Project Summary and Environmental Assessment

Project Identification
L174705- CSO Wet Weather tunnel (*Project #1)*
L175070- East Side Waste Water Treatment Plant (ESWWTP) influent pump station (*Project #2)*
L174750- U.S. Route 6 pump station and gravity sewer (*Project #3)*

City of Joliet
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Joliet, Il 60432

Will and Kendall Counties

Background Information and Existing Situation

The City of Joliet (City) owns and operates a publicly owned treatment works consisting of separate sanitary sewers, combined sewers (stormwater and sanitary), a 36-inch siphon river crossing, and three wastewater treatment plants. The sewer system serves an estimated population of 147,433 people and an area of approximately 38 square miles (24,000 acres). Combined sewer systems are designed to overflow at permitted relief points, called combined sewer overflow (CSO). CSO's release untreated sewage and stormwater into the environment. Over the past 20 years the City has removed 25 of these CSO's. Eight (8) active (9 permitted) CSO's remain. Six of these relief points are located on the east side of the Des Plaines River and two are located on the west side.

The federally mandated national CSO control policy was developed to reduce or eliminate CSO discharges in an effort to protect the environment and guard public health and safety. All communities with combined sewers are required to develop a Long-Term Control Plan (LTCP) to reduce the impact of CSO's and be consistent with Illinois Environmental Protection Agency (IEPA) and United States Environmental Protection Agency guidance. Project #1, the CSO Long Term Control Plan West Screening Structure, Wet Weather Tunnel & Wet Weather Pumping Station Wetwell project, as described herein, is a component of the City's State and Federally approved LTCP. The intention of that project is to provide a greater level of treatment for wastewater ultimately flowing to the Des Plaines River. In an effort to minimize the LTCP's financial impact on users the City has decided on a phased implementations schedule.

Project #2, the Eastside WWTP Influent Pump Station Replacement project will replace the existing pumping station at the East Side WWTP which has reached the end of its useful life. Replacement of this station is necessary to maintain wastewater treatment for the East Side service area. Project #3, the U.S. Route 6 pump station and gravity sewer project is necessary to allow for future development and for abandonment of an existing force main that is prone to

failures. All three of these projects are described in greater detail in subsequent sections of this document

The ESWWTP serves a 14-square-mile service area on both sides of the Des Plaines River. The ESWWTP discharges effluent under NPDES permit No. IL0022519. This plant has the oldest collection system consisting of both separate sanitary and combined sewers. During dry weather, the east side sewer system conveys all flows to the ESWWTP. During wet weather, storm water enters the combined sewers via storm inlets, building roof drains, and other infiltration/inflow sources, which at times causes exceedance of the sewers' conveyance capacity. At these times, the combined sewer system is designed to overflow at the permitted CSO relief points.

The City's Westside Wastewater Treatment Facility (WSWWTF) is situated along the east side of the Des Plaines River on the southwest side of the City. The WSWWTF discharge is located downstream of the Eastside Plant. The WSWWTF discharges effluent under NPDES permit No. IL0033553. The Westside Plant is rated for treating 14 MGD of average flow and a peak flow of 28 MGD.

The City also owns and operates the Aux Sable Creek Basin Wastewater Treatment Facility, which is a 3.2 MGD activated sludge plant which is not affected in any way by the work outlined here.

Proposed Projects

Project #1: CSO Long Term Control Plan West Screening Structure, Wet Weather Tunnel & Wet Weather Pumping Station Wetwell (L174705)

The City's approved Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP) has proposed several phased projects that will reduce the impacts of CSO's, consistent with IEPA and USEPA guidance documents and regulations. The intent of the LTCP is to reduce the occurrence of CSO's. A portion of the first phase of the LTCP, the Wet Weather Treatment Plant outfall, has been completed. The remainder of Phase I, the West Side Interceptor, is currently being implemented and is not covered by this loan. Phase II of the project is covered by the proposed IEPA loan and it is described in more detail below. Phase III of the LTCP includes construction of the Wet Weather Treatment Plant. Planning approval would be required prior to securing a Water Pollution Control Loan Program loan for Phase III.

The Phase II project includes a CSO West Side Screening and Separation Structure, the West Tunnel Shaft and Drop Shaft Structure, the Tunnel under the river, East Tunnel Shaft and Wet Weather Pumping Station wetwell, Outlet Siphon Control Structure and associated manholes and junction structures. Dry weather and normal wet weather flows will be conveyed across the Des Plaines River to the ESWWTP from the service areas west of the river via two new 24-inch siphon pipes that will be contained inside a tunnel that will pass under the river. Under this

Phase II project, the 24-inch siphons will be put into service and the wet weather tunnel and the shell of the Wet Weather Pumping Station wet well will be constructed. However, the remainder of the pumping station will be constructed as a part of the future Phase III work and it will be put into operation concurrently with a mechanical screen in the West Screening Structure that will also be constructed in the future. Extreme wet weather flows will be screened in the West Screening Structure and conveyed in the wet weather tunnel to the Wet Weather Pumping Station for treatment at the Wet Weather Treatment Plant after completion of Phase III. The City estimates it will take twenty-two (22) months to complete this portion of the project. The anticipated construction start date is November 2014.

The anticipated cost of Project #1 is $16,500,000.

Project #2: East Side Influent Pump Station Replacement (L175070)

The existing influent pump station at the City's ESWWTP was constructed in the mid-1950s. This pump station has reached the end of its useful life. The current equipment requires a high level of maintenance and the structural condition of the pump station is unknown. The existing influent pumps are manually-controlled, which requires a high level of operator oversight and results in reduced pumping efficiency. This pump station will be replaced to improve operations and maintenance as well as to expand the capacity for future upgrades to the ESWWTP. The new pump station will be located on an unused portion of the ESWWTP. It will include two screening channels with two mechanically-cleaned bar screens (one duty, and one redundant) to protect the new influent pumps from ingesting debris. Each screen will discharge into a shaft-less screw conveyor. The conveyor will deposit the screenings into a roll-off dumpster. The new screens will be housed in a new building along with the screenings handling systems, the electrical and control systems, HVAC and plumbing systems, and a storage room over the pump station's dry well area. The new pump station will be a dry-pit submersible station with four Variable Frequency Drive (VFD) pumps. Two smaller pumps will be provided for handling normal dry weather flows and two larger pumps will be provided for conveying peak wet weather flows. The station will be designed so that the two smaller pumps can be replaced in the future as needed, to increase the station's peak pumping capacity from 55 MGD to 75 MGD. The existing Influent pump station and preliminary screening facilities will be abandoned to remove or modify the existing equipment and piping, so that the space may be re-purposed by the City. This project will also include civil site modifications to connect the new pump station to the preliminary treatment facility, reroute existing process lines from the existing pump station wet well to the new wet well, bring utilities to the new project site, route a new storm sewer to Hickory Creek to improve the site drainage, and to resurface roadways inside the treatment plant as well as McKinley Avenue that will be damaged by the construction activities. The City estimates it will take twenty-five (25) months to complete this portion of the project.

The anticipated cost of Project #2 is $11,436,000.

Project #3: U.S. Route 6 Sewage Pump Station & Gravity Sewer (L174750)

The City has recognized that the un-sewered areas around the U.S. Route 6 corridor between McClintock Road and Reeves Road are in urgent need of sanitary sewer service. In addition, the currently-sewered tracts in the service area are served by a 10-inch force main that is unreliable and has reached the end of its useful life and needs to be replaced. That force main conveys wastewater to the City's Eastside Wastewater Treatment Plant and that plant could benefit by some relief of hydraulic load away from it. In contrast, the City's Westside Wastewater Treatment Plant (which is actually closer to the U.S. Route 6 Corridor's Service Area) has some reserve capacity. The City wishes to re-direct the service area's sewage flow away from the Eastside Plant and over to the Westside Plant by constructing a pump station with associated deep gravity sewers and a single force main. The existing 10-inch force main will be abandoned in place. The City estimates it will take 18 months to complete this portion of the project.

The anticipated cost of Project #3 is $8,605,500

Environmental Impacts

Consultation with IDNR, IHPA, U.S. Army Corps of Engineers and CMAP has been submitted. Final planning approval will not be granted without concurrence from all three Agencies.

Implementation and Cost

Total project cost for Project No. 1, the CSO Screening Structure, Wet Weather Tunnel & Pumping Station Wet well upgrades are estimated to be $16,500,000.

Total project cost for Project No. 2, the East Side Influent Pump Station Replacement upgrades are estimated to be $11,436,000.

Total project costs for Project No. 3, the U.S. Route 6 Sewage Pump Station & Gravity Sewer portion are estimated to be $8,605,500.

The total cost for all projects outlined in this document is $36,541,500.

It is anticipated that construction of the projects outlined in this document will take less than twenty-five months to complete.

Financial Information

The City intends to fund these projects using low interest loans from the IEPA's Water Pollution Control Loan Program (WPCLP). Currently, customers with sanitary sewer service from the City of Joliet receive a sewer bill that contains three charge components. These include a daily charge of a flat rate of $0.1357 per day, a Sewer Rate Volume Charge of $3.0958 per 100 cubic feet of

water used (which equals a rate of $4.14 per 1,000 gallons), and a flat rate Sewer Separation Charge of $0.1993 a day. The average residential customer's household uses about 5,000 gallons of water a month. The volume of 5,000 gallons equates to 668.45 cubic feet of water used. The current average user's monthly bill is $30.74. The city proposes a rate increase of $4.16 per month to pay for the projects identified in this document. The average monthly sewer bill will be $34.90 and the annual average sewer cost will be $418.80 per household. Annual repayments on a WPCLP loan of $36,471,500 at the current interest rate of 1.995% for 20 years are $2,229,400. The Agency normally employs a percentage comparison of the median household income in a given community to determine the financial impact of a proposed project in that community. Using the proposed residential sewer cost of $418.80 per year, as the basis for this comparison, the estimated percentage of median household income ($60,528) required annually for payment of wastewater user fees is 0.69%, which is under the Agency' affordability guideline of 2.0%.

Public Participation

Public comments are invited on the proposed project. For further information contact:

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