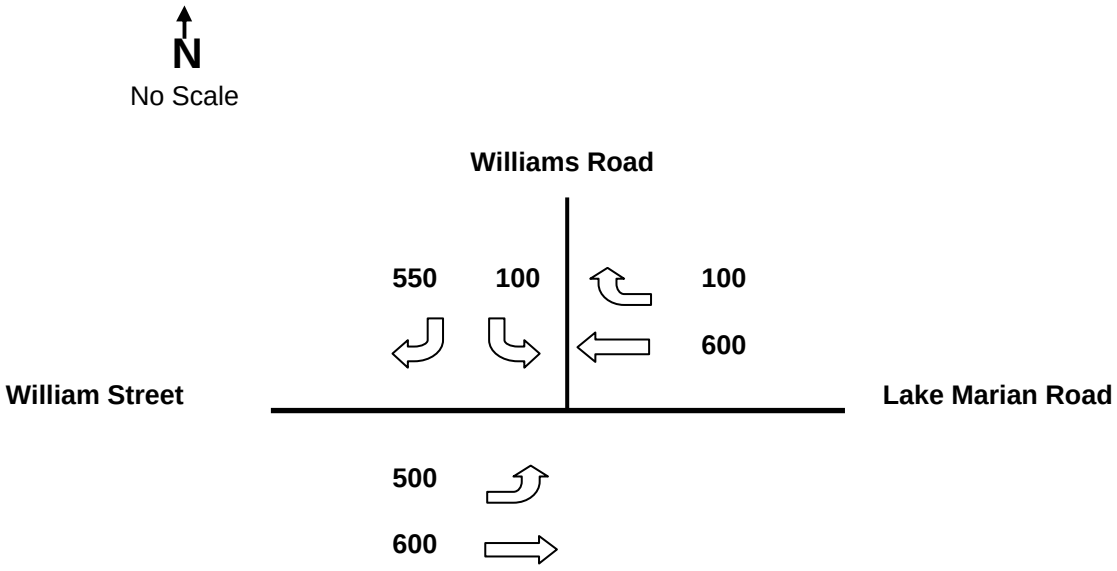
Williams Street @ Lincoln-Williams Extension



Existing Lane Configuration
Source: Field Observation

Lane Requirements under the Projected Traffic with a New Bridge Crossing

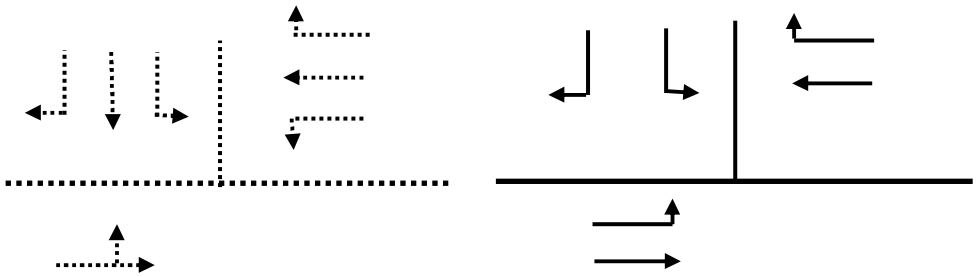
Traffic Control: Assume Traffic Signals



Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L5

Williams Road @ Lake Marian Road



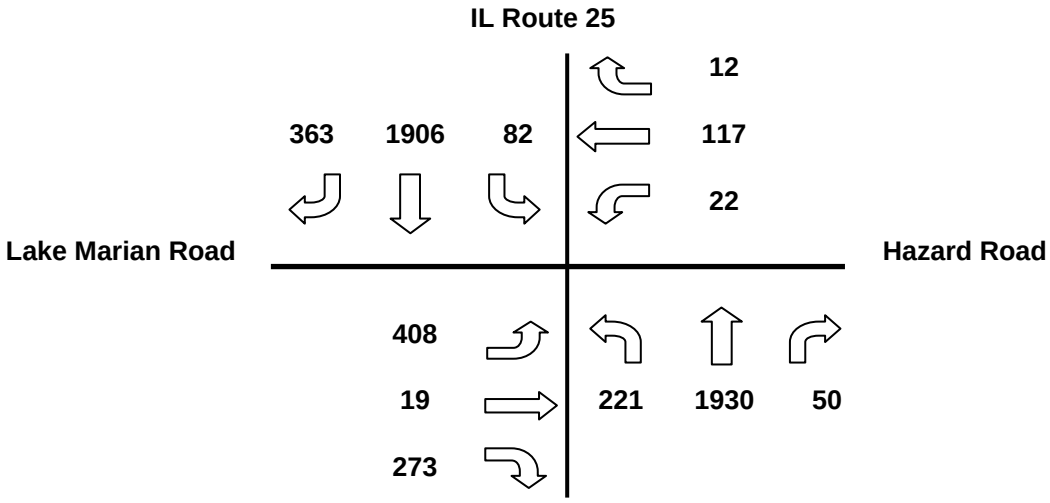
Existing Lane Configuration
Source: Field Observation

Lane Requirements under the Projected Traffic with a New Bridge Crossing

Traffic Control: Assume Traffic Signals

N

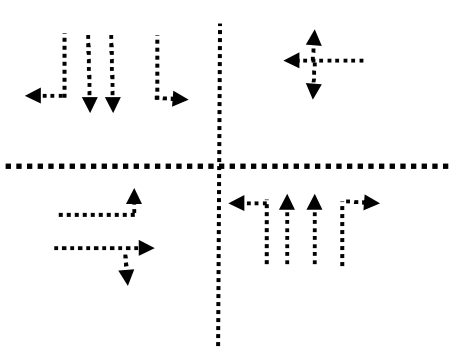
No Scale



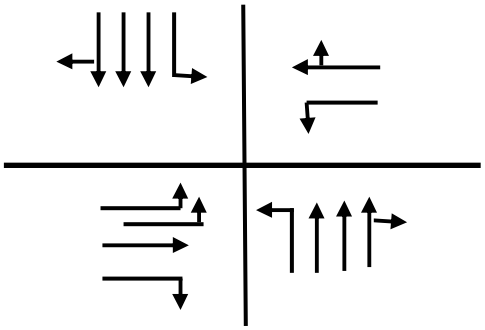
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L6

Lake Marian Road @ IL Route 25

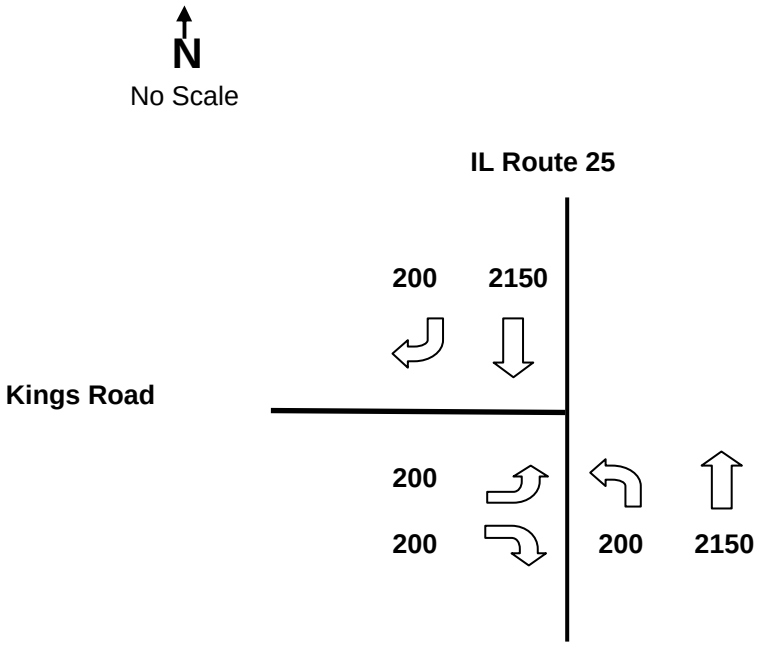


Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

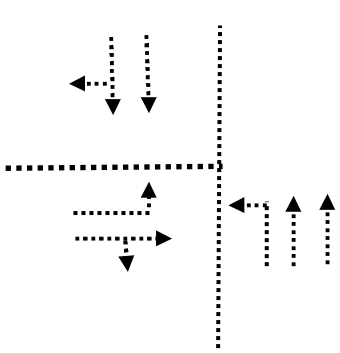
Traffic Control: Assume Traffic Signals



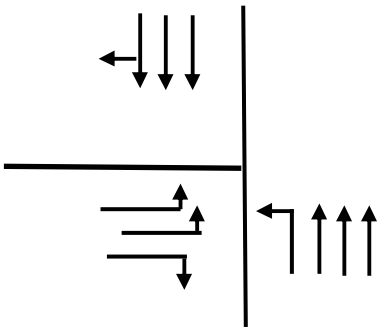
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L7

IL Route 25 @ Kings Road



Existing Lane Configuration
Source: Field Observation

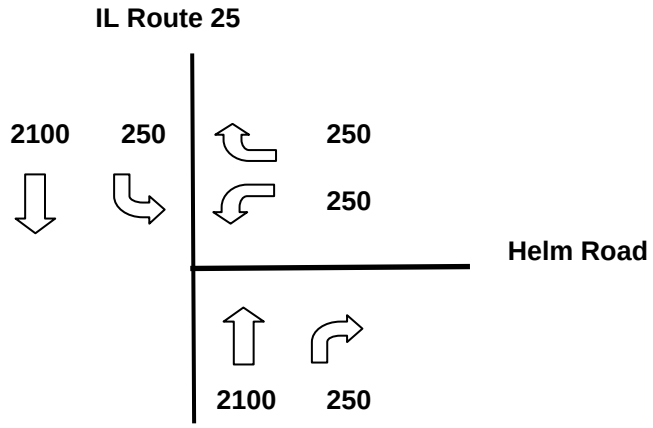


Lane Requirements under the Projected Traffic with a New Bridge Crossing

Traffic Control: Assume Traffic Signals

N

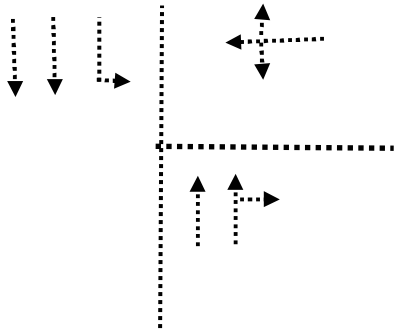
No Scale



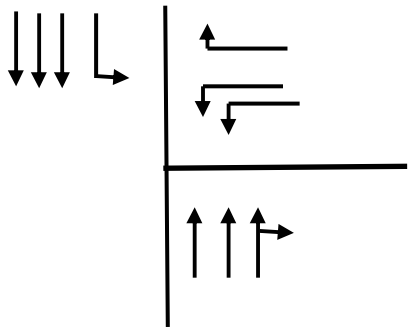
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L8

IL Route 25 @ Helm Road

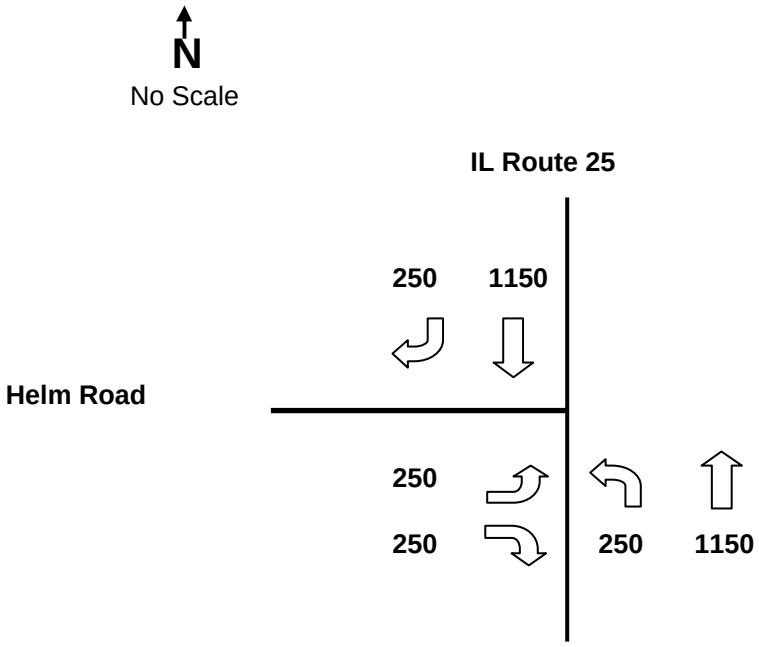


Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

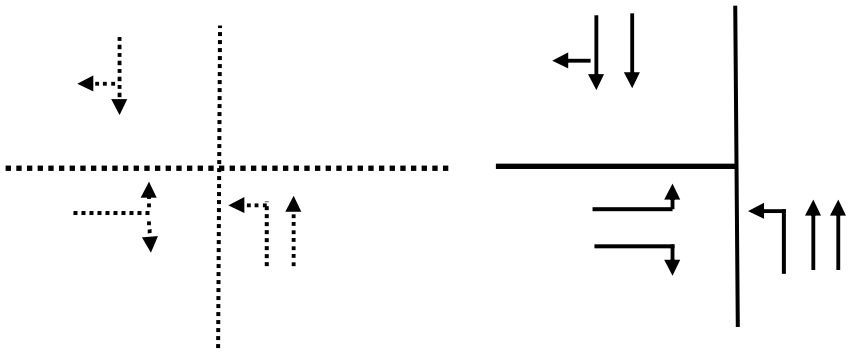
Traffic Control: Assume Traffic Signals



Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>L9

IL Route 62 @ Helm Road



Existing Lane Configuration
Source: Field Observation

Lane Requirements under the Projected Traffic with a New Bridge Crossing

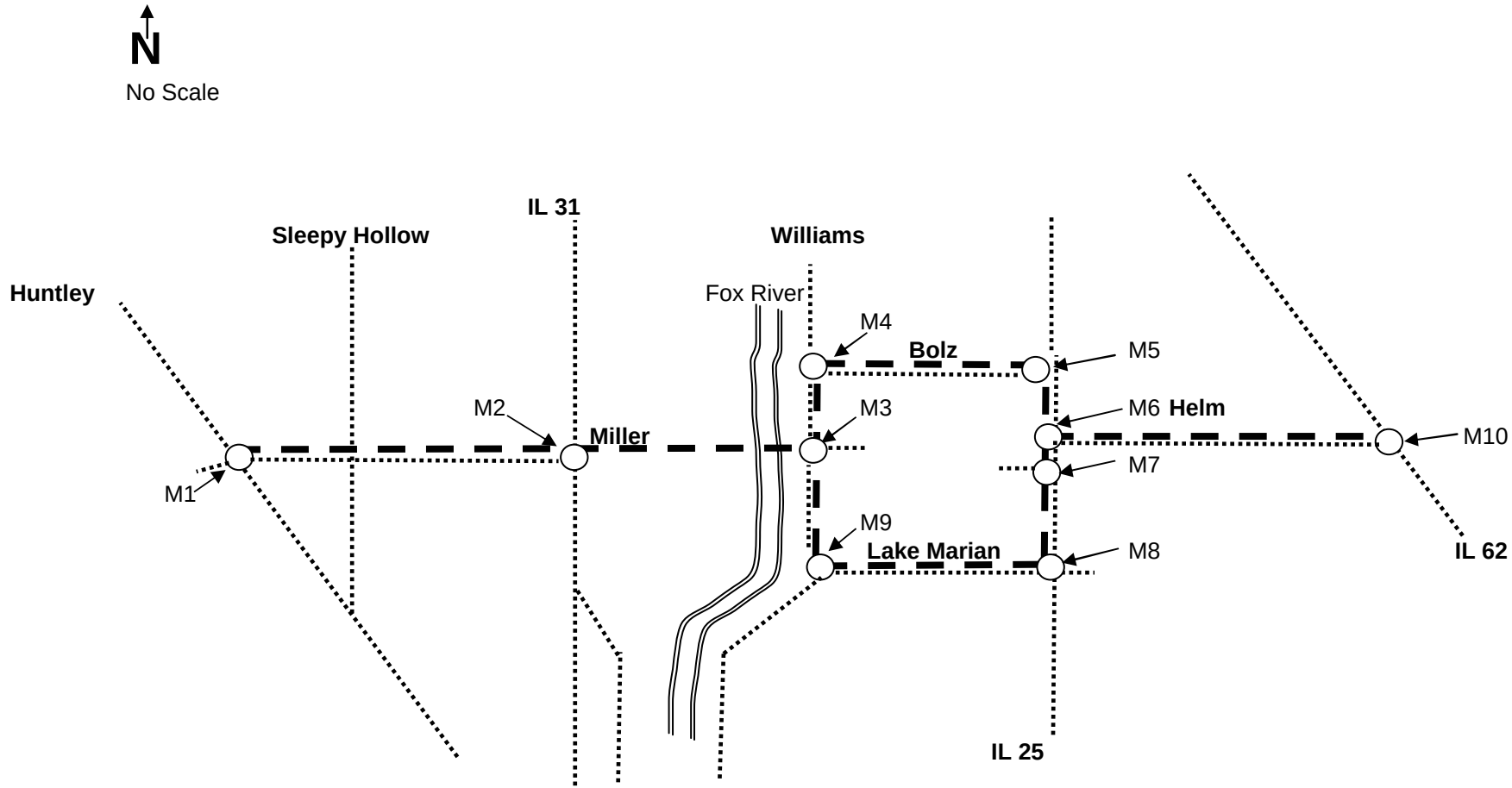
Traffic Control: Assume Traffic Signals

Exhibit 7B

Miller Corridor

List of Sections

1. Intersection - Node Map (10 Nodes)
2. ADT (also see Section 7 of the report body)
3. a. 2030 Peak Hour Volumes
   b. Existing Lane Configuration at each Node and Lane Requirements under a New Bridge in order to provide Level of Service "C"



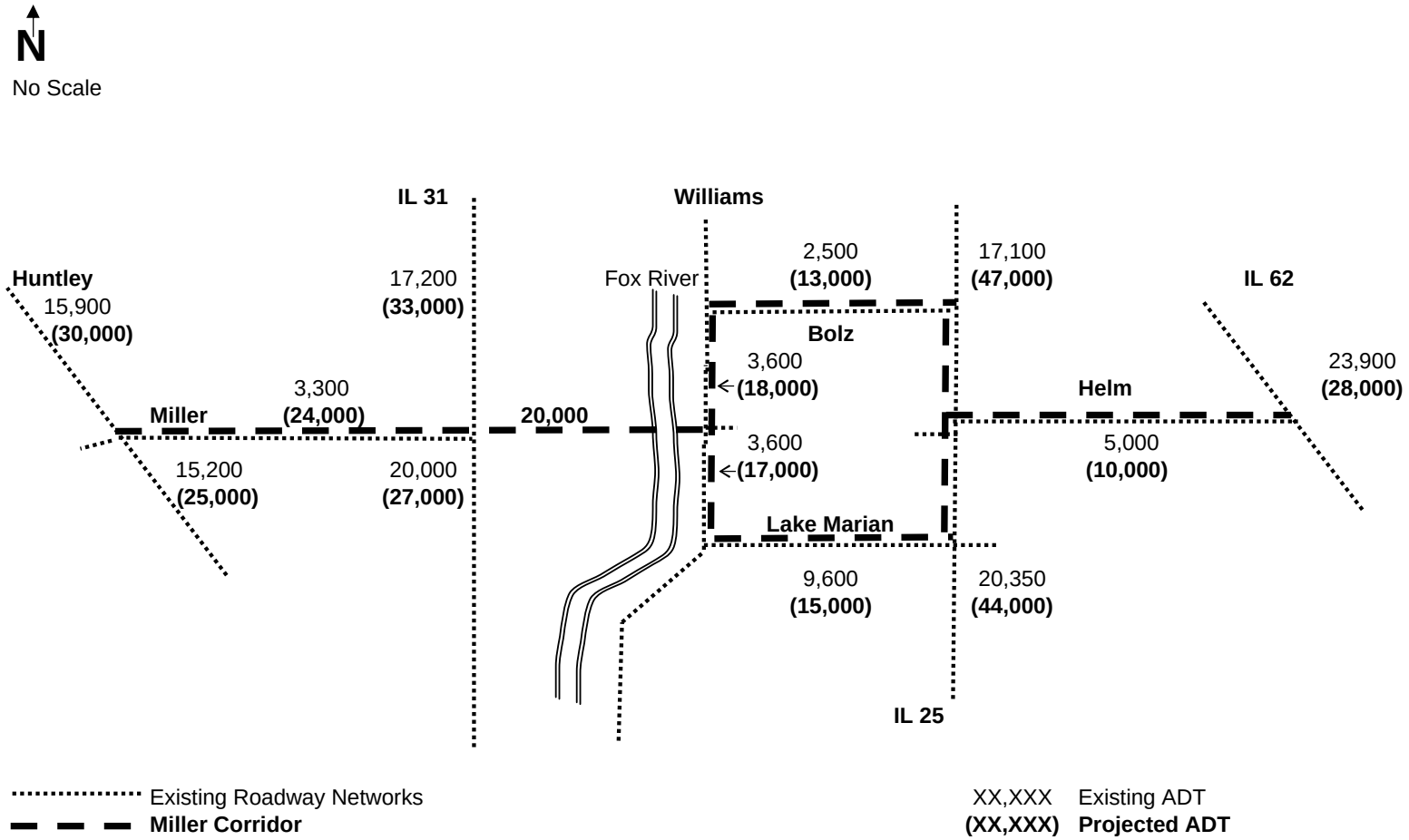
Miller Corridor

Intersection-Node Map

Bridge Corridor Study at the Fox River

Teng

October 2004

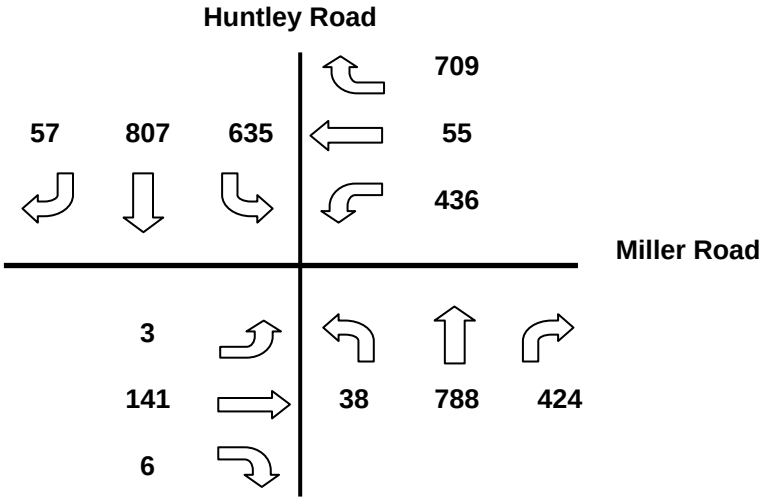


Miller Corridor

Existing & Projected 2030 Average Daily Traffic (ADT)

N

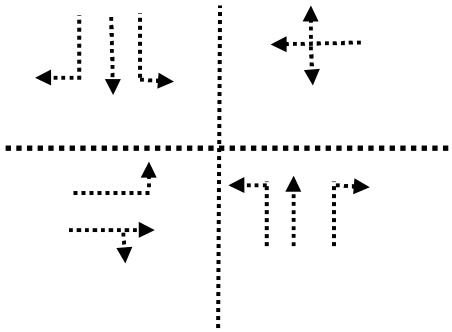
No Scale



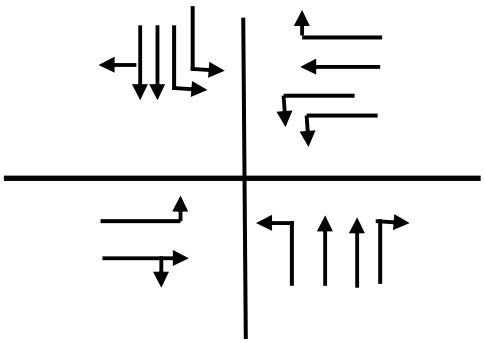
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M1

Miller Road @ Huntley Road



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

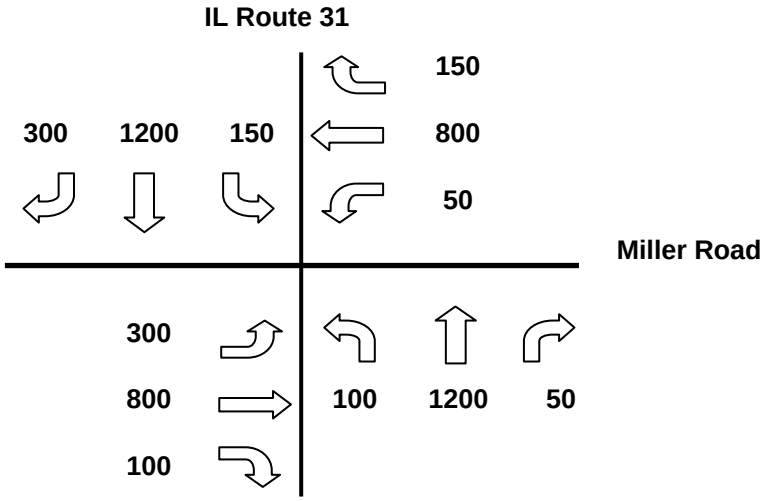
Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

N

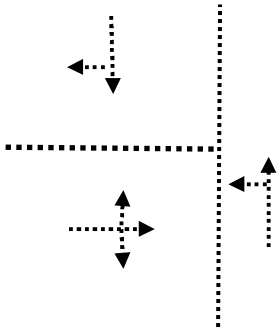
No Scale



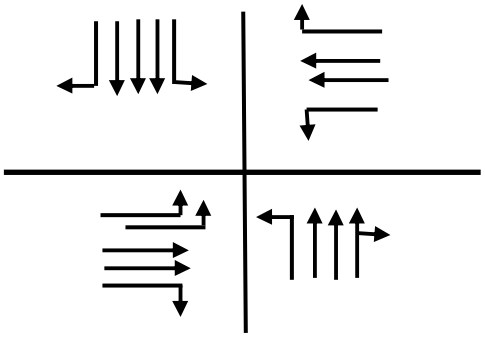
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M2

Miller Road @ IL Route 31



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

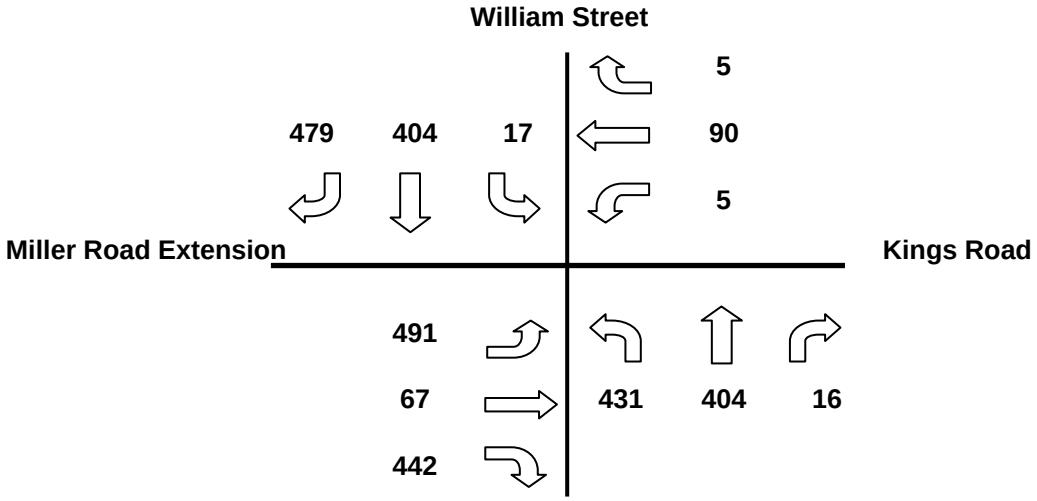
Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

N

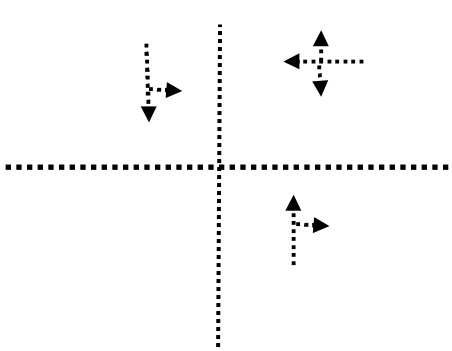
No Scale



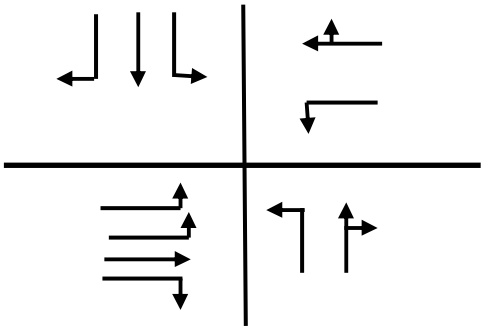
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M3

Miller - Kings Road @ William Street



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

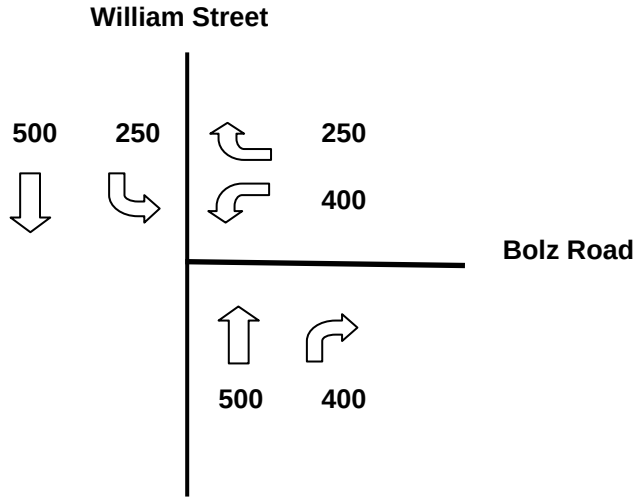
Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

N

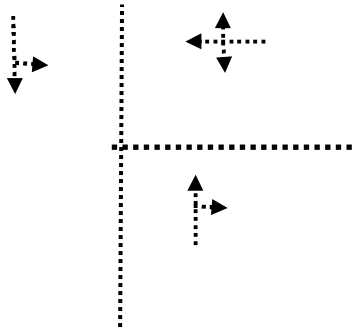
No Scale



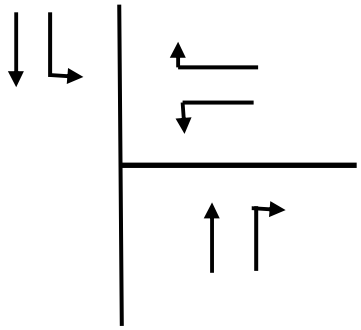
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M4

William Street @ Bolz Road



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

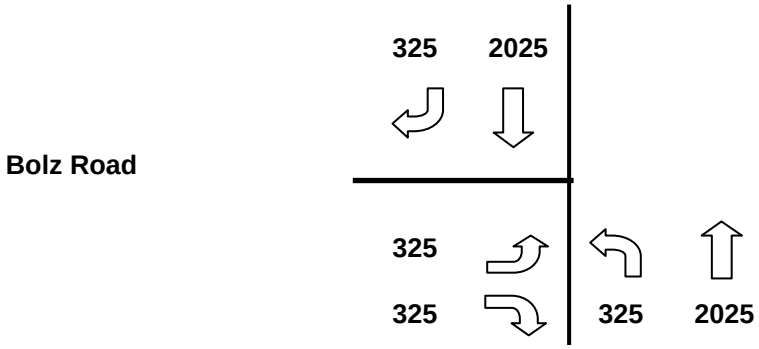
Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

N

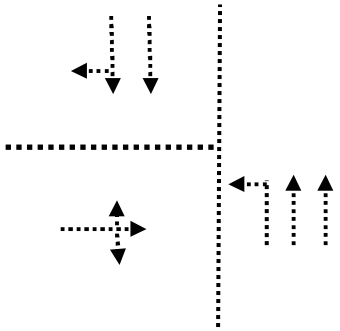
No Scale



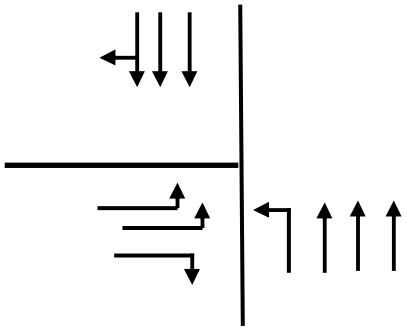
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M5

Bolz Road @ IL Route 25



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

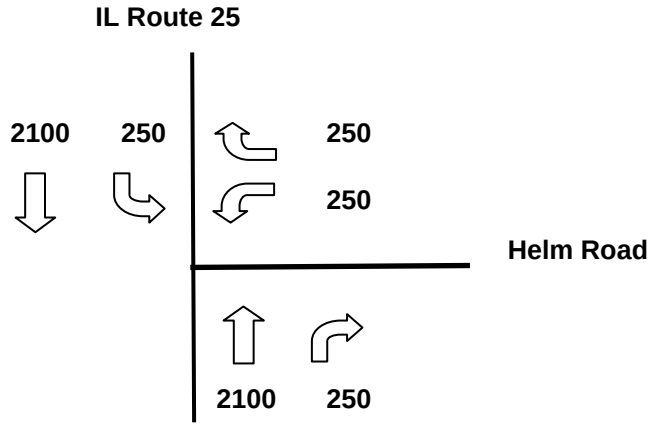
Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

N

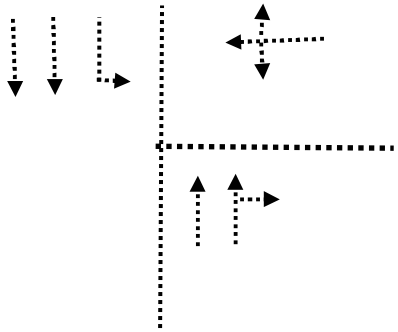
No Scale



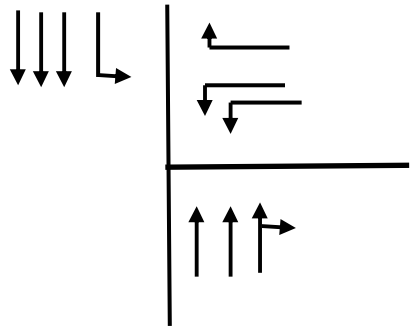
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M6

IL Route 25 @ Helm Road



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

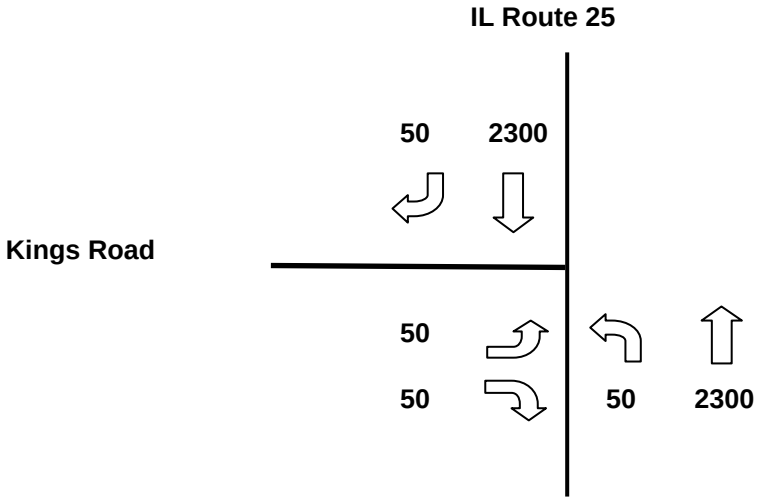
Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

N

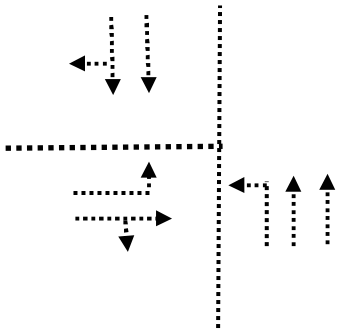
No Scale



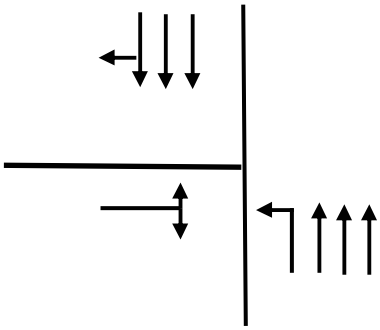
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M7

IL Route 25 @ Kings Road



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

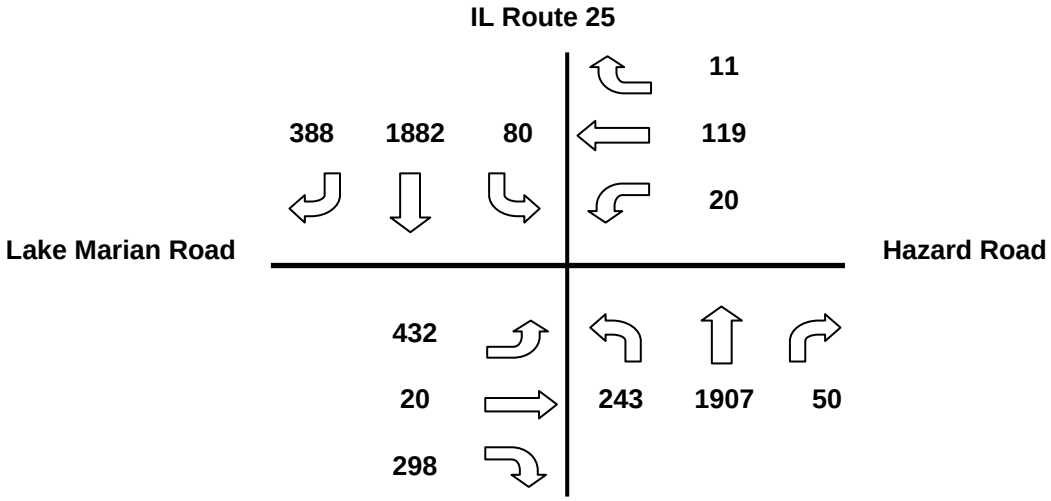
Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

N

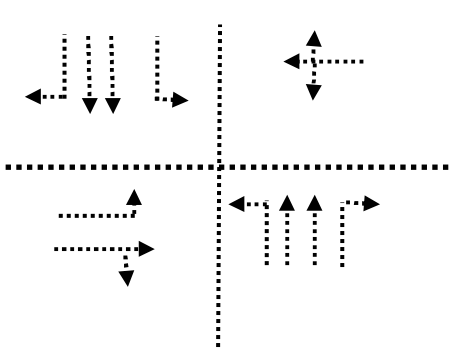
No Scale



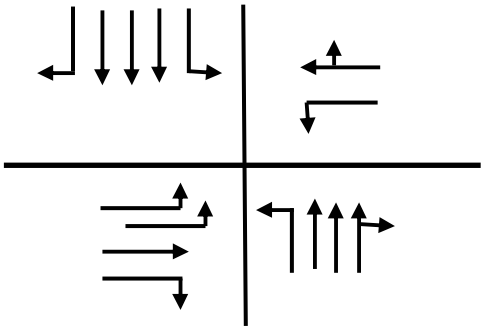
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M8

Lake Marian Road @ IL Route 25



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

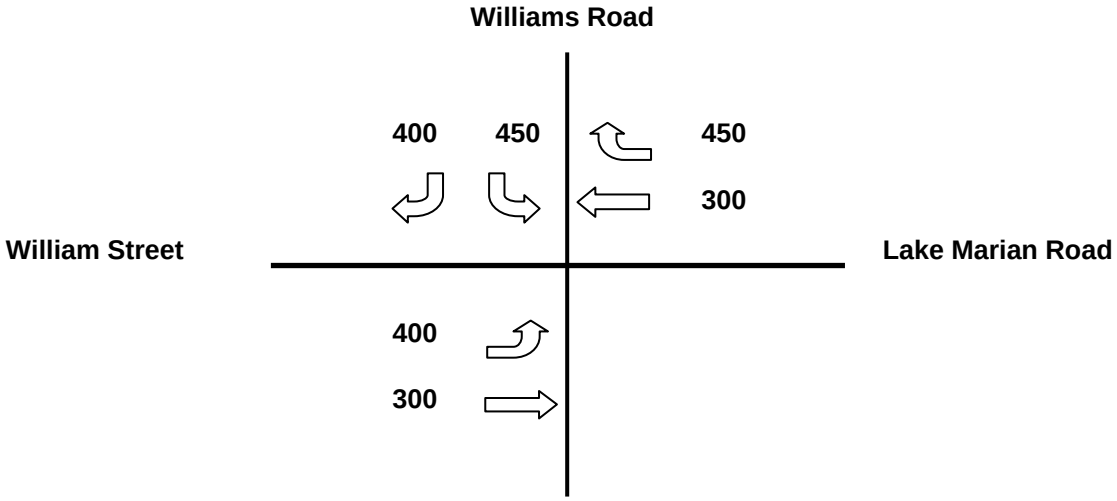
Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

N

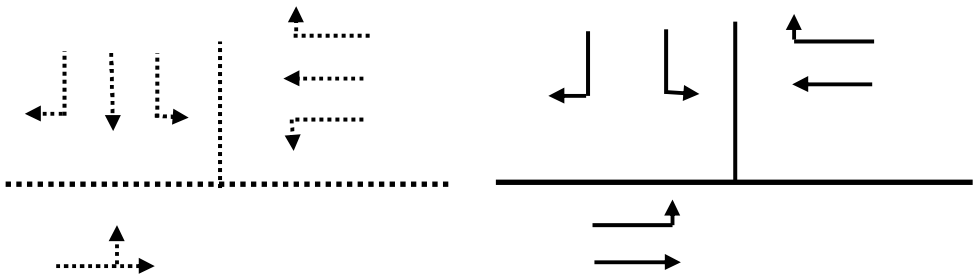
No Scale



Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M9

Williams Road @ Lake Marian Road



Existing Lane Configuration
Source: Field Observation

Lane Requirements under the Projected Traffic with a New Bridge Crossing

Traffic Control: Assume Traffic Signals

Miller Corridor

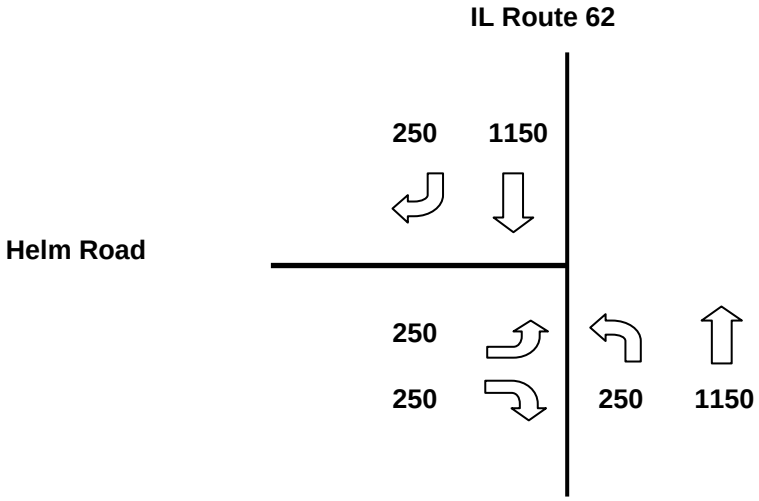
Bridge Corridor Study at The Fox River

Teng

October 2004

N

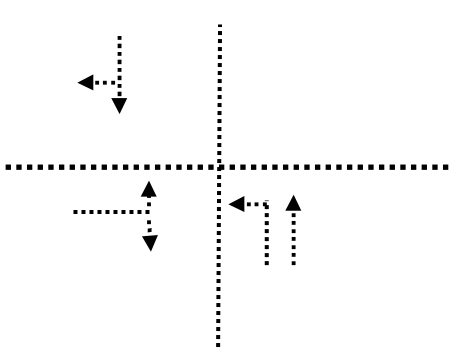
No Scale



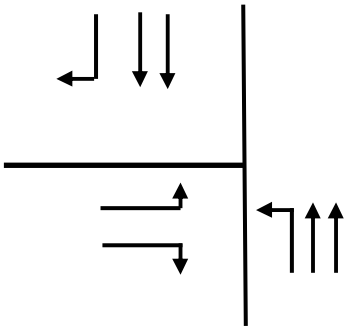
Projected 2030 Traffic
Balanced Peak Hour Volume

Intersection Node # ==>M10

IL Route 62 @ Helm Road



Existing Lane Configuration
Source: Field Observation



Lane Requirements under the Projected Traffic with a New Bridge Crossing

Traffic Control: Assume Traffic Signals

Miller Corridor

Bridge Corridor Study at The Fox River

APPENDIX A

MEETING MINUTES

DATE: April 20, 2004

xc: Participants
F/203/02-3446-01

DATE OF MEETING: April 14, 2004

MEETING HELD AT: Village of Carpentersville

REGARDING:
(Teng Project No. 02-3446-01)

PARTICIPANTS:

Carpentersville	Kane County	Teng
Craig Anderson	Tom Rickert	Yong Kim
Cindy McCammack		Chris Hassert

The purpose of this meeting was to brief the Village of Carpentersville on the progress of the Draft Corridor Study for a potential Bridge crossing over the Fox River in the Carpentersville region of Kane County. It was also the intent of this meeting to solicit feedback from Village Staff concerning the items presented.

PROJECT INTRODUCTION:

- Teng began by introducing the project from the perspective that there are two Corridors being studied, with two separate alternatives being developed for each Corridor. The Corridors were selected after considering environmental and physical constraints.

LINCOLN (SOUTH) CORRIDOR:

- The first Corridor introduced was the Lincoln Corridor.

- As part of the Lincoln Corridor two alignments were studied. The first alignment proposes a bridge crossing from Williams Road east of the river to Lincoln Avenue west of the river forming a T-intersection between Lincoln and the new bridge corridor. From the T-intersection, the portion of Lincoln running northwest to Route 31 would be realigned to correct an undesirable approach angle currently existing at the Route 31-Lincoln intersection.

- The second alignment would also begin east of the river at Williams and follow the same alignment west, except the profile would run much higher. The bridge would actually

cross well above Lincoln and connect directly to Route 31 forming a T-intersection. This second alignment also proposed realigning Lincoln.

- Kane County suggested that since the second alignment made no direct connection to Lincoln, the Lincoln realignment could be eliminated from this alternative to give two similar but distinctly different design approaches for this Corridor.

- The rest of the group concurred and Teng agreed to drop the Lincoln realignment from the second alternative.

GENERAL DISCUSSION:

- The Village asked if Teng was taking into consideration traffic numbers as part of this bridge corridor study. Teng confirmed that traffic modeling was currently in progress. Teng added that 2030 traffic projections are being used in the modeling.

- Kane County mentioned that they would like to see the Draft Report by the upcoming County Board meeting scheduled for April 23rd. Teng agreed that this date was attainable for a Draft Report Submittal.

- Kane County anticipated a late May Final Report Submittal but this may hinge on a potential Public Participation Meeting. The County hasn't confirmed that it will hold a Public Meeting, but added that this would be a logical step in the process. The County expressed concerns that this Study could be seen by the Public to serve as a replacement to Longmeadow Parkway, but this is not the case.

MILLER (NORTH) CORRIDOR:

- This selected corridor is situated approximately ½ mi. to ¾ mi. south of the proposed Long Meadow Parkway alignment.

- Both of the alignments selected begin at the existing T-intersection of Miller Road and Route 31. The new alignments would create a four-way intersection at this location.

- Both alignments will travel a similar path approximately one mile through agricultural land before diverging and connecting at two separate locations on the east side of the Fox River.

- The first alternative will connect at the T-intersection of Kings Road and Williams Road. The introduction of the new alignment would create a four-way intersection at this location. Teng explained that this alternative gives the best traffic distribution out of all four alignments since four-way intersections are developed at both the east and west ends of the alignment.

- The second alternative would run slightly north of the first alternative and connect into Williams forming a T-intersection approximately 0.20 miles north of Kings Road.
- It was noted that the Miller Road Corridors are both substantially longer than the Lincoln Corridors, since Route 31 begins to diverge away from the Fox River north of Lincoln.

QUESTIONS & COMMENTS:

- The Village commented that they were aware of local opposition to any proposed Lincoln Corridor alternatives, as the public perceives this alternative as generating more traffic in this area of Town.

- The Village indicated they had no further comments at this time concerning what was presented to them.

- Teng concluded by asking the Village to feel free to follow up this meeting with any questions that may arise. Teng also reiterated the point that this Study is investigating possible bridge corridors to supplement Longmeadow Parkway, and not intended to replace Longmeadow Parkway as directed by the County Board.

The foregoing is the writer's understanding of the matters discussed and the conclusions reached in summary form. This will become part of the project record and is the basis upon which we will proceed. Concurrence is presumed unless prompt notice of additions or corrections is received by the writer.

Sincerely,

TENG & ASSOCIATES, INC.

Chris Hassert, PE.
Senior Civil Engineer

APPENDIX B

April 9, 2004

John Pribich
Program Manager, Public Relocation
ComEd
Three Lincoln Center
Fourth Floor
Oakbrook Terrace, IL 60181-4260

Re: Fox River Bridge Crossing Feasibility Study
Teng Job No.: 02344601

Dear Mr. Pribich:

Teng and Associates, Inc. is assisting Kane County Division of Transportation in conducting a feasibility study concerning the addition of a bridge across the Fox River in the vicinity of Carpentersville.

We are requesting that you confirm to us any facilities that your company might have in the alignment corridors. To assist in your evaluation we are enclosing a location map.

Your prompt attention to this matter is greatly appreciated. If you need any further assistance please feel free to contact me via telephone at 312.616.5079 or via email at vanhoutenam@teng.com.

Best Regards,

TENG & ASSOCIATES, INC.

Anna Van Houten, E.I.T.
Project Engineer

xc: C. Hassert
File

Attachments: Location Map

s:\document\02344601\common\doc\letter comed 04-06-04.doc\edr

April 9, 2004

Scott Stogsdill
Nicor Gas
1844 Ferry Road
Naperville, Illinois 60563

Re: Fox River Bridge Crossing Feasibility Study
Teng Job No.: 02344601

Dear Mr. Stogsdill:

Teng and Associates, Inc. is assisting Kane County Division of Transportation in conducting a feasibility study concerning the addition of a bridge across the Fox River in the vicinity of Carpentersville.

We are requesting that you confirm to us any facilities that your company might have in the alignment corridors. To assist in your evaluation we are enclosing a location map.

Your prompt attention to this matter is greatly appreciated. If you need any further assistance please feel free to contact me via telephone at 312.616.5079 or via email at vanhoutenam@teng.com.

Best Regards,

TENG & ASSOCIATES, INC.

Anna Van Houten, E.I.T.
Project Engineer

xc: C. Hassert
File

Attachments: Location Map

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April 9, 2004

Pam Astle
Permit Manager
SBC
225 West Randolph Street
Floor 11
Chicago, IL 60606

Re: Fox River Bridge Crossing Feasibility Study
Teng Job No.: 02344601

Dear Ms. Astle:

Teng and Associates, Inc. is assisting Kane County Division of Transportation in conducting a feasibility study concerning the addition of a bridge across the Fox River in the vicinity of Carpentersville.

We are requesting that you confirm to us any facilities that your company might have in the alignment corridors. To assist in your evaluation we are enclosing a location map.

Your prompt attention to this matter is greatly appreciated. If you need any further assistance please feel free to contact me via telephone at 312.616.5079 or via email at vanhoutenam@teng.com.

Best Regards,

TENG & ASSOCIATES, INC.

Anna Van Houten, E.I.T.
Project Engineer

xc: C. Hassert
File

Attachments: Location Map

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TECHNICAL MEMORANDUM CH2MHILL

Northern Fox River Bridge Crossing Study

Appendix C

PREPARED FOR: Tom Rickert, KCDOT

PREPARED BY: CH2M HILL

DATE: May 11, 2004

Introduction

The forecasted 2030 traffic volumes that are shown on the attached exhibits were developed from the Kane County travel demand model using the 2030 socioeconomic forecasts and existing and committed network (as of prior TIP – FY 2004 - 2008) – this is refereed to as the "future base condition."

Several options were run in the travel demand model to evaluate the potential diversion of traffic (in 2030) on the proposed new river crossings along the northern area of the Fox River.

The first step in the process was to examine whether the capacity restrained assignment was reducing the amount of traffic that would cross the Fox River within the study that included the following river crossings (Algonquin Road/IL 62, Main Street, Higgins Road/IL 72, and I-90) to an all-or-nothing assignment routine. The result of this analysis indicated that the capacity restrained assignment routine had little effect in reducing the amount of traffic across the Fox River. There was an increase in traffic volume on I-90, but this was a result of the traffic diversion from existing river crossings, south of I-90. The conclusion drawn from this analysis suggested that the total assigned volume (2030) for the previously mentioned river crossings would remain fairly constant with only the diversion of traffic between these river crossings that would be used in the determination of the forecasted traffic volumes for existing and the proposed crossings. In addition, no induced travel was assumed as part of this analysis.

Methodology

Option 1 – Longmeadow Parkway (only)

In the future base condition, the assigned 2030 traffic volume along the Longmeadow Parkway would be approximately 30,000 ADT. To further evaluate the potential divertable traffic volume to the proposed 4-lane river crossing, a select link analysis was conducted of the trips that would use the new facility. This analysis yielded that some of the traffic from the existing river crossing (IL 62, Main St., and IL 72), in and above the assigned volumes would be divertable to the Longmeadow Parkway. The additional traffic was determined to be 5,000 ADT. Refer to exhibit – Option 1 for the proposed traffic volumes on the Longmeadow Parkway and the existing river crossing.

To verify these results, a comparison was made to the CATS 2020 forecasted volumes for the Longmeadow Parkway. The forecast for this analysis seemed consistent with the prior 2020

forecast by CATS being within a 2 percent compounded growth rate for the period between 2020 and 2030.

The determination of the proposed 2030 traffic along the Longmeadow Parkway was essential to the development of the forecasted volumes for the Miller Road and Williams Road proposed river crossings. For each option, a 2-lane cross section was assumed for the river crossing.

Option 2 - Proposed Miller Road river crossing

As shown in the exhibit - Option 2, a set of 2030 forecasted ADTs are shown based on if the Miller Road river crossing would be added with no other changes to the traffic network. While the actual modeled volume for the proposed facility was approximately 10,000 ADT, it was determined that an additional 10,000 ADT for a total of 20,000 ADT would be forecasted along this crossing. The additional traffic was determined by evaluating a select link assignment of this proposed facility.

The forecasted traffic volumes on the surrounding facilities were completed by carrying the diverted traffic throughout the study area to the predefined logical termini for the corridor study.

Option 3 - Proposed Williams Road river crossing

As shown in the exhibit - Option 3, a set of 2030 forecasted ADTs are shown based on if the Williams Road river crossing would be added with no other changes to the traffic network. While the actual modeled volume for the proposed facility was approximately 10,000 ADT, a similar amount of additional traffic was determined to be divertable to the proposed new river crossing. An ADT of approximately 20,000 was projected for this facility. A select link analysis of the proposed facility was used to assist in the determination of the projected traffic volume.

The forecasted traffic volumes on the surrounding facilities were completed by carrying the diverted traffic throughout the study area to the predefined logical termini for the corridor study.

Combination of the proposed river crossings

A general assessment was made if the Longmeadow Parkway was constructed in addition to either the Miller Road or Williams Road proposed river crossing. As shown on the exhibits the total volume served by either combination would be approximately 55,000 ADT. A determination of the actual distribution of future traffic volumes across the river crossings for either option is too difficult to ascertain from the traffic model. Although, qualitatively, I would comment that the proposed traffic volumes across the existing and proposed may balance out a bit more depending on the trip patterns.