

IEPA Log No.: **C-0317-13**
CoE appl. #: **2012-00482**

Public Notice Beginning Date: **April 2, 2014**
Public Notice Ending Date: **May 2, 2014**

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 9, T36N, R12E of the 3rd P.M. in Cook County near the Village of Orland
Park

Name of Receiving Water: Marley Creek, Spring Creek, Unnamed tributaries of Marley and Spring
Creeks, and unnamed wetlands

Project Description: Reconstruction of U.S. Route 6 / Illinois Route 7 / 159th Street.

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.

Fact Sheet for Antidegradation Assessment

Illinois Department of Transportation – Marley Creek, Spring Creek, Unnamed Tributaries of Marley and Spring Creeks, and unnamed wetlands – Cook County

IEPA Log No. C-0317-13

COE Log# 2012-00482

Contact: Brian Koch (217) 558-2012

April 2, 2014

The Illinois Department of Transportation (“IDOT” or “Applicant”) has applied for Section 401 water quality certification for impacts associated with their proposed improvements to US 6 / IL 7 / 159th Street located in both the Village of Orland Park, and Unincorporated Cook County, Illinois.

Improvements to these roadways would extend from east of Will-Cook Road to west of US 45.

Approximately 2.5 miles of US 6 / IL 7 / 159th Street would be widened and reconstructed with two through lanes in each direction with a raised median, resulting in an increase of 6.65 lane miles. The proposed improvements would also include four land bridges, over 3,000 lineal feet of retaining walls, two bridge replacements with multi-cell box culverts and riprap fill for erosion and scour prevention, vegetated swales, closed drainage systems, and compensatory storage basins.

Project construction would necessitate impacts to 5.95 acres of wetlands and waters of the U.S. (WOUS) under the U.S. Army Corps of Engineers’ (USACE) jurisdiction, and 0.47 acres of Illinois Department of Natural Resources (IDNR) jurisdictional wetlands (isolated wetlands). Wetland and stream impacts are unavoidable given the fixed location of the existing roadways and the adjacent presence of these natural areas. Permanent wetland impacts would be associated with grading and filling activities. Other than a small amount of riprap fill and culvert construction in Spring Creek (0.08 acres), the permanent stream impacts are limited to embankment fill for road widening and drainage grading. No loss of stream length would occur and streams would be returned to their previous state following construction. A summary of impacts to USACE jurisdictional waters (wetlands and WOUS) and IDNR jurisdictional waters are provided in the following tables:

Wetland/Waters of the U. S.	Station	Impact (ac)	Mitigation Ratio	Mitigation Required
SITE 1	377+25 to 391+20	1.63	1.5:1	2.45
SITE 1 (WOUS)	380+50 to 406+75	1.19	1.5:1	1.79
SITE 1A	395+00 to 403+00	0.60	1.5:1	0.90
SITE 5	314+95	0.02	1.5:1	0.03
SITE 5 (WOUS)	315+10	0.02	1.5:1	0.03
SITE 7	300+00	1.35	1.5:1	2.03
SITE 7 (WOUS)	304+00	0.08 (0.08 TEMP)	1.5:1	0.12
SITE 12	315+00	0.07	1.5:1	0.11
SITE 13	6+00	0.01	1.5:1	0.02
SITE 15 (WOUS)	10+00	0.06	1.5:1	0.09
SITE 16	372+50	0.92	1.5:1	1.35
TOTAL (JURISDICTIONAL)		5.95 (0.08 TEMP)		8.92

Isolated Wetlands	Station	Impact (ac)	Mitigation Ratio	Mitigation Required
SITE 3	360+25 to 363+00	0.09	1.5:1	0.14
SITE 4	322+25	0.06	1.5:1	0.09
SITE 14	335+00 to 338+00	0.32	1.5:1	0.48
TOTAL (ISOLATED)		0.47		0.71

The applicant is proposing to mitigate the 6.42 acres of permanent impacts by purchasing 9.63 acres of wetland mitigation credit at Towpath Mitigation Bank, which is located in the same watershed as the proposed activities. The 1.5:1 mitigation ratio is suitable given that none of the wetlands to be impacted are of high quality, as all were determined to possess a Floristic Quality Index (FQI) of < 20, and a Native Mean C of <3.5. The USACE would make the final determination on the wetland mitigation plan and would oversee the monitoring and success of mitigation.

Identification and Characterization of the Affected Water Body.

The table below provides a brief summary of the wetlands and streams (denoted as WOUS) to be impacted by the proposed project:

Wetland/ Waters of the U. S.	Area (acres)	Station	FQI ¹	Native Mean C ²	HQAR ³	Wetland/ Waters Type	Dominant Vegetation
SITE 1	1.66	377+25 to 391+20	17.6	2.9	No	forested, marsh, farmed	Eastern cottonwood, box elder, slippery elm
SITE 1 (WOUS)	1.20	380+50 to 406+75	N/A	N/A	No	Marley Creek, unnamed tributary to Marley Creek, open water	N/A
SITE 1A	0.59	395+00 to 403+00	7.4	1.7	No	Wet meadow, open water, forested, farmed	Reed canary grass
SITE 3	0.09	360+25 to 363+00	4.2	1.5	No	Farmed	Common Reed, common wormwood, purple loosestrife
SITE 4	0.06	322+25	8.5	1.9	No	Sedge Meadow, wet meadow, forested	Silver Maple, Green Ash, Prairie cord grass
SITE 5	0.02	314+95	8.3	2.1	No	Tributary to Spring Creek	Black walnut, American elm, sandbar willow
SITE 5 (WOUS)	0.02	315+10	8.3	2.1	No	Tributary to Spring Creek, WOUS, wet meadow	N/A

SITE 7	1.35	300+00	18.8	2.6	No	Wet meadow, forested, marsh	American elm, eastern cottonwood, black willow
SITE 7 (WOUS)	0.16	304+00	N/A	N/A	No	Spring Creek	American elm, eastern cottonwood, black willow,
SITE 12	0.07	315+00	9.0	1.9	No	Marsh	American elm, white mulberry, elderberry, narrow-leaved cattail, riverbank grape
SITE 13	0.04	6+00	9.8	3.1	No	Farmed	Barnyard grass, narrow-leaved cattail
SITE 14	0.32	335+00 to 338+00	3.2	1.0	No	Marsh, farmed	Eastern cottonwood, narrow-leaved cattail, purslane
SITE 15	0.02	5+00 to 6+82	6.7	2.2	No	Tributary to Marley Creek, forested	Eastern cottonwood, black willow, weeping willow
SITE 15 (WOUS)	0.06	10+00	N/A	N/A	No	Tributary to Marley Creek, WOUS, forested	N/A
SITE 16	1.23	372+50	5.7	2.3	No	Marsh, Farmed	Narrow-leaved cattail
<p>1 The Floristic Quality Index (FQI) is an indication of native vegetative quality for an area: Areas with a value of 20 or greater are considered high quality. 2 The Native Mean C is an indication of native vegetative quality for an area. Areas with a value of 3.5 or greater are considered high quality. 3 The Chicago District U.S. Army Corps of Engineers has designated various Waters of the United States to be high-quality aquatic resources (HQARs). This designation is based on the definitions found within the Regional Permit Program that became effective April 1, 2012.</p>							

The unnamed wetlands to be permanently impacted by the proposed project are General Use waters with zero 7Q10 flow. 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 tributaries of Marley Creek and Spring Creek are General Use waters with zero 7Q10 flow. They 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.

Spring Creek (GGA-02) is a General Use water body with zero 7Q10 flow at the proposed project location. It is listed on the draft 2012 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use (causes = dissolved oxygen, phosphorus (total), and sedimentation/siltation) and aesthetic quality (cause = visible oil). Spring Creek has 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*. It is not enhanced in regards to the dissolved oxygen water quality standard.

Marley Creek (GGB-01) is a General Use water body with zero 7Q10 flow at the proposed project location. The stream has not been assessed under the Agency’s 305(b)/303(d) program and has 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

stream is 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, Marley Creek has a watershed area of approximately 2.54 square miles at the project site and is therefore considered a positive 7Q1.1 flow stream. Thus, the Applicant contracted the Illinois Natural History Survey (INHS) to perform a physical, chemical, and biological survey of Marley Creek near the project location. The results of this study are summarized in two separate INHS documents prepared on August 23 and September 12, 2013. A brief summary of these findings is provided below.

A physical characterization of the stream was conducted during stream visits on July 31, August 1, and August 8, 2013. A 300-foot reach of Marley's Creek the, located within the project area at the US Route 6 bridge, was selected for the survey. Stream width averaged 21.3 feet and stream depth averaged 3.9 inches (due to high sedimentation), with no detectable flow occurring during these specific site visits. During the fish and mussels surveys conducted on July 25, 2013, the stream possessed depths up to 3 feet, but did not exhibit discernible flow. A "poor" riparian zone dominated by riparian grasses and a few isolated shrubs and small trees was observed. Substrates were dominated by loose mud and silt. The stream was found to have a habitat assessment score of 43 using the Agency's *Qualitative Stream Habitat Assessment Procedure (SHAP)*, which places this stream as being in "poor" 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 August 1, 2013 along the 300-foot reach previously described. Macroinvertebrates were collected and results were compiled using Agency protocols. A total of 293 aquatic macroinvertebrates were collected which consisted of two phyla, five classes, eleven orders, 18 families, and at least 20 taxa. Fauna were dominated by the amphipod *Hyalella azteca* (42% of specimens) and midges (Family Chironomidae, 24% of specimens), which are moderately tolerant and highly tolerant taxa, respectively. Of the taxa collected, a large proportion are more typical of lentic habitats than that of streams, thus it was suggested that the connectivity of the stream with a nearby lake had resulted in fauna more typical of a lake or pond than that of a stream. The overall mIBI score for Marley's Creek was 28.3, which places this stream in the "fair" category in regards to the macroinvertebrate community present. 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. No unique, rare, or exotic aquatic macroinvertebrate species were observed, and none of the species collected are listed or under consideration for listing as either state or federally threatened/endangered.

A survey of the fish and mussel community inhabiting the area was performed on July 25, 2013 along a 180-foot reach of Marley's Creek both upstream and downstream of the U.S. Route 6 bridge. Fish were collected over a 30 minute period using a backpack electroshocker. Mussels were sampled by hand from the streambed for 0.5 person-hours. Banks and shorelines were also visually searched for the presence of shells. Seven species of fish representing four families (Cyprinidae, Ictaluridae, Centrarchidae, and Catostomidae) were collected. Over half of the 102 organisms collected consisted of bluegill (57

individuals). No live freshwater mussels were collected during the survey. The only mollusk shell found was that of a Chinese Mystery Snail, an invasive species that prefers lentic water bodies with silt, sand, or mud substrate. During the macroinvertebrate survey conducted at a later date, one dead Paper Pondshell was found. This species also inhabits sluggish, silt-laden water bodies. No species of fish or mussel listed as either state or federally threatened/endangered were collected or observed. Similar to the macroinvertebrate survey, the fish and mussel communities were dominated by species commonly associated with lentic waters or slow-moving, lotic systems, which is likely attributed to the connectivity of this stream with a nearby lake.

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. Grading operations would be performed during low-flow conditions in order to minimize loadings of suspended solids to the on-site streams. Yearly chloride loadings from the expanded roadways is estimated at 87 tons/year, but this would be offset by a chloride reduction of 118 tons/year in the Hickory Creek watershed through IDOT's chloride minimization plan developed for the recent Stuenkel Road/I-57 project. No net increase of chloride loadings to downstream waters would occur as a result of this project. Permanent filling of wetland areas and grading activities within streams would permanently remove or alter 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 (e.g., vegetated swales, closed drainage systems, and compensatory storage basins) would be utilized to retain runoff onsite to the greatest practical extent and minimize downstream transport of suspended solids. The permanent loss of wetlands and natural stream habitat would be offset with compensatory mitigation.

Purpose and Social & Economic Benefits of the Proposed Activity.

The purpose of this project is to implement necessary components of the Strategic Regional Arterial system to supplement the existing and proposed expressway facilities by accommodating a significant portion of long distance, high-volume automobile and commercial vehicle traffic in the region. This segment of roadway also contains high crash rate intersections and roadways. Modifications to this roadway would improve traffic safety, provide socioeconomic benefits to the surrounding communities, and expand the network of multi-use pathways while improving and updating traffic safety elements.

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 practical extent. The construction of the proposed project would follow guidelines set forth by the Agency and USACE which would ensure that BMPs are properly employed to minimize environmental impacts. A summary of the alternatives considered by the Applicant is provided below.

No Build: The no-build alternate would consist of repair and maintenance operation on the existing roadway into the design year of 2030, with nominal expenditures of time and money. While some minor aspects of the SRA Study recommended improvements could be pursued with minimal impacts to aquatic

resources, the purpose of the Strategic Regional Arterial system would not be achieved. This alternative would ultimately result in increased congestion and high crash rates which would extend to the other roadways in the region due to ongoing planned development and projected increases in traffic volumes. This alternative would not satisfy the purpose of the project.

Alternate Routes: Consideration to alternate routes is not consistent with the Strategic Regional Arterial Study. The intent of the SRA is to provide a contiguous route for high-volume long-distance travel through the region. This corridor was identified as an SRA due to its existing traffic characteristics, existing traffic infrastructure, and the projected development in the region. The 1996 SRA Report did investigate alternate routes for portions of the US 6 corridor and did not identify a suitable alternate route in the vicinity of this segment.

Build Option: The proposed build alternative consists of widening and reconstruction of this 2.5 mile segment of US 6 / IL 7 to provide two through-traffic lanes in each direction separated by a raised median. This option also includes improving intersection capacities and several geometric improvements included to improve capacity, traffic safety and mobility.

Several structural improvements are proposed by the Applicant to minimize and avoid aquatic resource impacts. More than 3,000 lineal feet of retaining walls would be constructed on the north side of 159th Street to minimize impacts to identified resources between the Norfolk & Western Railroad crossing and Ravinia Drive. This same segment of road would include four land bridges. The retaining wall would provide an area to provide water quality improvement measures to treat pavement surface runoff prior to discharge into Marley Creek.

The two existing bridge structures are proposed to be replaced with two multi-cell box culverts over Spring and Marley Creeks. In order to minimize environmental impacts, the box culverts would be submerged below existing stream bed by twelve inches at Marley Creek and 19.2 inches at Spring Creek to allow for the passage of aquatic life and allow the natural stream width to be maintained. The slope of the proposed box culverts have been designed to match the existing slope of the stream.

Several closed drainage systems are proposed along the proposed project area. The closed systems adjacent to Spring Creek are to outlet into vegetated ditches a minimum of one hundred (100') feet upstream of the ordinary high water mark of the creek as geometric limitations allow. An abandoned creek channel from realignment of Marley Creek in the 1930s would be improved with sediment traps, ditch checks, and native plantings to provide enhanced water quality to downstream waters. Pools would be created with permanent rock check dams to improve water quality of roadway surface drainage discharged into the abandoned creek upstream of Marley Creek. The plantings are to be monitored and maintained for three years in accordance to USACE requirements.

Chloride Minimization:

The proposed project would add an additional 6.65 lane miles that would require road salting during winter months. The waters to be directly impacted by this project are not on 303(d) List due to chloride-caused impairments. However, the project is located within the Hickory Creek watershed which contains many stream segments that are 303(d) listed with chloride listed as a potential cause of impairment. Given these circumstances, the Applicant is committed to contributing no net increase of chloride to on-

site and downstream waters. The new roadways would be maintained by the IDOT Alsip Yard, which has applied on average approximately 13 salt tons/ lane mile over the last three years. Based on average application rates for the Alsip Yard, it is estimated that additional chloride loadings due to this roadway would be would be 87 tons per year. To offset the increased salt application due to this project, IDOT has planned to construct a slurry generator/storage tank and station two slurry trucks at the New Lenox Yard (in the Hickory Creek watershed). The use of two slurry trucks, which use approximately 13% less chloride than a calibrated granular salt truck, would reduce the amount of salt used by approximately 118 tons per year (2 slurry trucks x 59 tons per year = 118 tons/year). Of the 118 chloride tons/year of reduced usage, 31 tons are to be allocated to off-set increases from the newly project at I-57/Stuenkel Road, and the remaining 87 chloride tons/year would be allocated to the presently proposed project. In addition to the demonstration of no net increase of road salt application in the watershed, the BMPs to be employed by the project (e.g., vegetated swales, closed drainage systems, and compensatory storage basins) would aid in containing and treating roadway runoff, which would further minimize pollutant loadings to on-site and downstream waters.

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

The IDNR EcoCAT system was consulted on August 16, 2013. It was immediately determined that protected resources are not in the vicinity of the project location. Consultation was immediately terminated in the August 16, 2013 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 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 improving and updating traffic safety elements 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.