KANE COUNTY DIVISION OF TRANSPORTATION
FOX RIVER BRIDGES
CC&P/STEARNS ROAD CORRIDOR

CONSERVATION PLAN FOR
The
THREATENED SLIPPERSHELL MUSSEL
(*ALASMIDONTA VIRIDIS*)
As part of an Incidental Take Authorization Permit

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LaGrange, Illinois

November 14, 2005

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As part of an Incidental Take Authorization Permit

1. INTRODUCTION

On July 25, 2005, the Illinois Department of Natural Resources (IDNR) notified Kane County DOT that the state protected slippershell mussel (*Alasmidonta viridis*) was recently identified in the East Branch of Brewster Creek approximately 0.5 miles upstream of proposed CC&P/Stearns Road Corridor and the Dunham Road culvert replacement portion of the project. In an August 19, 2005 letter the IDNR indicated that the Incidental Take Committee recommended that an Incidental Take Authorization for the CC&P/Stearns Road Project be considered. The IDNR correspondence is available in Appendix A.

The Kane County Division of Transportation (KCDOT) is proposing the widening and extension of Stearns Road from east of the Kane-DuPage County west to Randall Road (CC&P/Stearns Road Corridor project). This proposed project includes the new bridge over the Fox River and numerous other smaller bridges over Fox River tributaries including Brewster Creek and the East Branch of Brewster Creek. Also included are cross-road improvements along Illinois Route 25, Dunham Road, Gilbert Road, McLean Boulevard (and Illinois Route 31 at McLean Boulevard), Umbdenstock Road, McDonald Road, and Randall Road. This project was the subject of a Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) completed in 2002. The ROD is provided in Appendix B.

The KCDOT is in the final stages of the Phase 1 design of the CC&P/Stearns Road Corridor project and will be seeking Design Approval through IDOT. Design Approval is anticipated for April 2006, at which time the project will proceed to Phase 2 Design Plans and specifications. Concurrent to this submittal will be the submittal of the Joint Application to the regulatory agencies for impacts to wetlands. Prior to the submittal of the Joint Application, KCDOT is updating information that is required under the Section 404 (b) (1) guidelines.

It is anticipated that the project will be processed as an Individual Section 404 Permit, giving an additional opportunity for comment during the Public Notice period. As the EIS was completed approximately four years ago, KCDOT is in the process of updating information in anticipation of the permit submittal. Attached with this plan is a project location map of the proposed CC&P/Stearns Road Corridor project (Figure on Exhibit 1).

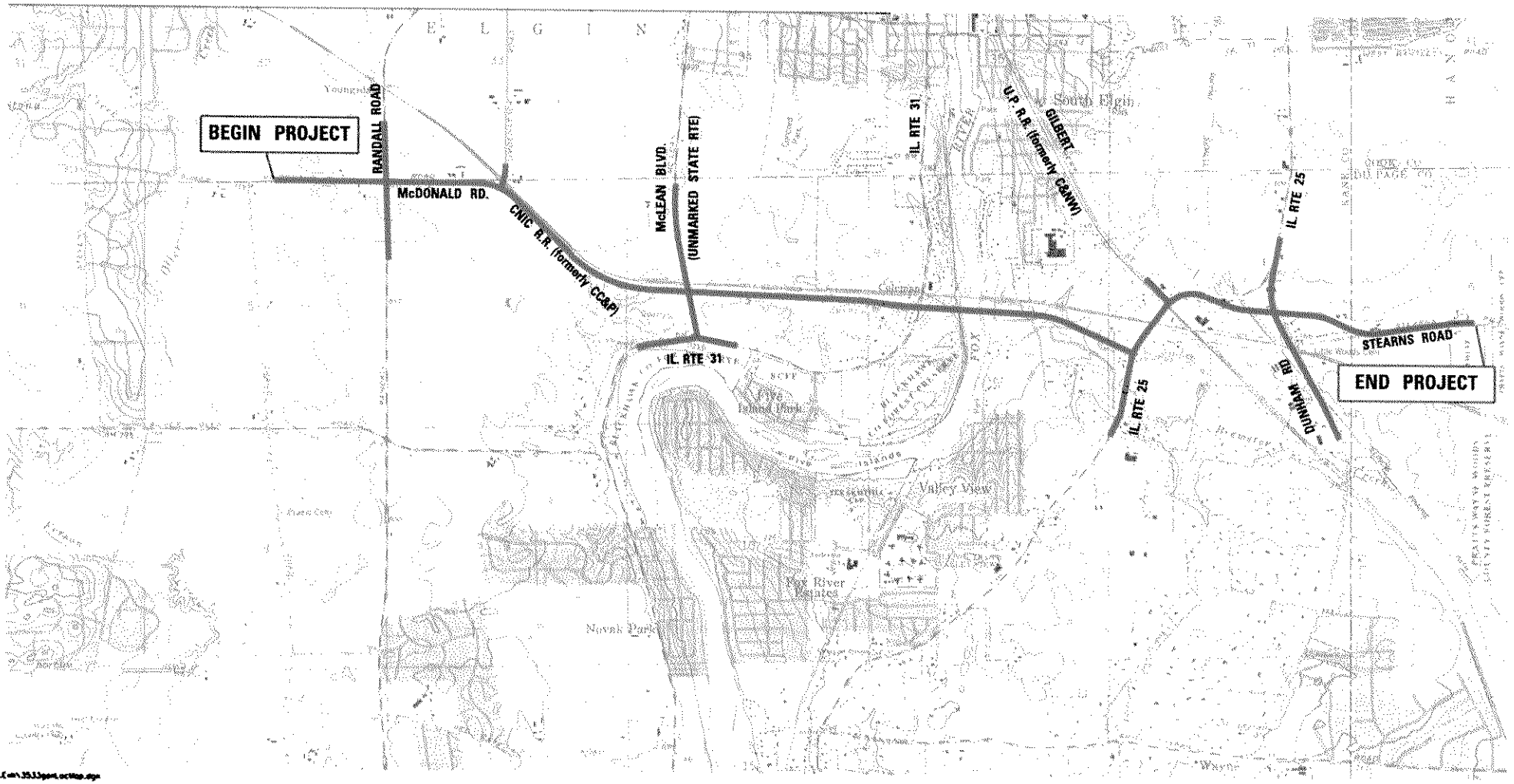
It should be noted, that based on reviews by IDOT, proposed improvements along sections of Illinois Route 25, McLean Boulevard, and Randall Road have been extended since the completion of the EIS (Figure 1).

As part of this project, the existing concrete box culvert for the East Branch of Brewster Creek at Dunham Road will be replaced with a bridge. Brewster Creek is a tributary of the Fox River with a watershed covering approximately 18 square miles. The IDNR conducted a Biological Survey upstream of this location in 1998. The habitat found in this area was rated as "Good" with an Index of Biotic Integrity (IBI) score of 32 and a Macroinvertebrate Biotic Index (MBI) score of 4.7. The East Branch of Brewster Creek in the project area is approximately eight to ten feet wide with a 20 foot top of bank channel width. Banks are typically vertical and one to three feet high.

The new bridge over the East Branch of Brewster Creek will be designed to span the creek to avoid direct impacts. The primary construction will be removal of the existing culvert and new bridge construction. The project area for the new bridge will be 100 feet upstream of Dunham Road and 150 feet downstream of Dunham Road for a total of 250 linear feet along Brewster Creek. The project will require the temporary displacement of the East Branch of Brewster Creek during culvert removal and bridge replacement. The stream will either be placed into a flume pipe or a temporary channel to the south during construction.

As part of the Fox River Bridge Crossings EIS - ROD, the applicant agreed to conduct mussel surveys and relocations in streams crossed by the project. The project also crosses Brewster Creek near the Fox River (west of Dunham Road) and the Fox River. If present, the state threatened slippershell mussel is most likely located at the upstream portions of the East Branch of Brewster Creek as indicated in the August 19, 2005 letter from the IDNR. Preconstruction surveys will be undertaken in the East Branch of Brewster Creek near Dunham Road and live mussels encountered will be relocated to appropriate upstream sites most likely within Tri-County State Park. Any State protected mussels including the slippershell found will be relocated to appropriate habitat per state standards for relocation in all streams surveyed in the project area.

The applicant is applying for an Incidental Take Authorization (ITA) from the IDNR for threatened and endangered mussels that may be encountered during the mussel relocation in order to avoid project delays. Consequently, the Applicant is submitting this Conservation Plan (pursuant to the Illinois Administrative Code, Title 17, Part 1080.10) in application for authorization for the incidental take of endangered or threatened mussels encountered during the preconstruction surveys, mussel relocation, and project construction.



LEGEND

PROPOSED IMPROVEMENT

SCALE IN FEET

SOURCES:

BASE MAP – USGS QUADS, GENEVA QUADRANGLE

GENERAL LOCATION MAP

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2. DESCRIPTION OF POTENTIAL IMPACT

The project includes several crossings of portions of Brewster Creek. However, the only location of proposed instream work is at the Dunham Road culvert replacement over the East Branch of Brewster Creek located approximately 0.5 miles downstream of the known slippershell location. Appendix C provides preliminary details of the bridge design.

The State threatened slippershell mussel occurs from southern Ontario south to Alabama. The slippershell is a small mussel usually around one and one half inches in length. In Illinois, this species is found in creeks and the headwaters of large rivers in sand, mud, or fine gravel substrates. The slippershell is a bradytictic breeder and known fish hosts included banded sculpin, mottled sculpin, and Johnny darter. This species of mussel prefers clear, clean water/substrates (sand, fine gravel, mud) and can be adversely affected by siltation and water quality.

Project related effects to state-listed mussel species are expected to be minimal if any. The EIS recommended the replacement of the Dunham Road culvert with a bridge to facilitate the movement of aquatic organisms and provide a natural substrate. Upon completion, there will be no structures in the water at this crossing.

During the mussel survey of the Tri County State Park property, state protected mussels were found 0.5 miles upstream of the culvert replacement at Dunham Road. If the species is present within the project area and the mitigation measures described in "Conservation Measures" are not employed, any state-listed species present could be impacted directly or indirectly in the 250 foot segment of the East Branch of Brewster Creek within the project area. During culvert removal and bridge construction, construction equipment and temporary stream relocation could cause mussels to be subjected to desiccation, direct physical damage, or mortality. Without the measures employed in Conservation Measures, temporary changes in water quality may occur from sedimentation and subsequent turbidity affecting mussels in close proximity downstream of the construction area. With the proper best management practices in place, it is anticipated that no impacts would occur to the stream and aquatic organisms (including mussels) further than 150 feet downstream of the East Branch of Brewster Creek construction zone.

3. CONSERVATION MEASURES

The proposed conservation measures for this project include mussel surveys at all stream crossings in the project area as specified by the EIS ROD. The applicant further proposes to relocate all live non-invasive mussels to appropriate upstream habitats. At the East Branch of Brewster Creek crossing at Dunham Road, the survey will be designed to locate all potential mussel species focusing on the slippershell mussel.

The Applicant's consultants will survey the construction area at Dunham Road in the spring/summer of the construction year prior to the initiation of construction. The construction area at Dunham Road is approximately 250 feet (100 feet upstream and 150 feet downstream of the existing Dunham Road crossing). The applicant proposed to survey the entire construction zone and an additional 150 feet downstream of the construction zone. The surveys will be conducted using standard methodology including wading in shallow water and Scuba in deeper water, if necessary. All mussels (listed and non-listed species) found will be identified to species. The surveys will be conducted by a team of professionals and a state licensed malacological firm. The cost of this relocation has not yet been determined but will be funded by the Applicant. The Applicant has adequate funding to cover the mitigation measures proposed.

A set of relocation protocols will be developed for the site-specific conditions. The relocation team will have extensive experience in developing protocols for successful relocations. Mussels found in the construction area will be relocated to areas of suitable habitat upstream of the construction zone likely within protected stream habitats within the Tri-County State Park property. The relocation site will be located in the East Branch of Brewster Creek relatively close to the project site and contain similar or better water quality and substrate.

Upon completion of the survey, the Applicant will prepare a report detailing the methods and results of the mussel relocations. This report will include details on the number and species of mussels relocated. The report will also identify if state-listed species are relocated. No long-term monitoring of the relocation sites is planned.

To minimize the extent and duration of project-related disturbance to the East Branch of Brewster Creek and any potential for indirect impacts on mussels or mussel habitat, the Applicant will implement sediment control and construction management measures during construction. These measures may include use of fluming, coffer dams, silt fencing or other sediment control measures to limit downstream sedimentation during construction. The Illinois Environmental Protection Agency (IEPA) will issue the project a 401 Water Quality Certification with conditions requiring strict sedimentation control measures be followed. Erosion and sediment control during construction will comply with the Kane County Storm Water Ordinance. Erosion and Sediment Control Plans for each phase of construction will be reviewed by the Kane-DuPage County Soil & Water Conservation District. The construction at Dunham Road will take approximately six to eight months including staging. All mussels will be relocated from the construction zone and from an additional 150 feet of East Branch of Brewster Creek downstream of the construction zone.

4. ALTERNATIVES ANALYSIS

The purpose of this Fox River Bridges project is to provide for a series of transportation improvements to increase access across the Fox River. However, the provision of this access is not to be to the detriment of other quality of life issues in the Fox River Valley area. As such, the objectives of these improvements were developed with input from the Kane County Development Department. The objectives specified follow:

1) ***Enhance*** Kane County's transportation network by reducing congestion and providing alternate and more direct routes

2) ***Serve*** existing land use through efficient access to central business districts; public services; and employment and commercial centers

3) ***Serve*** proposed land use in conformance to Kane County's *2020 Land Resource Management Plan*, which encourages compact, contiguous growth in the eastern portion of the County and preserves the rural qualities of the western portion.

This Purpose and Need identified in the FEIS and the ROD was presented as part of Illinois' NEPA/404 Merger Process and concurrence from the involved resource agencies was reached.

Of the over twenty potential crossings identified by the Fox River Bridge Advisory Committee, only nine corridor crossings of the Fox River were determined as potentially satisfying the Purpose and Need for this project or were not being pursued by other agencies. Only these nine were to be evaluated during the Environmental Impact Statement (EIS). These nine corridor crossings were then screened for "fatal flaws" defined as unacceptable, immitigable impacts. Only five of the nine corridors survived this screening process. The CC&P/Stearns Road Corridor Project was one of the five recommended corridors.

During the course of development of the EIS, it became apparent that the five corridors under consideration had independent utility. This meant that the decision to build or not build any one of them would not affect the decision on a different corridor. In three of the five corridors evaluated for this project, the build alternative was selected as satisfying Purpose and Need. In the other two corridors, it was found that either the build alternative did not adequately satisfy Purpose and Need or unavoidable major adverse impacts to the natural and human environment were encountered. The no-build alternative was selected in these two corridors. The CC&P/Stearns Road Corridor project was one of the recommended corridors.

The FHWA has reached its decision based upon information and analysis contained in the Final EIS. The FHWA's decision concludes that each of the build alternatives for three of the five corridors: 1) best satisfies Purpose and Need, 2) poses the least impacts to the natural and human environment, 3) has been selected based on processes in compliance with NEPA and other applicable requirements, 4) each remains eligible for

Federal Highway funding, and 5) Kane County, as project sponsor, may advance each through the project development process.

The CC&P/Stearns Road Corridor Project is the first of the three approved crossings of the Fox River to be designed. The Applicant considered several alternative methods to improve the bridges and culverts over waterways in the project area. The Dunham Road crossing of the East Branch of Brewster Creek was investigated and removal of the existing culvert and replacement with a new bridge at this location was recommended to minimize impacts to the aquatic environment of this stream. Other planned crossings of Brewster Creek were designed to not impact Brewster Creek.

5. SPECIES SURVIVAL

Construction and operation of the proposed project will not reduce the likelihood of survival of state endangered or threatened mussels in Illinois. The nearest known location of state protected mussels is 0.5 miles upstream of the project area. If state-listed mussels are present at the Dunham Road crossing of the East Branch of Brewster Creek, they will be relocated to appropriate habitat along with any other mussels found during the preconstruction survey. The use of strict sedimentation control measures will minimize any short-term construction related impacts. Erosion and sediment control during construction will comply with the Kane County Storm Water Ordinance. Erosion and Sediment Control Plans for each phase of construction will be reviewed by the Kane-DuPage County Soil & Water Conservation District. Any sediment impacts will be further minimized by relocating all mussels located within the project area and an additional 150 feet downstream of the project area to a new area with suitable habitat upstream of the project area.

6. IMPLEMENTING AGREEMENT

The Applicant will contract with a qualified subcontractor subject to IDNR approval to conduct the preconstruction survey and mussel relocations. The survey will occur in the spring/summer of 2006 or 2007 prior to initiation of in-stream construction. The field personnel from the qualified subcontractor will hold authorization under Section 5/3.22 Chapter 20 and Section 5/20-100, Chapter 515 of the Illinois Complied Statutes to collect aquatic invertebrates (Illinois T&E species permit and collecting permit).

The Applicant will provide a report detailing the results of the preconstruction mussel surveys and subsequent relocations to the IDNR, Division of Natural Heritage, within 45 days of the surveys. The surveys and relocations will occur prior to the initiation of construction activities when water and air temperatures are in compliance with acceptable protocols and standards for mussel relocations.

APPENDIX A

IDNR ENDANGERED SPECIES CORRESPONDENCE

RECEIVED
AUG 24 2005
KANE COUNTY
DIVISION of TRANSPORTATION

Illinois Department of
Natural Resources
One Natural Resources Way · Springfield, Illinois 62702-1271
http://dnr.state.il.us

Rod R. Blagojevich, Governor
Joel Brunsvold, Director

August 19, 2005

Mr. Carl Schoedel
Kane County Division of Transportation
41W011 Burlington Road
St. Charles, Illinois 60175

RE: CC&P/Steams Road
Corridor
Kane County, Illinois
Sec. No. 98-00214-02-BR

ATTN: Mark Bagherpour

Dear Mr. Schoedel:

The Illinois Department of Natural Resources (IDNR) received your response dated August 2, 2005 regarding the potential impacts the proposed project may have on a recently discovered mussel species (Slippershell) in the East Branch of Brewster Creek.

This project was reviewed by the Incidental Take Committee for potential impacts. It was the consensus of this committee that the IDNR should recommend that the Kane County Department of Transportation consider seeking an Incidental Take Authorization for the Slippershell Mussel associated with the Dunham Road culvert replacement, at a minimum, and it may wish to consider doing so for the entire project east of the Fox River, to cover all bases.

To comply with the Illinois Endangered Species Protection Act, it is recommended that the applicant make application to the Illinois Department of Natural Resources for the procedures and application required to file this conservation plan. This coordination effort should be addressed to Mr. Glen Kruse / Biodiversity Program Manager, Illinois Department of Natural Resources, One Natural Resources Way, Springfield, Illinois 62702-1271.

If you have any questions on the above, please contact me at 217-785-4862.

Sincerely,

Steve Hamer

Steve Hamer
Transportation Review Program/Division of Resource Review and Coordination

cc: J.D. Stevenson,FHWA Glen Kruse, IDNR/ORC/Endangered Species Coodinator
Chad Riddle, IDOT, Schaumburg, Bureau of Local Roads and Streets

APPENDIX B

FOX RIVER BRIDGES/CC&P/STEARNS ROAD CORRIDOR EIS – RECORD OF DECISION

Record of Decision

Fox River Bridge Crossings
Kane County, Illinois

April, 2002

Purpose and Need

The purpose of this project is to provide for a series of transportation improvements to increase access across the Fox River. However, the provision of this access is not to be to the detriment of other quality of life issues in the Fox River Valley area. As such, the objectives of these improvements were developed with input from the Kane County Development Department. The objectives specified follow:

1) ***Enhance*** Kane County's transportation network by reducing congestion and providing alternate and more direct routes

2) ***Serve*** existing land use through efficient access to central business districts; public services; and employment and commercial centers

3) ***Serve*** proposed land use in conformance to Kane County's *2020 Land Resource Management Plan*, which encourages compact, contiguous growth in the eastern portion of the County and preserves the rural qualities of the western portion.

This Purpose and Need was presented as part of Illinois' NEPA/404 Merger Process and concurrence from the involved resource agencies was reached.

2. Decision

Of the over twenty potential crossings identified by the Fox River Bridge Advisory Committee, only nine corridor crossings of the Fox River were determined as potentially satisfying the Purpose and Need for this project or were not being pursued by other agencies. Only these nine were to be evaluated during the Environmental Impact Statement (EIS). These nine corridor crossings were then screened for "fatal flaws" defined as unacceptable, immitigable impacts. Only five of the nine corridors survived this screening process.

During the course of development of the EIS, it became apparent that the five corridors under consideration had independent utility. This meant that the decision to build or not build any one of them would not affect the decision on a different corridor. In three of the five corridors evaluated for this project, the build alternative was selected as satisfying Purpose and Need. In the other two corridors, it was found that either the build alternative did not adequately satisfy Purpose and Need or unavoidable major adverse impacts to the natural and human environment were encountered. The no-build alternative was selected in these two corridors.

The FHWA has reached its decision based upon information and analysis contained in the FEIS and outlined below. FHWA's decision concludes that each of the build alternatives for three of the five corridors as described in this document: 1) best satisfies Purpose and Need, 2) poses the least impacts to the natural and human environment, 3) has been selected based on processes in compliance with NEPA and other applicable requirements, 4) each remains eligible for Federal Highway funding, and 5) Kane County, as project sponsor, may advance each through the project development process.

Bolz Road Corridor

The proposed Bolz Road is an east-west four-lane arterial roadway with median, approximately 9.0 kilometers (5.6 miles) in length. The proposed road passes through portions of the Villages of Algonquin, Carpentersville and Barrington Hills, as well as unincorporated areas of Kane County. The western terminus is on Huntley Road west of Randall Road, approximately 390 meters (1300 feet) northwest of the Huntley/Boyer intersection. From Huntley Road to the Fox River the corridor primarily traverses mostly undeveloped properties or new subdivisions; these subdivisions were developed with a dedicated right-of-way to accommodate the proposed Bolz Road. After crossing the river, the corridor parallels existing Bolz

Road, to the eastern project terminus at Illinois Route 62. The decision for this corridor is to build a structure across the Fox River and the necessary roadway approaches and connections.

Chicago Central & Pacific (CC&P)/Stearns Road Corridor

The proposed CC&P/Stearns Road is an east-west four-lane arterial roadway with median, approximately 7.4 kilometers (4.6 miles) in length. The proposed road extends from Randall Road at approximately McDonald Road eastward, parallels the Canadian National Illinois Central (CNIC) (formerly the CC&P) tracks on the south to intersect McLean Boulevard and pass under Illinois Route 31 before crossing the Fox River. On the east side of the Fox River the road connects to Illinois Route 25, proceeds northeasterly along Illinois Route 25 across the CNIC tracks, under the UP tracks and then proceeds on new alignment eastward across Dunham Road to link up to Stearns Road in DuPage County. This roadway is located primarily in unincorporated Kane County, but also involves the Village of South Elgin, the Village of Wayne the Village of Bartlett and a portion of DuPage County. The decision for this corridor is to build a structure across the Fox River and the necessary roadway approaches and connections.

Illinois Route 56/Oak Street Corridor

The proposed Illinois Route 56/Oak Street is a east-west arterial roadway approximately 8.5 kilometers (5.3 miles) in length. The proposed road passes through portions of the Village of North Aurora and the City of Aurora. From the western terminus of the intersection of Oak Street with Orchard Road, the roadway proceeds east approximately along Oak Street to Illinois Route 31 as a three-lane (one lane in each direction plus turn lane/median) facility. At Illinois Route 31 the road transitions to a five-lane (two-lanes in each direction plus median/turn lane) facility. It crosses the Fox River on new alignment as a divided four-lane facility to connect to Illinois Route 56 east of Illinois Route 25. At this point the improvement extends east along Illinois Route 56 to approximately Kirk Road. The decision for this corridor is to build a structure across the Fox River and the necessary roadway approaches and connections.

Red Gate Road Corridor

The proposed Red Gate Road corridor is located primarily in unincorporated Kane County, but portions are also in the City of St. Charles, the Village of Wayne and unincorporated DuPage County. Beginning west of the Fox River at Randall Road, the proposed road extends eastward along the existing Red Gate Road to Illinois Route 31. From Illinois Route 31 across the Fox River, the road proceeds on new alignment. At Illinois Route 25 it then connects to existing roads, providing a link to Illinois Route 59 in DuPage County. The principal option studied in this corridor provided the connection east of Illinois Route 25 on existing Army Trail Road. Numerous options were evaluated for the corridor, including two-lane versus four-lane options, and alignment variations affecting the eastern terminus to avoid unacceptable, immitigable impacts. All options of this corridor were dropped from further consideration in this project. The decision for this corridor is not to build a structure across the Fox River and the necessary roadway approaches and connections.

Chicago & North Western (C&NW)/Dean Street Corridor

The proposed C&NW/Dean Street is located primarily within the City of St. Charles. The western terminus of the C&NW/Dean Street corridor improvement is Dean Street, just west of Randall Road. From there, the corridor runs east on Dean Street, across Randall Road to the intersection with the Union Pacific (formerly the C&NW) railroad tracks near 17th Street. The corridor then parallels the Union Pacific Railroad (formerly the C&NW) tracks over Illinois Route 31 across the Fox River and under Illinois Route 25 until it intersects with Illinois Route 64 at 11th Avenue, 1 kilometer (0.6 mile) east of the

Fox River. The proposed improvement is 3.0 kilometers (1.9 miles) of two-lane roadway. The proposed road produced unacceptable, immitigable impacts. The decision for this corridor is not to build a structure across the Fox River and the necessary roadway approaches and connections.

The above decisions were presented as part of Illinois' NEPA/404 Merger Process at a Concurrence Point 3 (preferred alternative) meeting. Based upon the factors described below, concurrence from all agencies was reached on these decisions.

3. Alternatives Considered and Factors Affecting the Decision

During Illinois' NEPA/404 Merger Process, Concurrence Point 2 (alternatives development) meeting, alternative development for the project was reviewed and agreed upon by all agencies, subject to approval of the impact analysis and the mitigation plan.

No-Build Alternative

The No-Build Alternative was considered in each of the five corridors studied. The No-Build Alternative is defined as normal maintenance, possibly minor improvements, and previously committed projects, but no new major improvements.

Congestion-Management System Alternatives

Related to the No-Build Alternative are Congestion-Management System (CMS) Alternatives. CMS Alternatives considered in this study included Travel Demand Reduction strategies, which attempt to reduce the numbers of vehicles on the roadway system, and Operational Management strategies, which involve network improvements to make the system function more efficiently. These strategies involved:

- Staggering of work hours
- Carpooling or vanpooling programs
- Parking management
- Improved or new transit services
- Operational improvements to existing facilities
- Elimination of bottlenecks

CMS meetings were held with the Federal Transit Administration, CATS and transit operators in the area. The involved parties agreed that given the nature of travel in the Fox River Valley area (dispersed trip ends without major employers), the existing transit system and the roadway network in the area, CMS alternatives could not address the Purpose and Need for this project in any of the five corridors studied.

Corridor Alternatives

Given the "fatal flaw" screening process described in the Decision Section above and the above decision on the CMS Alternatives, only Build versus No-Build and alignment variations were left to decide in the five corridors.

Involvement of resource and regulatory agencies as part of Illinois' NEPA/404 Merger Process, as well as public involvement, were instrumental in selecting the No-Build Alternative for two of the corridors, i.e., the Red Gate Corridor and the C&NW/Dean Street Corridor.

Bolz Road

The Bolz Road Corridor extends relatively directly from west to east. During the course of this study, as subdivisions were developed along the corridor west of the Fox River, land was set aside for the section of this corridor that crossed through the subdivision. Little alignment variation was possible on the west side of the Fox River.

The primary area for alignment variation was on the east side of the Fox River. An abandoned quarry lies north of a portion of this alignment. The excavation of this quarry prevents the alignment in this section from being shifted further north. South of this same section is the existing Bolz Road, which is adjacent to housing on its south side. These two factors prevent the alignment from being shifted in this area.

The alignment presented in the Draft EIS (DEIS) then proceeded directly east, requiring property from the Hickory Hill site, a public park owned by the Dundee Township Park District. The DEIS alignment then traveled further to the east directly north of Woodlands School. This DEIS alignment isolated the school from the park, which had previously been used unobstructed by the school children.

Based upon consultation with school and park officials, it was decided that in the Final EIS (FEIS) this alignment would be shifted as far north (away from the school) as could be accommodated while still producing a safe, efficient roadway. This shift resulted in the roadway being located on the little used north side of the park and no longer isolated the school from the park. However, this effort to minimize harm to the park resulted in the need to acquire one additional residence. This alignment shift, along with the proposed mitigation plan to replace park property taken by the project, would result in no net adverse impact to the Park District or school.

This alternative satisfies the objectives of the Purpose and Need for this project. It reduces congestion on the existing Kane County transportation network by providing alternate and more direct crossings of the Fox River and is compatible with County and local land use plans, while not causing excessive impacts on the human and natural environment.

CC&P/Stearns Road

Major factors limiting development of options for the CC&P/Stearns Road Corridor were:

- The presence of one active railroad paralleling the corridor (the CNIC) and one crossing it (the UP)
- A railroad spur connecting the CNIC tracks to the Fox River Trolley Museum tracks along the west bank of the Fox River
- Presence of wetlands throughout the project area, including very sensitive wetlands containing threatened and endangered species located immediately north of the CNIC railroad on both sides of the river;
- A high quality river system (i.e., Brewster Creek with its tributaries) on the east side of the Fox River
- An active quarry south of the CNIC tracks west of the Fox River
- At the project eastern terminus, a major park complex including Tri-County State Park and Pratt Waynes Woods
- An employer with a large percentage of minority workers
- A cemetery near the east end of the project.

These factors severely limited potential alignment variations to the point where only minor variations were possible. While it was possible to avoid filling the most sensitive wetlands, other wetlands are to be filled. During the project development review process, resource and regulatory agencies expressed concerns over proximity impacts from a new road to the sensitive wetlands and to the Brewster Creek Watershed. These proximity effects primarily related to the potential introduction of roadway salt into the wetlands and watershed. These concerns led to the development of the CC&P/Stearns Road Environmental Corridor Plan. This plan includes extensive creation of new wetlands, sediment traps, detention basins, and buffering to protect the wetlands and the Brewster Creek system. The net result is additional protection for the sensitive resources beyond the No-Build Alternative, additional bike paths and an increase in Forest Preserve holdings.

Unfortunately, the limitations on alignment options placed the roadway through Midwest Groundcovers, a landscaping firm employing a large percentage of minority employees. Considering the proximity of wetlands, the railroad tracks and Brewster Creek, avoidance of this parcel was not possible. The owner of Midwest Groundcovers has since purchased property at a site 28.8 kilometers (18 miles) west of the current site as a new location for the business. Current employees will be asked to relocate.

This alternative satisfies the objectives of the Purpose and Need for this project. It reduces congestion on the existing Kane County transportation network by providing alternate and more direct crossings of the Fox River and is compatible with County and local land use plans, while not causing excessive impacts on the human and natural environment.

Red Gate

The eastern terminus of this corridor is in the Village of Wayne. Within the Village of Wayne there are two historic districts on the National Register of Historic Places adjacent to Army Trail Road. A new four-lane facility through this area would have caused unacceptable, immitigable impacts to these historic districts, while a two-lane facility in the area would not have provided adequate capacity to accommodate future demand. In effect a two-lane facility would create pressure for subsequent widening, resulting in the same impacts to the historic districts.

Alignment variations to avoid adverse impacts to the historic districts were studied. All failed to provide safe, efficient transportation and avoid traffic pressure on the historic districts. Additionally, the Kane County Planning Department indicated that additional traffic through the historic areas of Wayne, even with only a two-lane road, was incompatible with their land use plan, which is in contradiction to one of the objectives of the needs statement for this project. The Red Gate Corridor was dropped from further consideration because a viable alternative that satisfied Purpose and Need could not be developed that did not cause unacceptable, immitigable impacts.

C&NW/Dean Street

The C&NW/Dean Street Corridor was proposed with the idea that a new road could parallel an active railroad line. This constraint effectively limited the roadway to two lanes and minimal alignment variations. This alignment also would have caused unacceptable, immitigable impacts to a Section 4(f) resource, i.e., Pottawatomie Park. In addition, the St. Charles Park District, agency with jurisdiction over the Pottawatomie Park, indicated that they would not cooperate in the development of this corridor. Without the cooperation of the Park District, the corridor could not be developed. The C&NW/Dean Street Corridor was dropped from further consideration because a viable alternative that satisfied Purpose and Need could not be developed that did not cause unacceptable, immitigable impacts.

Illinois Route 56/Oak Street

This corridor originally contained two alignment variations. The northernmost alignment (Mooseheart Alignment) originated on the west side of the Fox River at the intersection of Orchard Road, Randall Road and Mooseheart Road and proceeded east along Mooseheart Road. It then proceeded on new alignment across the Fox River, crossing the Red Oak Nature Center, a public recreational facility owned by the Fox Valley Park District. The road continued east on new alignment south of the Fox Valley Country Club Golf Course. The road continued further easterly before curving south to intersect Illinois Route 56 east of Kirk Road. During the course of this study, much of the previously vacant land east of the Fox River along this alignment has been developed.

The other alignment variation begins on the west at the intersection of Oak Street and Orchard Road. It then proceeds east along existing Oak Street to the Fox River and then crosses the Fox River on new alignment. Once it has crossed the river, it continues east to the point Illinois Route 25 joins existing Illinois Route 56. The proposed roadway then continues east along existing Illinois route 56 to Kirk Road. This portion of Illinois Route 56 will be widened to match the divided four-lane section east of Kirk Road.

During the public involvement process and discussions with local officials, the concern over impacts of the Mooseheart Alignment on the Red Oak Nature Center became apparent. There was no effective mitigation for these impacts to the Nature Center. While the Oak Street alignment also required land from Highlands Park, another recreational facility owned by the Fox Valley Park District, the Park District indicated that Highlands Park had been developed with the anticipation that Oak Street might be widened. Therefore, the impact to Highlands Park from right-of-way acquisition for roadway widening would not necessarily be significant. FHWA's evaluation of the situation resulted in the determination that property acquisition from Highlands Park falls within the area of co-planning and thus is not a Section 4(f) use. Considering that the Mooseheart alignment would have a Section 4(f) use, which had raised objections from the Park District, and that the Illinois Route56/Oak Street alignment did not, there was a prudent and feasible alternative to the Section 4(f) use of the Mooseheart Alignment. The Mooseheart Alignment option was therefore dropped from further consideration.

Community cohesion and public safety are factors for consideration in the Illinois Route 56/Oak Street alignment. Residential neighborhoods, parks and schools border Oak Street. The widening of Oak Street to a five-lane facility would have an adverse impact on the ability of children to cross freely from one side of the road to the other. While options were explored with local officials to provide safe, easy access across a newly widened Oak Street (including overpasses, underpasses, additional signals, etc.), none of them proved feasible or likely to be effective. As a result of this and that the Illinois Route 56 designation west of the Fox River proceeds south on Illinois Route 31, the section of this roadway west of Illinois Route 31 will only be improved to a three-lane section, except at major intersections, i.e., at Illinois Route 31, at Randall Road and at Orchard Road.

While the proposed three-lane section is a change from the five-lane section evaluated in the FEIS, it does not cause any increases in impacts. In fact, proximity impacts will be reduced, as less right-of-way is required. This proposed roadway, even as three-lane west of Illinois Route 31, satisfies the objectives of the Purpose and Need for this project. It reduces congestion on the existing Kane County transportation network by providing alternate and more direct crossings of the Fox River and is compatible with County and local land use plans, while not causing excessive impacts on the human and natural environment.

4. Section 4(f) and 6(f)

Each of the three selected corridors has potential for Section 4(f) uses, though careful evaluation of some of the apparent, potential uses revealed them not to be a Section 4(f) use. One type of potential Section 4(f) use common to the three selected corridors is the crossing of a north-south recreational trail. The crossing of these trails is inevitable and unavoidable because the proposed corridors are east-west roadways. These crossings actually have no net effect on the trail. Since the crossings will be grade separated, the new roads will not impede the use of these trails.

The remaining Section 4(f) issues are discussed by corridor. Coordination with the respective owners of Section 4(f) public recreational properties has been extensive to avoid use, minimize uses where they could not be avoided, and provide mitigation with enhancements, as appropriate.

Bolz Road Corridor

The proposed alignment crosses the Algonquin Shores Forest Preserve, owned by the Kane County Forest Preserve District, along the east bank of the Fox River. Immediately south of this Forest Preserve and adjoining it is the Fox River Shores Forest Preserve. Because of the north-south length of these combined holdings (approximately 4 kilometers (2.5 miles)), there is no prudent and feasible alternative to crossing the Kane County Forest Preserve property in this area. Measures to minimize harm include crossing the Forest Preserve at its narrowest point and construction of the roadway on structure above the Forest Preserve, allowing free access below the structure.

The selected alignment also crosses through the Hickory Hills site, a public recreational facility, developed with a grant from the Land and Water Conservation Fund. An alignment shift to the south to avoid the park would displace a school and approximately 60 residences. To accomplish an alignment shift to the north large enough for total avoidance would require the use of substandard design in the form of sharp curves and minimal tangents. A substandard design would compromise safety of the proposed new road. There is no prudent and feasible alternative to the use of the Hickory Hills site. Coordination with the park owner, the Dundee Township Park District and the Illinois Department of Natural Resources (IDNR), the administrator of Land and Water Conservation funds in Illinois, has identified measures to minimize harm in a mitigation plan involving the replacement of the proposed conversion with property of the same or greater value. This replacement will satisfy Section 6(f) requirements prior to the conversion and provide the Park District facilities more in keeping with their needs. Prior to the conversion, the proposal will be submitted to IDNR again for their review. Upon receipt of approval from IDNR, IDNR will forward the proposed conversion plan with mitigation to the Field Director of the National Park Service of the U. S. Department of the Interior for review and approval.

The proposed alignment requires approximately 11.1 meters (37 feet) of frontage from the yard of the Perry-Lathrop House, a property eligible for inclusion on the National Register of Historic Places, located on the east side of Illinois Route 31 north of the proposed Bolz Road. The proposed usage is due to required improvements to Illinois Route 31 due to its proximity to the proposed intersection with the proposed Bolz Road. On the west side of Illinois Route 31 opposite the Perry-Lathrop House is the Lathrop Livestock Transportation Center; this center is used for the international shipping of cattle. Widening is proposed for both sides of Illinois Route 31. Further widening onto the Livestock Center would require buildings and affect the economic viability of the facility. There is no prudent and feasible alternative to the use of the frontage property from the Perry-Lathrop House. Harm will be minimized in consultation with the State Historic Preservation Officer (SHPO) by designs that minimize the right-of-way acquisition and landscaping measures to replace displaced vegetation in harmony with the historic house.

Cultural Resources

Archaeology

- A number of sites of potential archeological interest were identified along the Illinois Route 56/Oak Street, CC&P/Stearns Road and the Bolz Road corridors. In each case, if the site is impacted by the construction of a roadway, and it is determined that the site is eligible for inclusion on the National Register of Historic Places, a data recovery plan and Memorandum of Agreement will be developed in consultation with the State Historic Preservation Officer in accordance with Section 106 of the National Historic Preservation Act of 1996, as amended. Since these sites are important because of what can be learned from data recovery only and do not warrant preservation in place, they are not subject to Section 4(f) of the Department of Transportation Act of 1966.

Historic

- As plans are developed for the Bolz Road Corridor, further consultation will occur with the SHPO concerning the Perry-Lathrop House (19N 045 Illinois Route 31) to ensure adverse impacts are avoided in accordance with Section 106 of the National Historic Preservation Act of 1996 and implementing regulations.

Water Quality and Water Resources

Groundwater Protection

- Because of near surface granular materials for the Bolz Road and CC&P/Stearns Road Corridors, when ditches are used, they will be lined to reduce the potential for infiltration of spills and other runoff contaminants.
- For the CC&P/Stearns Road corridor, where there is shallow groundwater hydraulically connected to wetlands; roadway ditches, storm sewers and other utilities in the roadway will be designed so as not to lower groundwater levels that would adversely affect wetlands.
- In the CC&P/Stearns Road corridor existing sources of chlorides and other pollutants are being removed. This removal takes the form of the purchase and removal of a horse stable and numerous houses with septic tanks.

Floodplains

- Compensatory storage for fill in the regulatory floodplain will be in accordance with the more stringent requirements of either the Kane County Countywide Stormwater Ordinance or the IDNR - Office of Water Resources requirements.

Stormwater Management - Erosion and Sediment Control

- The stormwater management program will comply with the Kane County Stormwater Management Ordinance. This will include the development of detention facilities, where the provision would not cause other significant impacts.
- Plans will be developed in accordance with Illinois Department of Transportation and Kane County erosion and sediment control requirements. The Kane County Natural Resources Department will review the plans for compliance.

- Vegetative swales will be used, where right-of-way permits, in conjunction with detention basins to provide additional water filtration.
- For the CC&P/Stearns Road corridor, only bridges, not culverts, will be constructed across Brewster Creek and its tributaries to reduce in-stream impacts.
- The stormwater management plan will comply with required National Pollution Discharge Elimination System permits.

CC&P/Stearns Road Environmental Corridor Plan

Kane County, in cooperation with the Kane County Forest Preserve, will implement the CC&P/Stearns Road Environmental Corridor Plan. The steps for the implementation are:

1. Generate a Plan and vision statement;
2. Land Acquisition (according to exhibit 4.3-5 of FEIS);
3. Immediate Management Assistance for Acquired Properties;
4. Construction;
5. Interim Management; and
6. Transfer properties to Kane County Forest Preserve District.

Important components of the Environmental Corridor Plan to be implemented to protect wetlands and other water resources include:

1. Development of a monitoring program for vegetative and aquatic life in the Brewster Creek tributaries and wetlands created and maintained by the project.
2. Removal of some identified sources of chlorides or other pollutants. These include the removal of a house and abandonment of a septic field near South Elgin Sedge Meadow/Fen; and the removal of a horse stable and houses, and abandonment of septic fields adjoining the east branch of Brewster Creek.
3. Protection of the recharge area for the Day's Fen.
4. Acquisition of critical recharge area for the Day's Fen
5. Acquisition of major parts of the South Elgin Sedge Meadow/Fen and restoration to a more natural state. Dedication of the part of the South Elgin Sedge Meadow/Fen acquired as an Illinois Nature Preserve. Work with owner of the remainder of the wetland to attempt dedication.
6. Work with the owners of the Elmhurst-Chicago Stone Pipe Plant to create a riparian buffer or other interception measures to improve the water quality of runoff from the plant.
7. Vegetative stabilization of the spoils banks adjoining the proposed roadway from the Fox River Stone facility to improve air and water quality.
8. Detention facilities will not be developed below the ground water level and will be lined to prevent the infiltration of pollutants directly into the groundwater.
9. Control of runoff by detention ponds with extended detention times before release into receiving streams. Use of bio-treatment to improve the quality of runoff.
10. Roadway runoff bypassing sensitive wetlands.
11. Development of an erosion and sediment control plan with enforcement for this project in cooperation with the Kane County Department of Water Resources.
12. Creation of vegetative berms adjoining the roadway in the area of the South Elgin Sedge Meadow/Fen and the Day's Fen to reduce airborne transport of potential pollutants.
13. Wetlands created on site. Wetlands will be designed for sediment settling.
14. Floodplain compensation.

Kane County will maintain coordination with the Technical Advisory Group (Committee) (TAC) throughout project development.

Wetlands

- Wetland mitigation will be in accordance with the more stringent of Section 404 requirements or the Interagency Wetlands Policy Act.
- Wetland mitigation for the Illinois Route 56/Oak Street corridor will be achieved through a wetland bank since the amount required for compensation is too small to be a viable independent site.
- Wetland mitigation for the CC&P/Stearns Road Corridor will be on-site.

Biology

Threatened and Endangered Species

- Because of the potential presence of the greater redhorse and the river redhorse in the Fox River for the Illinois Route 56/Oak Street and the CC&P/Stearns Road Corridors, in stream work or work that would potentially impact the Fox River will be limited to the dates of June 8 through February 29 of the project year, outside of the spawning season.
- Prior to the start of construction, a population survey of live, non-invasive mussel species will be conducted in streams to be crossed. In the event that any live specimens of the elktoe mussel or other non-invasive species are found, a mussel relocation program will be developed in consultation with the IDNR.
- Bridges over the Fox River in natural areas shall provide open spans over the natural areas adjoining the river to facilitate animal migrations.

Restoration

- All land areas will be restored to turf or other vegetative cover. Native grasses and wildflowers will be plant where appropriate.
- Plantings, including trees, will be coordinated with local officials.

Noise

- The County will further coordinate with local officials during the design development on potential noise mitigation. Based upon previous analysis and coordination, any mitigation would most likely take the form of berms with landscaping, where right-of-way allows, adjoining residential areas to reduce the perception of noise impacts.

Construction Impacts

- Construction noise will be attenuated through the proper use of mufflers and limitations on excessive noise producing activities to normal working hours near noise sensitive receptors.
- Dust and sediment will be controlled by limiting the area that can be exposed prior to construction. Denuded areas will be stabilized within 15 days of achieving final grade. Watering will be used as directed by the Resident Engineer to limit dust.

6. Monitoring or Enforcement Program

The FHWA's Illinois Division Office, through IDOT, will monitor the further development of the Fox River Bridge Crossings through its day-to-day administration of the Federal Aid Program. This will ensure that all practicable mitigation measures, as summarized above and described in the FEIS will be included in the final project design. Also, IDOT will ensure that all measures are constructed in accordance with plans and

specifications through their oversight of the construction phase of this project.

To facilitate effective monitoring, a detailed list will be prepared for each corridor and by stage of implementation. The County will report to the Illinois Department of Transportation and FHWA on the status of the commitments when the preliminary design and final Contract documents are available for review.

Other monitoring or enforcement programs will be developed as part of the Section 404 permit process. These requirements will be added to the list of commitments for the Illinois Department of Transportation and FHWA to monitor. Kane County will be the permittee and bears the primary responsibility for implementation of the Section 404 requirements.

7. Response to Comments on FEIS

Comments from Resource and Regulatory Agencies

U.S. Environmental Protection Agency (USEPA): USEPA stated they have no significant environmental concerns with the preferred alternative. They did state that they recommend continuing activity of the Technical Advisory Committee (TAC) coordination during project development of the CC&P/Stearns Road Corridor with its Environmental Corridor Plan.

Response to comments: We will commit to maintain coordination with the key players of the TAC through the development of the project via new meetings or participating in Illinois Department of Transportation (IDOT) regular coordination meetings involving the same players.

Illinois Nature Preserve Commission (INPC): The INPC agreed with the alternative as proposed with mitigation plan. They also stated that the commitments in the Technical Memo and discussed with the Technical Advisory Committee need to be reiterated more completely.

Response to comments: The commitments of the Technical Memo are spelled out more explicitly in the Mitigation and Commitments section (Section 5) of this Record of Decision.

Illinois State Geological Survey (ISGS: The ISGS stated that the water quality data from the special ISGS studies for water quality for the CC&P/Stearns Road corridor were not presented properly.

Response to comments: A revised summary reviewed and agreed upon by ISGS is attached to the Record of Decision.

U.S. Department Of The Interior - U.S. Fish And Wildlife Service (USFWS): The USFWS concurs with the selected alternative, including proposed mitigation plan. They did state that the commitments in the FEIS were vague compared to the Technical Memo and as discussed with the Technical Advisory Committee. The Record of Decision should reflect stronger, more specific commitments. The Technical Advisory Committee should be maintained throughout the life of the CC&P/Stearns Road project.

Response to comments: The commitments of the Technical Memo are spelled out more explicitly in the Mitigation and Commitments section (Section 5) of this Record of Decision. Section 5 of this Record of Decision also notes that we will maintain coordination with the key players of the TAC through the development of the project via new meetings or participating in IDOT regular coordination meetings involving the same players.

Chicago Area Transportation Study (CATS): CATS stated that contrary to the FEIS, the traffic numbers were not necessarily provided by CATS. Also, CATS noted that they did respond to all requests for assistance. Nevertheless, the information presented is reasonable.

Response to comments: The traffic numbers were modified to reflect local understanding. They should have been coordinated with CATS. We regret the implication that CATS was not responsive. CATS was of great assistance throughout the project. Any delay in the timeliness of data was due to our own lack of timely requests.

Illinois Historic Preservation Agency (IHPA): IHPA stated that the FEIS addresses all their earlier comments and no further comments are necessary. The FEIS satisfies Section 106 of the National Historic Preservation Act of 1966, as amended.

Response to comments: No response is necessary.

Comments from Other Official Sources

REMPE-SHARPE (consulting engineers for North Aurora): They noted that a five-lane section for Oak Street would adversely affect the community. It will impact community cohesion and safety. A three-lane roadway would be acceptable.

Response to comments: The ROD decision (Section 2) reflects a changed proposed design for the Oak Street section. The proposed design will be three lanes.

Comments from Other Concerned Groups or Individuals

Comments received on the FEIS from other concerned groups or individuals fell into two categories: 1) those that were applicable to all corridors studied in the FEIS (specified as "General" below); and 2) those specific to the Bolz Road Corridor. None of the comments received were specific to the other corridors considered in the study.

Comments from Other Concerned Groups or Individuals - General

Comments: The proposed crossings will adversely affect water quality in the Fox River from stormwater runoff and airborne pollutants from traffic. Runoff should not be conveyed directly to the Fox River.

Response to comments: For the Bolz Road corridor and the CC&P/Stearns Road corridor, runoff will not be conveyed directly to the Fox River. It will be intercepted by detention facilities first and flow overland before entering the Fox River. This will result in the reduction of some pollutants loadings and attenuation of flows and pollutants.

Due to the developed nature of the corridor surrounding the Illinois Route 56/Oak Street corridor, areas for open detention are not available near the Fox River. Nevertheless, an analysis of pollutant loadings, including stormwater runoff and the airborne components, for all corridors indicated the resulting concentrations of pollutants did not cause a violation of water quality standards (Section 4.1.7.2 of the FEIS). Therefore, no impact to water quality is anticipated.

Comments: The proposed crossings will adversely affect the recreational value of the Fox River. This includes impacts from the crossing for Illinois Route 56, CC&P/Stearns Road and Bolz Road - hunting, fishing, boating, and hiking.

Response to comments: As for biking and hiking, all structures will be built to span trails so they will remain continuous. Pier spacing in the Fox River will not interfere with boating. In fact, the Bolz Road bridge will not have any piers in the normal water. The proposed crossing at Illinois Route 56/Oak St. is in an urban area less than 100 meters from a dam and less than 200 meters from an existing bridge crossing the Fox River. The CC&P/Stearns Road crossing is only 75 meters (250 feet) from an existing railroad bridge and will be designed with greater clearances than the railroad bridge. The proposed vertical clearances above normal water level will not represent an impedance to recreational boating. Also, the Forest Preserve District can use the new bridges as an opportunity to expand their trail system.

The proposed Bolz Road and CC&P/Stearns Road will span the Fox River and adjoining overbank areas at clearances sufficient to allow boating, bicycling and hiking. With these horizontal and vertical clearances, there will be no additional restrictions on recreational hunting or fishing. Considering existing conditions at the location of the proposed crossing of the Fox River by the Illinois Route 56/Oak Street, there will be no additional restrictions on hunting or fishing at this location.

Another possible impact to recreational values is an impact to the viewshed from the Fox River to a new crossing. This is not an issue for the Illinois Route 56/Oak Street crossing because of the immediately adjoining development. The CC&P/Stearns Road crossing is within 75 meters (250 feet) of an existing railroad structure and electrical transmission lines; the crossing does not represent a major new intrusion into the viewshed. Of the proposed corridors, the Bolz Road crossing represents the largest intrusion into the viewshed of the Fox River; this was acknowledged in the FEIS (Section 4.2.13). For all the bridges, the project will attempt to minimize visual impacts by designing bridges that are sensitive to their context.

There will be a net enhancement to bicycling from these projects. Both the CC&P/Stearns Road Corridor and the Bolz Road corridor will provide new mixed-use paths throughout their length. These new trails will also connect to other trail systems enhancing the flexibility of pedestrians and bicycle riders. Finally, both the corridors will provide new access across the Fox River and to its banks.

Comments: Alternative analysis flawed. It should have considered local lanes on I-88 and I-90.

Response to comments: The Purpose and Need for this project includes the requirement for system linkage into a regional east-west arterial roadway network. The Purpose and Need also includes more direct routes with reduced distances between roadway network crossings of the Fox River. Providing local lanes attached to I-88 and I-90 connecting to Illinois Route 25 and Illinois Route 31 on each side of the Fox River does not address the Purpose and Need. Traffic utilizing these local lanes attached to I-88 and I-90 would not have direct access to an east-west arterial. Also, the addition of the local lanes on I-88 and I-90 would not reduce the distance between crossings of the Fox River.

The comment and response following for the Bolz Road corridor on alternative analysis expands further on how alternatives were developed and screened. As noted, the alternatives development was an open process involving resource and regulatory agencies and the public.

Comments from Other Concerned Groups or Individuals – Specific to the Bolz Road Corridor

Comments: The alternatives analysis is flawed in that alternatives were not truly considered or properly presented.

Response to comments: The alternatives analysis, including the process that led up to the acceptance of the alternatives, was quite extensive and open. As is normal for an EIS, the alternatives analysis began with the No-Build Alternative; the No-Build is defined to include normal maintenance, minor improvements and previously committed projects. With the No-Build, the options were expanded to include Congestion Management Alternatives; these options include strategies for travel demand reduction, transit, and the identification and elimination of bottlenecks. The No-Build and Congestion Management Alternatives were not acceptable for this project because they did not address the Purpose and Need for the project (see Section 3.1 of the FEIS for a more detailed discussion of the range of options and why they were deemed unacceptable). With elimination of the above options, the remaining alternative was to build a new crossing with the primary issue being to decided where.

The number of potential crossings of the Fox River is quite large; larger than it is feasible to analyze in detail within reasonable time frame and budgets. Therefore, a screening process was used to focus efforts in evaluating and refining the most promising corridors. That screening process eliminated corridors for not satisfying the Purpose and Need for the project or for having "fatal flaws." To satisfy Purpose and Need, a proposed corridor needed to integrate into the transportation network by satisfying more than a local need and having logical termini that satisfied this need in a safe manner. Fatal flaws were defined as impacts to the manmade or natural environment that were unacceptable, unavoidable and immitigable. This screening process, the reasons and history are documented in the FEIS (sections 1.1.2 and 6.1).

An early screening was completed in 1990 as part of a committee organized by Congressman Dennis Hastert with the assistance of CATS, the designated Metropolitan Planning Organization (MPO); this was an open public process involving local officials. That screening was reviewed and became a starting point for screening by this project. Public meetings were held in 1993 and 1994 to present the options under possible consideration. The culmination of that screening was the *Corridor Analysis Document*, reviewed and accepted by the Kane County Board in a public process, which documents the basis for the decisions. In 1995 the surviving corridors were presented to the public in another series of public meetings.

Additionally, resource and regulatory agencies were involved via the scoping and NEPA/404 Merger Process in reviewing these decisions (section 6.1of the FEIS). The screening process and decisions were discussed in scoping meetings in 1993. In 1995 Purpose and Need were agreed upon as Concurrence Point 1 of the NEPA/404 Merger Process. Also in 1995 Alternatives to be Carried Forward were agreed upon as part of Concurrence Point 2 of the NEPA/404 Merger Process.

Many of the options proposed by the comments are of a very local nature, as they acknowledge in their comments; they therefore do not satisfy the Purpose and Need for this project.
Besides selecting the corridors, extensive study went in to refining them to avoid or minimize impacts. Finally, mitigation plans were developed for those impacts.

Comments: The proposed Bolz Road corridor does not support local needs. It serves McHenry County traffic. A local bridge (Miller-Lake Marion corridor) better supports local needs.

Response to comments: The FEIS states that the Purpose and Need is to support Kane County's transportation network, not only to support a local need (sections 1.1 and 1.2 of the FEIS). The proposed Miller-Lake Marion proposal would serve only local needs; it lacks the logical terminus to effectively serve a network need without an extension past Illinois Route 25 or major improvements to Illinois Route 25. This Miller-Lake Marion corridor was also dropped because of unavoidable, direct impacts to sensitive wetlands; while there were concerns regarding impacts to sensitive wetlands from the CC&P/Stearns Road corridor, these were not direct impacts, but possible indirect impacts due to proximity. As an aside, the impacts to Forest Preserve holding from the proposed Miller-Lake Marion corridor would be greater than that from the Bolz Road corridor (confirmed in conversation with staff from Kane County Forest Preserve on January 23, 2002). With its connections to Illinois Route 31 and 25, among other roads, the proposed Bolz Road corridor also supports local needs.

Comments: The proposed Bolz Road interstate highway will cause more harm than good. An interstate highway is inappropriate to the needs of the area.

Response to comments: Nowhere does the FEIS refer to an interstate highway as a proposed alternative. The option proposed for the Bolz Road corridor, a four-lane arterial, was developed to be sensitive to the local environment.

Comments: The Section 4(f) evaluation is flawed because alternatives were not properly considered. This flawed alternatives analysis renders the Section 4(f) evaluations invalid. The Section 4(f) evaluation is flawed because historic properties were not evaluated. Dundee Township Park District decision was improperly influenced. The Section 4(f) evaluation is flawed because historic property studies were not completed.

Response to comments: It is unclear whether this comment refers to the use of Section 4(f) lands and associated impacts to the Fox River Shores Forest Preserve along the Fox River or the Dundee Township park (Hickory Hills) at the eastern terminal of the project, or both. The disposition either way follows. The Section 4(f) analysis did discuss alternatives (sections 3.2, 5.3 and 5.5 of the FEIS). Short of not building the corridor, avoidance was not prudent and feasible; not building the corridor did not satisfy the Purpose and Need for the project. For the forest preserve property the basic problem is that there are forest preserve properties paralleling the Fox River at most of the locations outside of the urban centers. For the Dundee Township parcel, numerous homes would have been required for total avoidance. Besides the alternative analysis, there was also a discussion of minimization and mitigation. The crossing of the Fox River in the Bolz Road corridor was chosen at a location where the Forest Preserve narrows. Also, the roadway will be on structure over the Forest Preserve. With the proposed mitigation plan the net result of the project is an increase in park and forest preserve holdings.

Both the Kane County Forest Preserve District and the Dundee Township Park District have been actively involved in the development of this project and have not stated objections to the plan, including mitigation measures, as currently proposed. Agreements by Kane County with the Dundee Township Park District and with the Kane County Forest Preserve are included in the coordination documentation section of the FEIS (see Vol. 3, section on 4(f), agreements dated September 12, 2000). These agreements were executed by these agencies to best serve the needs of their constituents. Any monies or other items contained within the agreement were directed to public entities to use for the benefit of their constituents; the implication of improper influence is

unwarranted.

Historic properties were evaluated and the SHPO concurred with study results (letter of 12/28/01).

Comments: The EIS overlooked the proposed state park on the Brunner Site (west bank of the Fox River). The Brunner site should be preserved for open space.

Response to comments: This project has had extensive coordination with IDNR and the Kane County Forest Preserve District (KCFPD). No mention of a state park ever came up. The proposed park is indicated as a desire for Kane County planning purposes. As a newspaper clipping included with a commenter's letter indicated, the park is only an unfunded proposal at this time. In fact, the Bolz Road corridor mitigation plan creates over 10 acres of parkland in the area under discussion (Section 5.5.4 of the FEIS).

Follow-up conversations with IDNR on January 15, 2002 indicated that while they would be interested in the property at the right price, early negotiations broke down when it became apparent that the asking price was beyond the desire of IDNR to pay for open space; they are not pursuing the matter any further. Based upon newspaper clippings, it appears that there is development pressure on the parcel.

Discussions of January 23, 2002 with staff from the Kane County Forest Preserve indicated that the road would not represent a major impediment to developing a park, if the parcel were available at a suitable price.

Comments: Environmental justice issues are misrepresented or ignored. Contributing to this was the use of 1990 census data rather than 2000 census data. The project area is misrepresented as high income. The loss of immediate access to the roadway network (Illinois Route 25) is an environmental justice issue.

Response to comments: Environmental justice was evaluated in the Bolz Road (section 2.2.1.5 and 4.2.1.6 of the FEIS). Year 1990 data was used because year 2000 data were not complete at the time the FEIS was being finalized. Nevertheless, the FEIS does recognize a sizeable Hispanic community in tracts adjacent to the corridor (tracts 8502.01 and 8503.01 are adjacent and tract 8501.00 is the tract of the project -see Exhibits 2.2-3 and 2.2-3A and Table 2.2-5), and notes the income levels of these tracts (Table 2.2-6), which while lower than adjacent averages still do not meet the HHS poverty level criteria.

The proposed road does not affect residents in lower income/minority concentration areas; the roadway curves away from these areas to the maximum extent possible given right-of-way constraints to limit proximity impacts to residents and Woodlands School and to minimize impacts to the Hickory Hills Park site. While the Fox View apartments are cited as a subsidized housing facility to be affected, the closest unit is 165 meters (550 feet) from the roadway and will suffer no adverse impact.

The Hickory Hills park site will not be adversely affected. Park property will be converted to roadway usage on the north side of the park, away from the low-income/minority population. Working in concert with the Dundee Township Park District, a mitigation plan was developed that expands the park (for a loss of 2.6 hectares (6.6 acres), they will receive 3.8 hectares (9.4 acres) adjoining the site) and enhances access (see Section 5.5 of the FEIS).

Access to Illinois Route 25 from the existing Bolz Road will be revised, making trip longer for some. This impact is unavoidable to maintain safe operations at the new intersection of Illinois Route 25 with the new Bolz Road. Some residents will need to drive approximately an extra 480 meters (1600 feet) to access Illinois Route 25. Since this distance increase applies to driving, the net increase in travel time would be approximately 1 minute. Walking distance will not be increased. Additionally, traffic adjoining the back of the lower income/minority neighborhood will be reduced - a net benefit to the community.

Comments: The EIS misrepresents the position of the Carpentersville board on the project; they oppose the project. The EIS also ignores the referendum rejecting the corridor.

Response to comments: The board at one time had supported the project, but later rescinded that support. Unfortunately, this was not reflected in the FEIS.

The Village of Carpentersville adopted in 1998 a "Comprehensive Plan" that expressed ambivalence toward the Bolz Road Corridor. It noted that with development proceeding, the corridor was necessary to support growing traffic demand, reduce circuitous traffic, contribute to the success of commercial developments and enhance access, aiding in the utilization of existing facilities and resources to meet the needs of local residents and businesses. Disadvantages include impacts to adjoining property owners, loss of park property, introduction of non-local traffic within Carpentersville and impacts to the natural environment.

In January of 2002 the Village Board again considered the Bolz Road Corridor and voted 4-3 to deny support to the Bolz Road corridor. One factor that was referenced as having influenced that decision was the need for eminent domain to purchase property. While eminent domain is certainly possible, the County's preference would be to negotiate before condemning.

A nonbinding advisory referendum was conducted November 4, 1997 in Dundee (the results provided by a resident are included in the documentation of the Record of Public Hearing of the FEIS). The results indicate the votes supporting the proposed crossing were less than those opposing (3028 v. to 3126).

The writers of the FEIS did not choose to misrepresent the Village Board position, but instead erred. As for the referendum, the writers were aware and should have acknowledged the nonbinding advisory referendum. However, the referendum would not have changed the impact assessment of the corridor.

Comments: The potential for hazardous waste from the Fox Valley Gun Club has been ignored. This is especially important because the Miller/Lake Marian corridor was dismissed because of hazardous waste.

Response to comments: The potential lead contamination at the Fox Valley Gun Club was discussed in Section 4.2.12 of the FEIS. The stipulation in the FEIS is that any material that is to be removed will be sampled prior to removal and disposed of in accordance with applicable State and Federal requirements. Roadway design will minimize or avoid the generation of hazardous and special waste to the maximum extent practical. Additionally, the roadway traverses the southern area of the Gun Club, an area that serves primarily as the entrance and is likely to have lower levels of lead.

The comment regarding the significance of hazardous waste to the Miller/Lake Marian corridor in the dropping of that corridor from consideration is misleading. As noted in the *Corridor Analysis*

Document, the fatal flaws in the Miller/Lake Marian corridor were unavoidable impacts to wetlands and habitats and that the proposed road lacked the continuity to satisfy the Purpose and Need expressed in the FEIS. Potential hazardous waste sites were not a determining issue.

Comments: Land use conversions from undeveloped to developed will occur or be accelerated because of the project. This process will have adverse effects, such as to groundwater or traffic congestion. The EIS is not in conformance with the County's 2020 Land Management Plan.

Response to comments: Land use conversion is occurring at a rapid rate in the project area and throughout the County, regardless of this project. The permitting, zoning and planning issues relating to conversion are dependent upon decisions by local and County officials. In fact, the project was coordinated with the Kane County Development Department. The project is located in a designated Urban Corridor in the *2020 Land Resource Management Plan*; this is the area where population growth is anticipated and where municipal planning and community development programs have been and are being developed to deal with this growth. The County has found that the project is not inconsistent with the County's goals (Volume 3 of the FEIS, letter of 6/18/97 from Kane County Regional Plan Commission and letter February 21, 2002).

Comments: The bird surveys are flawed. Egrets and black crowned night herons have been observed in the area. They were conducted at the wrong time of year. The EIS also does not address the impact to migrating birds from the project.

Response to comments: The Illinois Natural History Survey (INHS) bird surveys were conducted in fall, winter, and spring including the breeding season. All of the observed birds were included in the FEIS, including the black-crowned night heron. Although vehicles using the proposed new bridge will introduce increased light and noise levels to the location, bird migration will not be disrupted. Foraging habitat will be slightly reduced; however, many large tracts of upland forest will remain as will foraging areas both north and south of the proposed bridge. A bridge will not inhibit the movement of birds flying up and down the river corridor. (FEIS page 4-72 and 4-73).

We have also received concurrence from the Illinois Department of Natural Resource (letter of 2/6/01 in Vol. 3 of the FEIS and comment letter of 12/28/01 from INPC) and the U.S. Fish and Wildlife Service (no objections noted in letter of 12/19/01) on the presence and impacts to threatened and endangered species.

Comments: The EIS missed a forested floodplain wetland at the northeast corner of Bolz Road and the bike path was not identified. It will be impacted by the project.

Response to comments: : The INHS conducted the inventories used to classify wetlands and ground cover types. They classified the area noted as a floodplain forest because it did not meet the criteria to be classified as a wetland (FEIS page 2-65).

Comments: The EIS does not address the impacts of the bridge to the Fox River. It does not address storm water runoff, impacts of chloride (including salt spray) and loss of habitat.

Response to comments: In keeping with developing Kane County Stormwater practices, the drainage design has been refined to provide detention and sediment trapping before runoff from the roadway or the bridge enters the Fox River. On the west side of the Fox River, the Bolz Road corridor intercepts three minor drainage swales, two of which drain to the Fox River and one (western-most) which drains to the Kishwaukee River. Runoff from the proposed road corridor will be directed to each of these swales in general accordance with existing drainage patterns

(FEIS page 4-67).

Furthermore, the FEIS states that Illinois General Use Water Quality Standards were not violated for concentrations of pollutants such as lead and chlorides; this includes chlorides from salt spray. The incremental changes associated with this proposed road crossing will not impact existing fish, benthic, or mussel populations based on these standards (FEIS page 4-67). The INHS found that mussels, macroinvertebrates and fish populations were not the highest quality as: 1) substrate in the Bolz Road crossing area is too silted to provide a thriving mussel population (FEIS page 2-61), 2) aquatic macroinvertebrates were largely represented by species able to live in poorly oxygenated or hypoxic waters, and 3) minnow, carp and sunfish families represented the largest number of fish species. Impacts to the fish, mussel, and benthic communities would be minimal based on the INHS census.

The FEIS states that the Bolz Road Corridor primarily consists of agricultural areas west of the Fox River, and developed lands, parks, and upland forest east of the river within the Village of Carpentersville. Many of the plant communities east of the Fox River are generally remnants of large communities that have already been impacted by existing roadways, residential development and sand/gravel pit operations. West of the river, construction of the Bolz Road extension would primarily impact what was cropland and what is rapidly becoming housing developments.

As noted in a previous comment, habitat issues have been addressed and no objections were raised to the assessment of the existing conditions or of impacts from the IDNR or the U. S. Fish and Wildlife Service.

Comments: The EIS does not consider the "Downstate Forest Preserve Act of Illinois" that stipulates a unanimous vote of the County Board is necessary to convert Forest Preserve Property. Forest Preserve property cannot be condemned under this act.

Response to comments: The FEIS carefully considers the "Downstate Forest Preserve Act." Contrary to the comment, the Downstate Forest Preserve Act does not stipulate or otherwise require a unanimous vote of the County Board to convert Forest Preserve property. Additionally, the only statutory provision contained in the Downstate Forest Preserve Act that requires a unanimous vote of the Forest Preserve Board to "convert" Forest Preserve property only applies to counties with a population of less than 360,000. The provision, (70 ILCS 805/6d), states in part:

> *"The board of a forest preserve district within a county which has a population of no more than 360,000 may trade any one or more parcels of land owned by the district for one or more parcels of land owned by one or more individuals or any public or private entity whenever the board determines the trade to be advantageous to the district."*

Kane County currently has a population of approximately 405,000 and therefore Section 6d does not apply. The authors of the comment(s) are correct in the statement that Forest Preserve property cannot be condemned. 70 ILCS 805/5e states in pertinent part: "*Property owned by a forest preserve district shall not be subject to eminent domain or condemnation proceedings.*" The project does not, however, propose the condemnation of any Forest Preserve property.

The Downstate Forest Preserve Act generally, the Illinois Constitution of 1970 and the Illinois Intergovernmental Cooperation Act provide adequate authority for the proposed use of Forest Preserve property as contemplated by the project. The Forest Preserve District and the County of Kane have entered into agreements relative to the impacts on any Forest Preserve property within the proposed alignments (see Volume 3 of FEIS - Coordination Documentation, Section on

Section 4(f) - agreements dated September 12, 2000). These agreements specify minimum replacement property and construction considerations. The net result will be a net enhancement to Forest Preserve holdings.

Comments: Community cohesion will suffer as a result of the project.

Response to comments: The proposed Bolz Road corridor does not split any existing neighborhoods or isolate community resources from residential areas. In fact, community cohesion will be enhanced in that the proposed Bolz Road corridor will serve as a community development linkage and provide for neighborhood interaction between areas currently separated by the Fox River. The project will aid in promoting long-term community cohesion. This position has been agreed upon by the Kane County Development Department in a letter dated February 21, 2002.

Comments – A public park (assumed to be Hickory Hills site) will be adversely affected by traffic, including safety issues and air pollution. A resolution of the impacts to the park must be reached before the Record of Decision.

Response to comments: As a result of coordination with the Dundee Township Park District and the Woodlands School, the road has been relocated to the north side of the park, away from any used area (see Sections 3.2.2 and 5.5 of the FEIS) and, therefore, safety concerns. A side benefit to the park will be improved access and a net larger area (by 1.1 hectares (2.8 acres)). Unfortunately, a statement in the FEIS (Section 4.2.1.3) on community cohesion carried over from the DEIS portraying impacts from the road between the park and school as an unresolved issue. The discussion on Section 4(f) impacts (section 5.5.4 of the FEIS) accurately portrays the resolution of this issue.

An Intergovernmental Agreement between Kane County and the Dundee Township Park District was executed on June 21, 2000 (see Volume 3 of the FEIS - Coordination Documentation - Section 4(f) section). This agreement with the agency responsible for the park implies that they do not believe that the impacts to the park with the proposed mitigation plan result in an adverse impact to the park. As for air quality, the analyses for "worst case" scenarios indicated no local air quality impacts (see Section 4.1.10 of the FEIS).

Comments: The EIS states that a resolution will be reached on objections noted by the Park District and the School District to the Bolz Road Corridor before the Record of Decision is reached.

Response to comments: As noted in the previous comment and response, a statement from the DEIS was inadvertently left in the FEIS. The statement implied that there were still outstanding issues due to the Bolz Road Corridor isolating Hickory Hills Park from Woodlands School (section 4.2.1.5 of the FEIS). In other sections (3.2.2.1, 4.2.3 and 5.5.4 of the FEIS) this statement was corrected to indicate that the road has been moved to eliminate the cited objection.

Comments: The EIS does not adequately address economic impacts to the local communities. There will be a loss to nearby properties due to poor access and diverting traffic away from business centers. Business activity will be toward McHenry County. Nearby properties will lose value as a result of the proposed road.

Response to comments: No businesses will suffer reduced access. Business also will not suffer because the near Bolz Road corridor will enhance access potential and help avoid some of the

bottlenecks of the existing system. If anything, access to local businesses will be enhanced by more capacity in the roadway network.

There is no evidence to support the contention that indicates that properties, residential or business, will lose value as a result of the proposed roadway. Additionally, the new homeowners in Algonquin west of the Fox River have been informed of the roadway potential with their purchase, so the property values reflect the possible presence of the road. For the owners east of the Fox River, the road is behind their property, further away than the current Bolz Road, which will have less traffic on it than it currently does. The residents will have improved access, which may cause a net benefit to their property.

The Kane County Development Department has reviewed the project in light of the comment and finds the project consistent with community and economic development goals (letter dated February 21, 2002)

Comments: The Bolz Road corridor will adversely affect groundwater. It will reduce recharge areas, which will cause groundwater levels to drop, possibly even causing oxidation in the aquifer. Salt will infiltrate adversely affecting water quality.

Response to comments: Potential effects upon groundwater recharge and groundwater quality were considered in the Bolz Road Corridor east and west of the Fox River. Reduction in recharge area is associated with increasing paved areas. As stated in Section 4.2.6.3 of the FEIS, the increase in pavement or impervious area in the Bolz Road Corridor compared to the total recharge area is quite small. This fractional change will yield a corresponding minimal change in groundwater. No adverse impact is anticipated.

The most frequently utilized groundwater aquifer west of the Fox River is protected by 18 meters (60 feet) of sand and gravel aquifer and an aquitard. These geologic features retard chloride migration west of the Fox River. East of the Fox River roadway, design features minimize potential chloride infiltration.

All roadway runoff is collected and directed to ditches and detention basins. Thus, the possibility of sheet runoff with direct infiltration is reduced. Ditches and detention basins will also be lined where shallow granular materials are present. These features will minimize incremental inputs. Calculating the incremental increase in chloride loading compared to the recharge area, indicated that chloride levels would not increase in the aquifer.

Throughout the Chicago metropolitan area groundwater supplies have been strained with levels dropping due to reduction of recharge areas, and, more importantly, increased demand. Any solution to this problem must recognize both parts. One common solution has been to turn to new supplies, such as Lake Michigan water, though this is not always a solution because of limited supply and high cost.

This roadway does not generate additional demand, though it might be argued that it encourages development (as noted previously, development is proceeding, regardless). Does it affect supply? As the comment notes the actual ground coverage of the roadway relative to any recharge area is minimal. Therefore, any solution will require measures of a larger scale than simply stopping this road. If the solution is to limit demand, this road is irrelevant. The County and municipalities need to evaluate development in critical areas. If the solution is to preserve recharge areas, critical and sufficient recharge areas must be identified to support expected demand. This will require a major commitment and expense by the County and local governments to prevent additional lands

from being developed or requiring very restricted types of development. Regardless, this road is not part of the problem. Additionally, the roadway is in the proposed Urban Corridor noted in the *2020 Land Resource Management.* This means the County and the communities are aware of anticipated development. Also, this makes the roadway consistent with the "water resource objectives and policies of the *2020 Land Resource Management Plan* and is supported by the Development Department Staff" (letter of February 21, 2002).

Comments: The energy impact assessment is superficial.

Response to comments: The analysis (section 4.1.17 of the FEIS) conforms to current guidelines for transportation projects. The FEIS acknowledges that construction of the project will require the commitment of energy resources.

Comments: The noise impacts and abatement issues are not resolved. Perhaps a depressed roadway would help.

Response to comments: The noise analysis is complete. Under the guidelines of the Illinois Department of Transportation policies on implementing noise barriers, noise walls were not found to be warranted in that the roadway noise calculated did not exceed noise abatement criteria, they were not effective in that they could not achieve substantial noise reduction or the costs were excessive relative to the number of homes benefited (Section 4.2.11 of the FEIS).

In cooperation with local officials during design development, the County will develop plans to install berming and landscaping, or other possible measures, near receptors where right-of-way is available. A depressed roadway is not feasible near noise receptors because local access must be maintained. A depressed roadway is also not feasible because to achieve adequate noise attenuation would render the drainage and detention impractical.

8. Conclusion

The FHWA has reached its decision based upon information and analysis contained in the FEIS and outlined in this document. FHWA's decision concludes that each of the build alternatives for three of the five corridors as described in this document herein: 1) best satisfies Purpose and Need, 2) poses the least impacts to the natural and human environment, 3) has been selected based on processes in compliance with NEPA and other applicable requirements, 4) each remains eligible for Federal Highway funding, and 5) Kane County, as project sponsor, may advance each through the project development process.

Date: 5/13/02

Signed: Norman R. Stoner

Norman R. Stoner, P.E.
Division Administrator
Federal Highway Administration

ATTACHMENT TO RECORD OF DECISION
CC&P WATER QUALITY SUMMARY

Introduction

The Illinois State Geological Survey (ISGS) monitored surface water and ground water quality in the Brewster Creek watershed along the CC&P/Stearns Road Corridor from April 1999 to July 2000. The purpose of this monitoring was to identify chloride impacts to surface water and ground water resources resulting from current road salting activities.

Chloride samples were collected at eight surface water and seven ground water monitoring points at weekly to biweekly intervals. These samples were supplemented by continual specific conductance measurements at six surface water and five ground water monitoring points. Specific conductance is an indirect measure of total dissolved solids in water, and chloride is a major dissolved constituent in water. Therefore, the specific conductance measurements provided an indicator of chloride changes between sampling events. The duration of this monitoring was relatively short and is therefore best suited to interpretation of short-term trends or spikes. Results of this sampling effort were provided in an ISGS letter to the Illinois Department of Transportation dated July 10, 2000. The data obtained by ISGS are summarized and interpreted below by the EIS team.

Surface Water Results

The surface water sampling data revealed both short-term spikes and longer-term seasonal increases in chloride and specific conductance data. Mean (baseline) chloride concentrations, collected before the first road salt application (September 1999 through November 1999), were 39 to 75 mg/L, except in one South Elgin Fen/Roloff Pond monitoring point (123 mg/L at SW-10). Mean concentrations measured during the road salt period (December 1999 through February 2000) were 15 to 50 mg/L higher than baseline concentrations in three (SW-1, SW-8, and SW-9) of the four monitoring points along the Main and East branches of Brewster Creek, and unchanged or lower than baseline at the other three monitoring points near South Elgin Fen. The other Brewster Creek monitoring point, SW-7, was at the upstream edge of the study area and was downstream of forest preserve lands, rather than roads and developed areas. Chloride concentrations at that monitoring point showed little evidence of road salt impacts. The maximum observed chloride concentrations at the three points that exhibited concentration increases during the road salting period were 131 to 220 mg/L in February 2000, a period of relatively warm weather and snowmelt, suggesting that these concentrations reflect chloride that had been frozen in snow or ice, possibly supplemented by additional salting at night when temperatures dipped below freezing.

The specific conductance measurements provided estimates of the actual peaks of each short-term spike in chloride concentration that could not be measured using intermittent sampling. During the salting period shown above, ISGS reported short-term specific conductance spikes in surface water up to 2,000 µS/cm (which correlates to approximately 500 mg/L chloride). These specific conductance spikes typically lasted from several hours to less than a week. ISGS also noted a milky white discharge from the concrete pipe company directly upstream of SW-8, which may have affected chloride readings at that monitoring point.

Overall, these data indicate that road salt in runoff causes both short-term and seasonal chloride concentration increases in Brewster Creek and its tributaries and South Elgin Fen; however, other sources also appear to affect chloride concentrations. No conclusions were drawn concerning long-term trends due to the short timeframe of the investigation.

APPENDIX C

DUNHAM ROAD BRIDGE DESIGN DRAWINGS