Fact Sheet for Antidegradation Assessment
For Illinois Department of Natural Resources
IEPA Log No. C-0887-09
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Illinois Department of Natural Resources ("Applicant"), through the State of Illinois-Capital Development Board and in contract with Farnsworth Group, Inc., has applied for a 401Water Quality Certification for impacts associated with the proposed improvements to the DuPage River Spillway in Section 17, Township 34N, Range 9E, in Will County, Illinois. The project will affect the existing dam and spillway structure in Channahon, IL.

The proposed project will add one additional spillway bay on the south embankment (adjacent to the existing bays) that is comparable in size and has the same weir elevation as the existing bays. The drawdown facility will be demolished and reconstructed south of the spillway. The hydraulic analysis with this increased spillway capacity indicates the need to raise the crest of the north embankment and the saddle dam by only 2.5 feet, as opposed to the 3.9 foot increase which would have been needed without the additional spillway capacity. The sheet piling in the south embankment will be trimmed by about 2.0 feet to improve sight lines from the towpath trail (requested by the Illinois Historic Preservation Agency). The increased spillway capacity results in an overall reduction in the design flood elevation of about 0.8 feet, which remains within the FEMA regulated floodway. Outflows will continue to pass over Lock #7 and the Feeder Gate of the historic I&M Canal as auxiliary spillways.

Information used in this review was obtained from the Antidegradation Assessment Summary dated August 31, 2018; the IDNR Endangered Species Consultation Program review letter dated October 10, 2018; and the sediment sampling report dated July 15, 2011.

Identification and Characterization of the Affected Water Body.

The temporary discharge from the spillway will flow into the DuPage River and 0.107 acres of local wetlands. The DuPage River (IL_GB-01), a General Use water, with a 7Q10 flow of 95 cfs. This segment of the DuPage River is not listed as a biologically significant stream in the 2008 Illinois Department of Natural Resources publication *Integrating Multiple Taxa in a Biological Stream Rating System*; however, it was given an integrity rating of "B" within the project area. The DuPage River, Waterbody Segment, IL_GB-01, is listed in the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as changes in stream depth and velocity patterns (non-pollutant), other flow regime alterations (non-pollutant), and phosphorus (total); and fish consumption use with potential causes given as mercury and polychlorinated biphenyls (PCBs). Aesthetic quality use is fully supported. This segment of the DuPage River is not subject to enhanced dissolved oxygen standards.

The adjacent 0.107 acres of unnamed wetlands are General Use Waters with 0 cfs of flow. The unnamed wetlands are not listed as biologically significant streams in the 2008 Illinois Department of Natural Resources publication *Integrating Multiple Taxa in a Biological Stream Rating System* or given an integrity rating in that document. The unnamed wetlands have not been assessed by the Agency, are not listed on the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List and are not subject to enhanced dissolved oxygen standards.

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

An increase of total suspended solids (TSS) are anticipated as a result of constructing the cofferdam on the upstream side of the spillway, excavation of the material from the stream bed for construction of the plunge pool and other contractor activities. This discharge is not anticipated to be significantly different than background conditions. If a sediment plume is observed in the stream, construction activity will be halted until the sediment plume subsides or the source is contained. Sediment will also be present in the pumped flows of the cofferdam dewatering operation. The initial 60% (±) volume of the water, mainly from the upper depths of the cofferdam, will be pumped directly back to the receiving stream. This initial discharge is not anticipated to be significantly different from natural background conditions. The remaining 40% (±) of the water, from the lower depths and assumed to contain 15% solids, will be pumped to Geo-Tube filter bags to contain an estimated 12,000 cubic feet of sediment before discharging into either the DuPage River or I&M Canal and is expected to be similar to or better than the natural background water quality. Sediment that is captured within the Geo-Tubes will be hauled away from the site and disposed of at a landfill or reused at an upland location. Streambed soils will be excavated from the proposed plunge pool location and placed into trucks to be hauled off-site. The quantity of excavated soils is estimated to be approximately 2,500 cubic yards of sand, gravel and/or other naturally occurring sedimentary materials. No discharge is anticipated from this practice. The proposed project's discharge loading will be temporary and present only during active construction. The stream flow will return to its natural or pre-construction condition at the completion of the project.

Sediment collection and testing was completed from four locations within the DuPage River spillway. Results concluded that no special management of the sediments will be required on-site. Sediment removed from the project area may need additional testing prior to disposal.

Fate and Effect of Parameters Proposed for Increased Loading.

The increase in suspended solids resulting from construction activity within the stream bed and local wetlands will be short-term and temporary. A Stormwater Pollution Prevention Plan has been submitted, dated October 28, 2009, to ensure temporary and permanent erosion control measures will be implemented to minimize erosion and sedimentation to receiving waters. Additionally, construction entrances will be stabilized to limit soil disturbance at the ingress/egress from the site.

Purpose and Social & Economic Benefits of the Proposed Activity.

The proposed project is needed to bring the existing dam and spillway structure into compliance with current codes and standards and improve public access. Since the emergency repair project of 1997-98 did not address certain regulatory deficiencies related to the dam, the existing structure is susceptible to severe damage from a large flood event. Construction will reduce structural damage to the dam and flooding of the upstream areas. Additional benefits may include, potential opportunities for future developments upstream, potential increase in existing property values and potential socio-economic improvement of the nearby communities.

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

Five alternative plans were identified to avoid and minimize environmental impact:

Option 1: *No Action Alternative*

- Leaves the existing dam and spillway in non-compliance with IDNR codes/standards; a condition of the 1997 permit was to bring dam into compliance
- Leaves current structure at risk for overtopping

Option 2: *Raise Crest Elevations*

- Raises crest of the North embankment and Saddle Dam will achieve compliance
- Will not address goal of improving sight lines by lowering sheet pile wall
- Extends construction area limits and will increase disturbance within local wetlands
- Fill may encroach into wetlands and waterways

Option 3: *Add "Similarly" sized Spillway on South and Raise Crest Elevations*

- Achieves compliance goal and reduces 100-year flood elevation by approximately 1.2 feet
- Limits impacts to existing wetlands and improves some sight lines by cutting sheet pile wall

Option 4: *Add "Larger" Spillway on South and Raise Crest Elevations*

- Achieves compliance goal and reduces 100-year flood elevation by approximately 1.2 feet
- Limits impacts to existing wetlands and improves some sight lines by cutting sheet pile wall
- Allows for removal and protection of auxiliary spillways, Lock #7 and Feeder Gate as historic structures
- Sight lines may be obstructed due to protection features for Lock #7 and Feeder Gate
- Flow through Feeder Gate would be blocked, restricting the ability to keep the I&M Canal full

Option 5: *Add North Spillway and Raise Crest Elevations*

- Achieves compliance goal and reduces 100-year flood elevation by approximately 1.2 feet
- Limits impacts to existing wetlands and improves some sight lines by cutting sheet pile wall
- Requires additional construction downstream of the north embankment to divert flow back to the river, which will add additional construction costs.

The Applicant's proposed plan (Option 3) includes environmental impacts that are unavoidable. The construction of the proposed project will follow conditions set forth by the Agency and USACE. The least intrusive alternative would be to not complete the project. This is not an acceptable alternative given the need to bring the dam and spillway into compliance with IDNR. Completion of the proposed project will achieve compliance goals and reduce impact on local wetlands.

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

Correspondence from the IDNR Endangered Species Consultation Program dated October 10, 2018 indicates that an Ecological Compliance Assessment Tool (EcoCAT) endangered species consultation was performed for this project. The EcoCAT consultation indicated records for state-threatened Iowa darter (Etheostoma exile) and state-threatened river redhorse (*Moxostoma*

carinatum) as protected resources that may be in the vicinity of the project location. No Illinois Natural Inventory Sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves were identified in vicinity of the project. The IDNR recommends that no instream work occur between April 1st and June 15th to avoid impacts to these species during their spawning season. Given this recommendation the IDNR determined that impacts are unlikely and closed the consultation. The Illinois Historic Preservation Agency provided the project clearance for meeting The Secretary of the Interior's "Standards for rehabilitation and Guidelines for Rehabilitating Historic Buildings" in a letter dated January 4, 2010.

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 assessment was written. We tentatively find that the proposed activity will result in the attainment of water quality standards; 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 will benefit the communities at risk of flooding by providing a system that meets flood protection standards. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.