

IEPA Log No.: **C-0308-12**
CoE appl. #: **2011-00695**

Public Notice Beginning Date: **October 4, 2013**
Public Notice Ending Date: **October 25, 2013**

Section 401 of the Federal Water Pollution Control Act
Amendments of 1972

Section 401 Water Quality Certification to Discharge into Waters of the State

Public Notice/Fact Sheet Issued By:

Illinois Environmental Protection Agency
Bureau of Water
Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-3362

Name and Address of Discharger: Illinois Department of Transportation, 201 West Center Court,
Schaumburg, IL 60196

Discharge Location: Section 21, T34N, R13E of the 3rd P.M. in Will County near University Park

Name of Receiving Water: Unnamed tributaries of Hickory Creek and unnamed wetlands

Project Description: Improvements at I-57 and Stuenkel Road.

The Illinois Environmental Protection Agency (IEPA) has received an application for a Section 401 water quality certification to discharge into the waters of the state associated with a Section 404 permit application received by the U.S. Army Corps of Engineers. The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice. The last day comments will be received will be on the Public Notice period ending date unless a commenter demonstrating the need for additional time requests an extension to this comment period and the request is granted by the IEPA. Interested persons are invited to submit written comments on the project to the IEPA at the above address. Commenters shall provide their names and addresses along with comments on the certification application. Commenters may include a request for public hearing. The certification and notice number(s) must appear on each comment page.

The attached Fact Sheet provides a description of the project and the antidegradation assessment.

The application, Public Notice/Fact Sheet, comments received, and other documents are available for inspection and may be copied at the IEPA at the address shown above between 9:30 a.m. and 3:30 p.m. Monday through Friday when scheduled by the interested person.

If written comments or requests indicate a significant degree of public interest in the certification application, the IEPA may, at its discretion, hold a public hearing. Public notice will be given 30 days before any public hearing. If a Section 401 water quality certification is issued, response to relevant comments will be provided at the time of the certification. For further information, please call Thaddeus Faught at 217/782-3362.

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Fact Sheet for Antidegradation Assessment

Illinois Department of Transportation – Unnamed Tributaries to Hickory Creek and Unnamed Wetlands – Will County

IEPA Log No. C-0308-12

COE Log# LRC-2011-00695

Contact: Brian Koch (217) 558-2012

October 4, 2013

The Illinois Department of Transportation (“IDOT” or “Applicant”) has applied for Section 401 water quality certification for impacts associated with their proposed improvements to I-57 at Stuenkel Road, located in Section 21, Township 34 North, Range 13 East. IDOT is proposing a new full access interchange at this location to allow for additional access to and from I-57 in this region. An existing two-lane bridge along Stuenkel Road over I-57 is currently closed due to disrepair; therefore there currently is no access across I-57 at Stuenkel Road. The proposed project would include new interchange ramps, new box culverts under I-57 and the ramps, the replacement of the collapsed culvert on Stuenkel Road, and reconstruction of Stuenkel Road and roadway intersections from east of Ridgeland Avenue to east of Central Avenue. Detention ponds would be constructed in the southeast and southwest quadrants of the interchange, and compensatory storage areas would be constructed in the northeast and northwest quadrants of the interchange.

Construction of the project would permanently impact 1.63 acres of two unnamed jurisdictional wetlands (herein identified as “Wetland 17” and “Wetland 18”) and 0.31 acres of two unnamed streams, one of which is a tributary of Hickory Creek, and the other being a headwater tributary to the tributary of Hickory Creek. Construction of an access ramp would require 0.57 acres of fill in Wetland 17, and road widening of Stuenkel Road would require 1.06 acres of fill in Wetland 18. Approximately 0.22 acres of the unnamed tributary of Hickory Creek would require realignment to accommodate the widening of Stuenkel Road. In addition to the stream realignment, a downstream, 0.05 acre portion of this stream would be permanently impacted by the installation of box culverts due to construction of ramps A and B, and 0.04 acres of the headwater tributary to this tributary would be permanently impacted due to the widening of Stuenkel Road.

Mitigation for stream impacts would be provided through the proposed stream realignment, which would provide 0.29 acres of new open water channel and 0.14 acres of adjacent perennial wetland plantings (0.43 total acres of mitigation, 1.4:1 replacement ratio). The tributary would be relocated to the south of Stuenkel Road and would include three rock vanes and associated scour holes, with rip rap for stabilization and an upstream weir. The realigned tributary would be excavated under dry conditions and stabilized prior to the reestablishment of flow. The realigned tributary would have an average vegetative stream buffer width of 45 feet on the north and greater than 50 feet on the south. Additional details regarding the stream realignment, including the native vegetative planting plan, is included in the draft April 12, 2013 document by Hey and Associates, Inc. entitled *Stream Re-Alignment Project Mitigation Document*. Impacts to the jurisdictional wetlands would require compensatory mitigation at a 1.5:1 ratio (minimum of 2.45 acres of required mitigation). Mitigation for the proposed wetland impacts would be compensated for at the Thorn Creek Headwaters Preserve owned by the Forest Preserve District of Will County, which is located approximately two miles southeast of the project area. Wetland mitigation would be carried out as described in the document entitled *Wetland Mitigation Plan* prepared by the Forest Preserve District of Will County, which was included in the Applicant’s letter dated March 21, 2013. In summary, compensatory mitigation would be conducted on a 92.8 acre parcel of land, with mitigation consisting of 29.7 acres of wetland restoration, 3.6 acres of wetland enhancement, 4.6 acres of creek corridor enhancement, and 49.9 acres of upland buffer establishment. The mitigation plan is equivalent to a total of at least 26.4 mitigation credits, which is well in excess of the minimum amount of credits (2.45 acres) required for mitigation. Species used for planting and seeding would be tailored specifically for wetland restoration, wetland enhancement, creek corridor enhancement, and upland buffer establishment. The wetland mitigation plan also includes performance standards and monitoring requirements for a period of five years, along with a long term management plan to be carried out by the Forest Preserve District of Will County.

Identification and Characterization of the Affected Water Body.

The two unnamed wetlands (herein referred to as “Wetland 17” and “Wetland 18”) to be permanently impacted by the proposed project are General Use waters with zero 7Q10 flow. Wetland 17 is a 1.62 acre low-quality forested wetland (Floristic Quality Index (FQI) value of 4.9 and Native mean C (C) value of 1.8) composed primarily of sandbar willow and reed canarygrass, whereas Wetland 18 is a 4.32 acre low-quality emergent wetland (FQI = 9.4, C = 2.0) composed primarily of narrowleaf cattail and reed canarygrass. The wetlands have not been assessed under the Agency’s 305(b)/303(d) program and have not been given an integrity rating or been listed as biologically significant in the 2008 Illinois Department of Natural Resources publication *Integrating Multiple Taxa in a Biological Stream Rating System*. The wetlands are not enhanced in regards to the dissolved oxygen water quality standard.

The unnamed tributary of Hickory Creek and the headwater tributary to this stream are General Use water bodies with zero 7Q10 flow at the proposed project location. The streams have not been assessed under the Agency’s 305(b)/303(d) program and have not been given an integrity rating or been listed as biologically significant in the 2008 Illinois Department of Natural Resources publication *Integrating Multiple Taxa in a Biological Stream Rating System*. The streams are not enhanced in regards to the dissolved oxygen water quality standard. In northern Illinois, streams with one square mile of watershed or less are characterized as 7Q1.1 zero flow streams and are therefore expected to have at least seven days of continuous zero flow nine out of ten years. Given this flow regime, streams meeting the definition of possessing zero 7Q1.1 flow are not subject to a biological characterization by the Applicant. However, the unnamed tributary of Hickory Creek has a watershed area of approximately 2.50 square miles at the project site and is therefore considered a positive 7Q1.1 flow stream. At the request of the Agency, the Applicant contracted the Illinois Natural History Survey (INHS) to perform a physical, chemical, and biological survey of the unnamed tributary of Hickory Creek near the project location. The results of this study are summarized in two separate INHS documents prepared on July 1, 2013. A brief summary of these findings is provided below.

The physical characterization of the stream was conducted during a preliminary visit on May 07, 2013, as well as during the chemical and macroinvertebrate survey conducted on June 04, 2013. A 300-foot reach of the unnamed tributary of Hickory Creek, located immediately upstream of areas to be impacted, was selected for the stream survey. Stream width averaged 10 feet and stream depth averaged 15 inches, with an average flow of 0.63 feet/second at the time of sampling. A “good”, bordering on “excellent”, riparian zone exists along the reach and is dominated by riparian grasses and a few isolated shrubs and small trees. Substrates were dominated by loose to moderately compacted mud and silt overlying hardpan clay. The stream was found to have a habitat assessment score of 64 using the Agency’s *Qualitative Stream Habitat Assessment Procedure (SHAP)*, which places this stream as being in “fair” condition. Chemical measurements taken at the site on June 04, 2013 included temperature, dissolved oxygen, conductivity, total dissolved solids, pH, turbidity, and salinity. Water samples were also collected for laboratory analysis of metals, nutrients, and other inorganic and organic constituents. Laboratory results confirmed that all measured parameters were meeting water quality standards.

A survey of the macroinvertebrate community inhabiting the area was performed on June 04, 2013 along the 300-foot reach previously described. Macroinvertebrates were collected and results were compiled using Agency protocols. A total of 287 aquatic macroinvertebrates were collected which consisted of three phyla, three classes, six orders, nine families, and at least thirteen taxa. Of the 287 specimens collected, 108 were tubificid worms and 140 were Chironomids (midges), which are highly tolerant taxa. A macroinvertebrate Index of Biotic Integrity (mIBI) score of ≥ 41.8 is typically required for a stream to be deemed by the Agency as being fully supportive of aquatic life use. The overall mIBI score for the unnamed tributary of Hickory Creek was 19.21, which places this stream in the “poor” category in regards to the macroinvertebrate community present. No unique, rare, or exotic aquatic macroinvertebrate species were observed, and none of species collected are listed or under consideration for listing as either state or federally threatened/endangered.

A survey of the fish community inhabiting the area was performed on June 11, 2013 along a 400-foot reach of the unnamed tributary of Hickory Creek near the proposed stream realignment location. Fish were collected via a 10-foot minnow seine with one-eighth inch mesh. The survey was conducted under optimal conditions for this time of year, as stream depth and velocity at the time of sampling was greater than normal given a recent rain event. Stream width ranged from 3 to 6 feet with a maximum depth of 3 feet. Substrate was dominated by sand and silt, but small gravel deposits were observed at several locations. Nine species of fish representing four families (Cyprinidae, Ictaluridae, Centrarchidae, and Percidae) were collected. Over half of the 106 organisms collected consisted of two species of Centrarchids, bluegill (47 individuals) and green sunfish (18 individuals). One intolerant species, the hornyhead chub, was collected. No species listed as either state or federally threatened/endangered were collected or observed. Low habitat diversity and the small watershed size at this location likely accounted for the low abundance and diversity of fishes found. These results are consistent with that expected of a headwater stream in this region, as all species encountered commonly occur in tributaries of the Des Plaines River drainage basin in northeastern Illinois.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

Pollutant load increases that would be associated with this project include increases in suspended solids during construction activities and chloride from winter road salting of the on-ramps and off-ramps. Grading operations would be performed during low-flow conditions in order to minimize loadings of suspended solids to the unnamed tributary of Hickory Creek. Yearly chloride loadings from the new roadways is estimated at 31 tons/year, but this would be offset by a chloride reduction of 59 tons/year in the Hickory Creek watershed through IDOT's purchase of a calibrated slurry truck to be used in the New Lenox yard. No net increase of chloride loading to the Hickory Creek watershed would occur as a result of this project. Permanent fill impacts to the 1.33 acres of wetlands and 0.69 acres of stream would permanently remove the aquatic life uses of these areas.

Fate and Effect of Parameters Proposed for Increased Loading.

The increase in suspended solids would be local and temporary. Erosion control measures, including compensatory storage basins, detention ponds, and bioswales, would be utilized to retain runoff onsite to the greatest practical extent and minimize downstream transport of suspended solids. The permanent loss of natural stream habitat due to realignment would be offset through the reestablishment of the stream channel to the south of Stuenkel Road. The stream channel would revert to its previous condition of aquatic life support soon after realignment or would potentially be improved due to the addition of stream enhancements. The permanent loss of the remaining waters would be offset with compensatory mitigation as previously described.

Purpose and Social & Economic Benefits of the Proposed Activity.

The purpose of the project is to provide improved access to I-57 via the Stuenkel Road interchange in order to accommodate the projected growth in travel demand within the project corridor.

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.

Although unavoidable impacts are necessary to meet the goals of the project, impacts to wetlands and other natural resources have been minimized to the greatest extent practicable. The construction of the proposed project would follow guidelines set forth by the Agency and USACE. The Applicant has provided a best management and monitoring plan which outlines the Applicant's efforts to minimize pollutant loading and environmental impacts (Attachment 7 of April 12, 2013 IDOT correspondence to USACE). Included are the plans for compensatory storage basins, detention ponds, and bioswales, as well as vegetative plantings and vegetation maintenance/monitoring, all of which would aid in minimizing erosion and increases in suspended solids.

The Applicant provided seven “build alternatives” for this project. Each build alternative was assessed by the Applicant using the following criteria: fulfillment of the project purpose and need, estimated construction cost, environmental impacts, traffic operations, affected land areas (right of way and acquisition of land), and impacts to the community and other stakeholders. A “no-build alternative” was also assessed and was evaluated under the same criteria as the build alternatives. Under the no-build alternative, traffic would continue to access I-57 using the existing interchanges to the north and south. However, due to anticipated population growth in the area, traffic at the existing interchanges would become increasingly congested during peak hours. The no-build alternative would fail to satisfy the purpose and need of the project, which is to improve local and regional mobility. Thus, this alternative was rejected. A brief summary of each build alternative is provided below.

- A. Conventional 90° Diamond: This interchange design would consist of linear entrance and exit ramps connecting I-57 to Stuenkel Road. Traffic signals on Stuenkel Road would control traffic entering and exiting the ramps. This alternative would have the lowest estimated construction cost and would require a minimal amount of right of way. However, Alternative A would also have the greatest amount of impacts to jurisdictional waters (2.71 acres) amongst build alternatives. Along with alternative G, this interchange design was selected as a favorable design plan that warranted further consideration.
- B. Parclo - A: This interchange would allow northbound and southbound traffic to exit from I-57 via linear ramps. Traffic entering I-57 from Stuenkel Road would use loop ramps adjacent to the exit ramps. This alternative would have minimal impacts to jurisdictional waters and right of way requirements, but was not recommended due to operational concerns and potential adverse effects to traffic on Stuenkel Road.
- C. Parclo - C: This interchange would allow northbound I-57 traffic to exit to Stuenkel Road via a linear ramp, and southbound traffic via a loop ramp. Traffic entering northbound I-57 would use a loop ramp between the I-57 northbound exit ramp and I-57. Traffic entering southbound I-57 would use a linear ramp south of Stuenkel Road and west of I-57. This alternative would impact the least amount of jurisdictional waters (1.95 acres) and would have minimal right of way requirements. However, alternative C was removed from further consideration due to operational and safety concerns of the exit ramp design, as it would be over its operational capacity and would lead to restrictions caused by the bridge. Additionally, ramps of this design are not geometrically expandable to accommodate future capacity requirements.
- D. Three Quadrant Parclo: This interchange would require three pairs of linear ramps and loop ramps, with the northeast quadrant being the unaffected quadrant. Impacts to jurisdictional waters would be comparable to other build alternatives, but this interchange would require roughly three times the amount of right of way acreage (145.7 acres) compared to other design plans. Additionally, the configuration of the interchange does not provide accessible frontage along Stuenkel Road west of I-57, and there are several operational and safety concerns that make this alternative less preferable. For these reasons, alternative D was not recommended.
- E. Four Quadrant Parclo: This interchange would consist of linear ramps and loop ramps to allow traffic to enter and exit I-57. All traffic movements would be free flow except for both the northbound and southbound traffic exiting I-57, which would instead be controlled by signalized intersections at the ramps onto Stuenkel Road. Impacts to jurisdictional waters would be greater than all other build alternatives with the exception of alternative A, and this interchange would require roughly three times the amount of right of way acreage (142.3 acres) compared to other design plans. Additionally, the interchange configuration is not compatible with future development and the region’s communities’ plans, as it does not provide accessible frontage along Stuenkel Road west of I-57 due to the free flow ramp and its terminal section extending along the majority of the land to Ridgeland Avenue. For these reasons, alternative E was removed from further consideration.
- F. One Quadrant Parclo: This interchange would use linear ramps for entering and exiting I-57 southbound, a loop ramp for entering I-57 northbound, and a linear ramp for exiting I-57 northbound. This alternative would have minimal impacts to jurisdictional waters and right of way requirements, but was not recommended to be carried forward due to concerns regarding the high volumes of vehicles that would turn left onto the northbound I-57 entrance ramp.

- G. One Quadrant Parclo with Northbound Free Flow Ramp: This interchange would use linear ramps for entering and exiting I-57 southbound, a loop ramp for entering I-57 northbound from eastbound Stuenkel Road, a linear ramp for entering I-57 northbound from westbound Stuenkel Road, and a linear ramp for exiting I-57 northbound. Excluding the westbound Stuenkel Road to northbound I-57 free flow ramp, all ramp traffic on Stuenkel Road would be controlled with signalized intersections. Impacts to jurisdictional waters (1.93 acres) would be comparable to most other build alternatives, as would the amount of required right of way acreage (79.1 acres). Along with alternative A, this interchange design was selected as a favorable design plan that warranted further consideration.

Alternatives A and G are the preferred project plans, as they best met the evaluation criteria while having minimal differences in environmental impacts compared to the other alternatives. Ultimately, alternative G was chosen over alternative A due to the geometry proposed in this option, which would provide better overall traffic operations due to its higher level of service at the ramp intersection on Stuenkel Road, its compatibility with future development and expansions, and the support received from the public.

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities.

The IDNR EcoCAT system was consulted on May 21, 2012. It was immediately determined that a protected resource, the Monee Railroad Prairie, may be in the vicinity of the project location. The department evaluated this information and concluded that adverse effects are unlikely. Consultation was terminated in the May 21, 2012 letter from IDNR.

Agency Conclusion.

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time this antidegradation review summary was written. We tentatively find that the proposed activity would result in the attainment of water quality standards; that all existing uses of the unnamed streams and wetlands would be maintained or compensated with mitigation; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity would benefit the community at large by providing enhanced access to and from I-57 and accommodating increased travel demand within this area. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.