Project Summary and Environmental Assessment

### Project Identification

City of Streator

204 South Bloomington Street

Streator, Illinois 61364

LaSalle County

### Existing Conditions / Project Justification

The City of Streator, with a population of 13,710 (2010 Census), serves 18,842 in their   
Facility Planning Area (FPA) with a projection of 20, 000 by design year 2033. The City is located in south central LaSalle County at the intersection of Illinois Routes 18 and 23. The City owns and operates a wastewater treatment, plant built in 1951 with an upgrade and expansion in 1992, capable of treating 3.3 million gallons per day (mgd) design average flow and 10.8 mgd design maximum flow. The Wastewater Treatment Plant (WWTP) is a conventional activated sludge plant with the following major components: raw sewage pumps, bar screen, grit chamber, influent flow measurement, oxidation ditch, sludge handling equipment and effluent lift station with discharge to the Vermillion River. The City is currently served by a combined sewer system with the collection sewers discharging into three major interceptors. Major rehabilitation projects were completed on Prairie Creek and Coal Run Creek Interceptors in the early 90’s.A project to replace the Kent Street Interceptor as well as separate storm water from the sanitary flow in the interceptor was completed in October 2012.

Planning was submitted for five projects with the first, WWTP Chlorine Contact Tank Expansion Project, having been completed and the fifth, Coal Run Creek Interceptor Project, beyond the scope of this document. Three projects are evaluated in this planning document and projected to be constructed within five years.

The first project addresses the need to upgrade aging and outdated WWTP equipment, installed in 1991, that is nearing the end of its useful life and to complete the modernization of the plant’s SCADA system that began with a Phase I project in 2007. The plant has also suffered an odor problem when one of the sludge mixers went down. It was discovered that the three mixers are undersized to thoroughly mix the contents of the sludge storage tank and the cranes used to remove the mixers for maintenance are not large enough to remove the mixers when the tank is full; therefore, the non-function mixer had to be left in the tank until the tank could be emptied during the land application period in the fall.

The second project proposes sewer upgrades in five locations in the city. The intent of these improvements is to alleviate capacity and infiltration issues. Additionally, this project will help correct bottlenecks, decrease the potential for combined sewer overflow (CSO) discharge and project against sewer backups. The new sanitary line along Oakley Avenue will decrease loading on an existing 15-inch line to allow for easier expansion along N. Bloomington Street.

Lastly, homes in the Prafke Addition experience basement sewer backups and flooding during heavy rain events, even though the sewers are separated in this area. The aging clay sewer pipes allow groundwater infiltration into the sanitary sewer system when the storm sewer system fails to remove storm water from the project area. This failure is due to the inability of the storm sewer discharge minehole to accept high flow volumes during periods of heavy rainfall. In turn, the naturally high groundwater table rises to a level that inundates the sanitary sewer system including individual lateral lines with groundwater. This third project proposes work that will alleviate flooding issues, prevent sewer basement backups and decrease the potential for CSO discharge.

### Alternatives Evaluation and Alternative Selection

Primarily, this project is to rehabilitate and improve the existing WWTP and address specific problematic areas of the collection system. Solutions to these problems are straightforward with no extensive evaluation of alternatives required. The one exception is the choice for a new sludge mixing system. Three systems were evaluated: new Flygt submersible mixers, Rotamix mixing system and EIMCO linear motion mixer. The new Flygt submersible mixers would be larger than the current submersible mixers to properly mix the entire tank with heavier duty winches that will be motor operated. The advantages of choosing the Flygt system is a lower capital cost, no internal piping to hinder tank cleaning, existing mixer masts can be re-used and because the old and new mixers use the same mast, one or more of the old mixers could be reconditioned for use as a spare. A cover and odor control treatment system were evaluated for the sludge storage tank but deemed unnecessary, at this time, with proper mixing and pH control of the sludge.

### Environmental Issues Relating To Alternative Selection

A positive environmental impact upon water resources is anticipated for this project as the possibility of combined sewer overflows will be reduced. Construction of this project lies within fully developed areas and does not include any environmentally sensitive sites. The Prafke Addition project will convert approximately 3.0 acres of prime farmland for use as a detention pond. This area is surrounded by residential and industrial land uses with no other site adjacent to the Prafke Addition available for this use. No secondary environmental impacts due to induced growth from this project are anticipated. Temporary construction impacts including noise, dust, minor erosion and slight traffic disruption may be expected.

An Illinois Department of Natural Resources (IDNR) sign-off has documented that no disturbance of any endangered or threatened species of plants or animals is anticipated. Additionally, no disturbance to any wetland area by the proposed construction of these three projects is expected.

The State Historic Preservation Agency (SHPA) determined that, as proposed, these projects should have no effect on any Historic Properties in the National Register of Historic Places and it has no objection to proceeding with the project as planned.

### Proposed Project

The WWTP equipment upgrade project will include improvements to the influent pumps, rotor shafts, check valves, level monitoring systems, fine bar screens, dissolved oxygen probe and analyzer, skimmer in clarifier #2, sludge transfer pumps, submersible sludge mixers, clarifier drive units, the non-potable water system, and the SCADA system.

The sewer capacity upgrade project includes upgrades at five locations:

* Lining of 1,300 linear feet (l.f.) of existing 24-inch diameter sanitary sewer main as well as manhole realignments to improve hydraulic capacity from the Court Street Lift Station to Main Street;
* Replacement of 675 l.f. of 8-inch diameter combined sewer main that enters the Coal Run Creek CSO Treatment Facility from the southwest with 12-inch pipe ;
* The construction of a new 12-inch diameter sanitary line measuring 1,600 feet along Oakley Avenue to connect flow from an existing 8-inch line along Ponderosa place to the recently installed Area 20 sewer;
* Lining approximately 2,500 l.f. of existing 48-inch sewer along the Prairie Creek Interceptor;
* Lining approximately 1,000 feet existing 24-inch brick and clay sewer along Vermillion Street south of Bridge Street.

The Prafke Addition sewer project consists of the construction of a detention pond, just north of the neighborhood, which will cover roughly three acres. Existing 8 inch to12 inch sewer pipes, approximately 7200 l.f. in length, will be lined.

**WWTP Upgrade Costs** **Sewer Capacity Upgrade Costs**

Legal $ 10,000 Legal $ 10,000

Bidding $ 5,000 Bidding $ 5,000

Construction $ 1,016,000 Construction $ 2,551,500

Contingency $ 101,600 Contingency $ 255,150

##### TOTAL $ 1,132,600 TOTAL $ 2,821,650

**Prafke Addition Sewer Costs**

Legal $ 10,000

Bidding $ 5,000

Construction\* $ 2,349,000

Contingency $ 234,900

**TOTAL $ 2,598,900**

All engineering services will be performed “in house” by the City of Streator.

\*The cost of storm water related work is not an eligible cost. The cost of $1,725,000 for lining the sewer pipe is eligible for loan participation

**Implementation**

The proposed WWTP equipment upgrade project is scheduled for initiation of construction in February 2014 with construction expected to require approximately10 months. The City of Streator is requesting funding of $1,027,600 through the Illinois Environmental Protection Agency (IEPA) Loan Program with the City contributing $100,000 from Sewer Use Revenues. For a 20-year loan of $1,027,600, at the estimated interest rate of 2.0%, an annual loan repayment of approximately $62,897 would be required. For all three projects, the total loan fundable cost is estimated at $5,829,150 with an annual loan repayment of $355,061. The projected construction start date for the sewer capacity upgrade project is July 2014 with completion in one year. The Prafke sewer project is scheduled for January 2015 with completion by December of 2015. The IEPA Loan will be repaid from user fees and sales tax funds. Based on average monthly water usage of 500 cubic feet per month (3,741 gallons), the average monthly user charge is $34.25. This average monthly fee is 1.04% of the median household income of $39,597 (2010 Census) and within Agency guidelines of affordability. It appears that the current rate structure will be adequate for operation, maintenance, replacement and loan debt service for all three proposed projects.

**Public Participation**

Public comments are invited on this proposed project.

For further information contact:

Gary Bingenheimer

Illinois Environmental Protection Agency

Infrastructure Financial Assistance Section

Bureau of Water

1021 North Grand Avenue East

P.O. Box 19276

Springfield, IL 62794-9276

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