

# LOCKPORT

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Dev Trivedi

**City Clerk**  
Alice Matteucci

**Administrator**  
Tim Schloneger



**Alderman**

Pete Colarelli - 1st Ward  
Dick Van Dyke - 1st Ward  
Joe Fracaro - 2nd Ward  
Brian Smith - 2nd Ward  
Tom Kelly - 3rd Ward  
Bob Morris - 3rd Ward  
John Robert Krzos - 4th Ward  
Robert Perretta - 4th Ward

*City of Historic Pride*

222 E. Ninth Street ♦ Lockport, IL 60441-3497

## **CITY ADMINISTRATOR WATER & SEWER RATE INCREASE & CAPITAL IMPROVEMENT PROGRAM MEMO**

**TO:** Mayor & City Council

**FROM:** Tim Schloneger, City Administrator

**SUBJECT:** Water & Sewer Rate Increase & CIP

**DATE:** September 7, 2010 (updated from March 26, 2010)

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Maintaining safe drinking water and environmentally sound sewer services is one of the most important responsibilities of the City of Lockport. As providing Water & Sewer services becomes more expensive, the City is faced with the constant challenge of balancing our interest in offering a fundamental public health service at an affordable price, against the necessity of managing our systems in a financially sustainable manner.

Water, sewer and all other utilities are businesses, regardless of who owns them. The City's Water & Sewer utilities are businesses that just happen to be owned by government.

Despite the fact that the City has been deferring equipment replacement and maintenance, putting off needed capital improvements, and operating with manpower below EPA recommended levels, expenses are still outpacing revenues in the Water & Sewer funds. The City's cash reserves are not sufficient to sustain the system.

We have enjoyed unsustainably low Water & Sewer rates for some time by leaving equipment replacements and system upgrades for the future. The future has arrived so it is time to catch up.

Deferring problems in our Water & Sewer systems for someone else, the next person, the next generation to fix, will make it more costly to fix than ever. Delay makes the problem worse. Changes in spending or revenue accumulate over time. The earlier changes are made, the more they contribute to a solution.

We owe it to our ratepayers to run a competent, strong, logical and fair Water & Sewer utility that is always ready to serve its customers. It takes money to make that happen.

The City has performed a comprehensive analysis of the water & sewer systems to identify system deficiencies, to determine future system requirements, and to recommend facility improvements that correct existing deficiencies and that provide for future system expansion.

In the water system, new wells, storage tanks, well & pump modifications and replacement water main are necessary, even without taking into account the demands that will be created by new growth. In the sewer system, eliminating Infiltration and Inflow and adding lift stations are necessary to run a more efficient system that stays in compliance with environmental regulations. In addition, costly improvements are being mandated by the Illinois EPA.

The City has carefully considered information gathered by our city staff, engineers, financial consultants and the Illinois EPA. We are now at the point where the City needs to make the financial decision in order to address this important health and environmental issue.

## **COMPLIANCE COMMITMENT AGREEMENT**

The City of Lockport received a notice of violation from the Compliance Section of the Illinois Environmental Protection Agency (IEPA) on October 19, 2006 for “failure to provide a safe source of raw water (on-going violation).” Referenced regulations were Section 18 of Act 415 ILCS 5/18, 35 IAC 601.101, 602.115, and 654.102. The notice was the result of contaminated raw water samples collected from seven wells in the City between April 1, 2006 and September 9, 2006. The presence of both total coliform and fecal coliform was indicated by the samples. The raw water samples were required by the IEPA and were taken at the source location prior to any treatment of the water. Even though there were positive coliform samples in the City’s raw water source, there were no positive results for coliform in finished water samples taken from the City’s water distribution system.

As a result, the City entered into a Compliance Commitment Agreement (CCA) with IEPA in January 2007 “for a failure to provide a safe source of raw water”. The CCA consisted of three programs:

- Program 1 – Installation of chlorine residual analyzers
- Program 2 – Sanitary survey
- Program 3 – Well rehabilitation

Based on the information gathered throughout the City’s completion of the CCA, from the sampling and rehabilitation of Wells No. 2, 5, 7, 8, 9, and 10, the positive coliform results from the raw water samples do not appear to be the result of ground water under the influence. With the exception of Well No. 7, the well casing pipes in each of the wells were intact and structurally sound. Upon discovery of holes in its casing pipe, Well No. 7 was abandoned. Based on the analysis of the sampling results, the positive coliform samples are not occurring after large rainfall events. Therefore, it does not appear that the water being drawn from these

wells is groundwater under the influence of surface water, but rather, it appears as though naturally occurring bacteria is causing the positive coliform sample results.

On May 30, 2009 the City submitted the Compliance Commitment Agreement Final Report to the IEPA. On July 16, 2009 the IEPA provided notice that it planned to accept the CCA Final Report and close out the violation. The IEPA stated that the City is now on “probation”. During the “probation” period, any positive coliform samples will trigger a new violation (unless a specific cause for the positive sample can be identified, such as sampling error). Any new violation triggers another compliance commitment agreement, which then likely includes the requirement for additional treatment.

During the probationary period, the City continued to receive positive samples on Wells 5, 8, and 2. On January 15, 2010 the City received a letter from the IEPA regarding the Violation Notice No. W-2010-00017 for a failure to provide an assuredly safe source of raw water due to the presence of total coliform in Well 5 (WL22135) and Well 8 (WL01325). A meeting was held with IEPA and City representatives on February 17, 2010 to discuss the proposed corrective action. On March 9, 2010 the City sent a letter describing the City’s proposed course of action to address the violation notice. The City is waiting to see if the IEPA accepts the City’s proposed course of action. A new Compliance Commitment Agreement will be entered into for the effected wells.

Although the CCA may be viewed as a negative, the City has turned it into a positive. As a result, most of the City’s wells have received much needed maintenance in the past year and the importance of continually maintaining the system has been readily apparent. The City has a greater level of accountability and understanding of the water system facilities and records. And finally, there is renewed confidence in the City staff and it’s water system by Illinois Environmental Protection Agency.

## **THE RATE STUDY**

The City is committed to setting and maintaining utility rates and fees that are fairly structured for the ratepayers and high enough to adequately fund the system on a sustainable basis. The City has worked with its financial consultant to complete a comprehensive analysis that recommends rates that:

- Are adequate to cover current costs and the highest priority improvements
- Enables the system to build reserves as a hedge against future known, predictable and some unpredictable cost increases and revenue shortfalls
- Is fair to ratepayers

The proposed rate structure only funds the highest priority improvements in the Water & Sewer systems as recommended by the City’s engineers. There are several other multi-million dollar projects that are recommended, but are not being funded through this rate proposal.

The improvements funded in the rate study will not address water quality (alkalinity and hardness) or the specific possibility of Lake Michigan Water. However, most of the recommended improvements are required regardless of the Lake Michigan Water issue. As the City Council makes decisions over time, funding for projects in the proposed Capital Improvement Program may always be reassigned to meet changing priorities if necessary. The funding stream to pay for capital improvements will consist of cash, bonds, loan interest loans and possibly grants.

In December, the City Council gave direction for how to properly model the rate structure. The following is a summary of the major points outlined:

- A. The current Rate Structure is too complicated; The new Rate Structure should be simplified
- B. Additional treatment to each well should only be done as mandated by IEPA
- C. Depreciation expense is to be reflected in the Water & Sewer Rates. Funding depreciation provides the Utility with funds that are available for use as a source of capital for replacing and improving systems or for repaying debt.
- D. The Utility should charge a flat infrastructure fee to help pay for debt service on storage tanks, water main replacement, work on the wells and treatment facilities.
- E. The utility rate should be mostly reflective of the operating cost, not the infrastructure costs.
- F. The Water & Sewer Utility should repay the City's General Fund for all funding that has been advanced, with interest.
- G. The City's General Fund should no longer subsidize various Utility expenses (Liability insurance, General Overhead, some Salaries).
- H. A 10-year Water & Sewer Capital Improvement Program should be developed and funded.
- I. When projecting future revenues, conservative assumptions for future commercial and residential growth should be used. The City should constantly monitor the environment (land-use patterns, demographic trends, and long-term liabilities) and financial condition to see if financial strategies are working and to learn of conditions that might call for a change in approach.
- J. Fire flow standards should still be met even if the highest producing well in a pressure zone is out of service. Therefore, additional storage tanks are necessary throughout town.

## **WATER SYSTEM MASTER PLAN**

The goal of the Water & Sewer rate structure is to not only make resources readily available, but also encourage the most effective and efficient use of those resources. Therefore it was critical for the City to develop a Capital Improvement Plan to implement the City's broad goals of economic growth, sound fiscal management and enhancing the quality of life for our residents. Using the Capital Improvement Plan, the City has a roadmap to follow to continue to improve its system.

The Water System Master plan consists of 3 major components: Compliance Commitment Agreement Review/Groundwater Investigations, Hydraulic Modeling and Analysis, and Water System Evaluation. This plan is an invaluable tool for the City to use in capital improvement planning and negotiating with developers.

The hydraulic model is paying benefits by allowing City staff to work with developers on a planned approach to water utilities, sizing mains and locations to meet future needs. The plan is organized such that City staff can readily determine the needs of the existing versus future systems, allowing for growth to pay for growth. Through the plan, an awareness of regional water supplies and needs is being identified to determine the impacts those facilities may have on City water supply decisions.

There is an increased knowledge of how the distribution system functions. Using that knowledge, pressure zones have been combined to simplify the operation and improve reliability.

In the past, permitting documentation was lacking and through the plan, this has been identified and is being brought up to date. The system for processing permits has been improved to help ensure that documentation is properly done by developers and City staff.

A system is now in place to measure unaccounted water. City staff has improved maintenance of many meters in the City and will verify the unaccounted water.

And finally, the Water System Master Plan can be used in the future to justify funding requests through the State Revolving Fund program. The program provides low interest loans to units of local government for the construction of water and wastewater facilities. The funds are awarded on a competitive basis. Cities must demonstrate their ability to pay back the low interest loans in order to receive them. The Rate Study was structured specifically to demonstrate how capital improvements would be paid for, so the City may take advantage of these loans.

**City of Lockport  
Water And Sewer Rate Study**

**Water System High Priority Improvements**

**SUMMARY OF IMPROVEMENTS**

	<u>Budgeted Cost</u>
<b><u>Lockport Heights</u></b>	
<b>Source</b>	
Well #11	\$90,000
 <b><u>Upper Pressure Zone</u></b>	
None	
 <b><u>Middle Pressure Zone</u></b>	
<b>Source</b>	
Design & Construction - Shallow Well (1000 gpm)	\$480,000
Design & Construction - Well House/Iron Removal Treatment	\$2,040,000
Farrell Road Pump Modifications	\$420,000
Well #6 Pump Modifications	\$90,000
Design and Construction - Membrane Filtration for Wells #5 & #8	\$2,400,000
<b>Distribution System</b>	
Improvements Required to Reinforce System	\$3,025,200
 <b><u>Downtown Pressure Zone</u></b>	
<b>Source</b>	
Design & Construction - Shallow Wells (2-1200 gpm wells)	\$960,000
Design & Construction - Well Houses/Iron Removal Treatment (2)	\$4,080,000
<b>Storage</b>	
Design & Construction - 1.5MG Tank	\$5,448,000
<b>Distribution System</b>	
Improvements Required to Reinforce System	\$5,961,480
 <b><u>Water Reconstruction - Roads</u></b>	
	\$4,544,540
 <b><u>Miscellaneous Major Maintenance*</u></b>	
	\$785,480

\*includes tank painting and WH #5 Electrical Improvements

**City of Lockport**  
**Water And Sewer Rate Study**

**Water System High Priority Improvements**

**DESCRIPTION OF IMPROVEMENTS**

In order to simplify operations and minimize the need for some source improvements, it is recommended to combine pressure zones with similar hydraulic gradelines as follows:

- *Cedar Ridge/Division and Middle Pressure Zone*
- *Lockport Heights and Upper Pressure Zone*
- *Downtown Pressure Zone*

Based on the evaluation of the existing water system, the high priority improvements include improvements required in order to combine the pressure zones. The high priority improvements are listed by pressure zone as follows:

**Lockport Heights, Well #11 Modifications** – In order to combine the Lockport Heights and Upper Pressure Zones, Well #11 improvements are required. To match the hydraulic gradeline of the Upper Pressure Zone, the Well #11 well pump would need to be modified to pump to the desired hydraulic gradeline of 905 feet.

**Middle Pressure Zone, Shallow Well (1000 gpm)** – Existing well capacity in the Middle Pressure Zone is not sufficient to meet the maximum day demand of the Middle Pressure Zone (2,067 gpm) with the largest well out-of-service. Therefore, it is recommended that a new shallow well with a capacity of 1,000 gpm be constructed in the Middle Pressure Zone.

**Middle Pressure Zone, Well House/Iron Removal Treatment** – This is a companion improvement to the shallow well above. Discharge piping/valves as well as electrical for the shallow well will be housed in the well house. It has been assumed that all future well houses will contain iron removal treatment (pressure filters) similar to the most recently constructed Well House #12.

**Middle Pressure Zone, Farrell Road Pump Modifications** - In order to combine the Cedar Ridge/Division and Middle Pressure Zones, pump improvements at the Farrell Road Pump Station are required. In order to pump to a desired hydraulic gradeline of approximately 880 feet, the pumps at the pump station need to be modified by increasing their discharge head by 80 feet. With the modification of the existing pumps, electrical modifications will be required. Electrical modifications may include a pump controller, and new motor control center.

**Middle Pressure Zone, Well #6 Pump Modifications** - In order to combine the Cedar Ridge/Division and Middle Pressure Zones, Well #6 improvements are required. The Well #6 well pump needs to be modified by increasing their discharge head by 80 feet in order to pump to the desired hydraulic gradeline of 880 feet.

**Middle Pressure Zone, Membrane Filtration for Well #5 & #8** – Given the recent Violation Notice received from IEPA for a failure to provide an assuredly safe source of raw water due to the presence of total coliform in Well #5 and Well #8, treatment may be required by IEPA. It is not feasible to abandon these wells, so it has been assumed that membrane filtration will be required at the Farrell Road Pump Station site to allow for continued use of these wells.

**Middle Pressure Zone, Improvements Required to Reinforce the System-** The following improvements are recommended to strengthen the distribution system by looping and connecting the existing large diameter watermains in the Middle Pressure Zone.

- (A) Division Street - I-355 to Prime Boulevard: Add approximately 2,440 LF of new 16-inch main on Division Street between I-355 and Prime Boulevard.
- (B) Division Street - Farrell Road to Milne Drive:
  - Add approximately 1,300 LF of new 12-inch main on Division Street between Farrell Road and South Bello Drive.
  - Replace the 8-inch main on Division Street between South Bello Drive west beyond Milne Drive to the multiple-family residential area with approximately 1,120 LF of 12-inch main.

**Downtown Pressure Zone, Shallow Well (2 -1200 gpm wells)** – There are currently no wells in the Downtown Pressure Zone. All of the water in the Downtown Pressure Zone is currently supplied from the Middle Pressure Zone through four pressure reducing valves. This limits the City’s ability to meet the daily demands and fire flow requirements in the Downtown Pressure Zone. It is recommended that two (2) wells be constructed in the Downtown Pressure Zone, each with a capacity of 1,200 gpm. The first well is needed to supply the existing maximum day demand (1,081 gpm) while the second well can be kept ready and maintained for standby service.

**Downtown Pressure Zone, Well House/Iron Removal Treatment (2)** – This is a companion improvement to the shallow wells above. Discharge piping/valves as well as electrical for the shallow wells will be housed in each well house. It has been assumed that all future well houses will contain iron removal treatment (pressure filters) similar to the most recently constructed Well House #12.

**Downtown Pressure Zone, 1.5 MG Elevated Tank** – There is currently no water storage, ground or elevated, in the Downtown Pressure Zone. Elevated storage is recommended to meet daily demand peaks and fire flow. It is recommended that the City construct a minimum of 1,500,000 gallons of elevated storage in the Downtown Pressure Zone to meet daily peaks and fire flow demand at normal operating levels.

**Downtown Pressure Zone, Improvements Required to Reinforce the System** - The following improvements are recommended to strengthen the distribution system by looping and connecting the existing large diameter watermains in the Downtown Pressure Zone.

- (A) Division Street – Daviess Street to State Route 171: Replace the 8-inch main on Division Street extending from Davies Street on the west to State Route 171 on the east with approximately 510 LF of 12-inch main.
- (B) State Route 171 – Division Street to Daggett Avenue: Replace the 4-inch main on State Route 171 between Division Street on the north and Daggett Avenue on the south with approximately 1,780 LF of 12-inch main.
- (C) Daggett Avenue – State Route 171 to Washington Street: Replace the 6-inch main on Daggett Avenue from State Route 171 to Hamilton Street with approximately 575 LF of 12-inch main.

- (G) Division Street – Washington Street to Madison Avenue: Add approximately 870 LF of new 12-inch watermain on Division Street extending from Washington Street on the west to Madison Street on the east.
- (H) Madison Street - Division Street to Thorton Street:
- Replace the 8-inch main on Madison Street from Division Street on the south extending to 12<sup>th</sup> Street on the north with approximately 875 LF of 12-inch main.
  - Replace the 4-inch main on Madison Street between 7<sup>th</sup> Street and 12<sup>th</sup> Street with approximately 2,110 LF of 12-inch main.
  - Replace the 6-inch main on Madison Street between 5<sup>th</sup> Street and 7<sup>th</sup> Street with approximately 805 LF of 12-inch main.
  - Replace the 4-inch main on Madison Street between 4<sup>th</sup> Street and 5<sup>th</sup> Street with approximately 380 LF of 12-inch main.
  - Add approximately 350 LF of new 12-inch watermain on Madison Street starting from Thornton Street on the north to 350 feet south.
- (I) 9<sup>th</sup> Street – State Route 171 to Madison Street: Replace the 4-inch main on 9<sup>th</sup> Street between State Route 171 on the west to Madison Street on the east with approximately 1,710 LF of 12-inch main.
- (J) Clinton Street – 5<sup>th</sup> Street to 10<sup>th</sup> Street: Replace the 6-inch main on Clinton Street between 5<sup>th</sup> Street and 10<sup>th</sup> Street with approximately 2,000 LF of 12-inch main.
- (V) 7<sup>th</sup> Street – Madison to 6<sup>th</sup> Street: Replace the 4-inch main on 7<sup>th</sup> Street between 6<sup>th</sup> Street and Madison Street with approximately 780 LF of 12-inch diameter main.

## **City of Lockport**

### **Water And Sewer Rate Study**

#### **Sewer System High Priority Improvements**

The City has performed an analysis of the Sewer System to identify system deficiencies, to determine future system requirements, and to recommend facility improvements that correct existing deficiencies and that provide for future system expansion. As a business, the utility has a responsibility to its customers to guarantee its long-term prosperity for their benefit. The City is committed to providing safe, reliable services to its citizens.

Basic problems that affect the operation of the City's sewer collection system include infiltration, inflow, and blockages. Aging infrastructure, deferred funding for maintenance, and a vision for a more sustainable system highlight the need for improvements.

Inflow and infiltration (I&I) is a term used to describe the ways that groundwater and stormwater enter into dedicated wastewater or sanitary sewer systems. Various sources contribute to the inflow, including footing/foundation drains, roof drains or leaders, downspouts, drains from window wells, outdoor basement stairwells, drains from driveways, groundwater/basement sump pumps, and even streams.

Inflow and infiltration reduce the ability of the City's sanitary sewer system and treatment facilities to transport and treat domestic and industrial wastewater. As a result of the inflow and infiltration, wastewater treatment processes are disrupted and there is risk that poorly treated wastewater may be discharged to the environment.

Inflow and infiltration costs the City's water treatment facilities and consumers large amounts of money in water treatment operating expenses. All water entering a water treatment facility must be treated as wastewater, causing an increase in operating costs proportional to the amount of clean water entering the sanitary sewer system due to inflow and infiltration. It is estimated that Inflow and Infiltration make up 43% (2 million gallons per day) of the overall flow at the Lockport Treatment Plant.

The reduction and control of inflow and infiltration in sanitary sewer systems should be considered with regard to a disciplined, long-term monitoring and maintenance program. Once a source of inflow and infiltration has been discovered, the City must take appropriate action to resolve the problem, including fixing or replacing damaged or leaky sewer pipes and notifying property owners of improper connections

IEPA regulations have been updated to include requirements for monitoring and/or treatment of Phosphorus discharges. This requirement will be applied to the Bonnie Brae facility. The City is required to develop, fund and implement supplemental treatment that may be required to meet the new IEPA Phosphorus discharge requirements.

The sanitary sewer system is closely tied to the City's Comprehensive Land Use Plan. The specific land use identified for specific properties in the Comprehensive Plan allows uses that generate typical sewer flows. The rate of sewer flows is utilized to determine the appropriate capacity and facilities needed for the sanitary sewer system.

**City of Lockport  
Water And Sewer Rate Study**

**Sewer System High Priority Improvements**

**SUMMARY OF IMPROVEMENTS**

	<u>Budgeted Cost</u>
<b><u>Sewer Disconnect Program</u></b> Locations throughout System	\$1,110,112
<b><u>Briggs Street Lift Station</u></b> Affects Pine Valley Subdivision	\$515,000
<b><u>13<sup>th</sup> Street Lift Station</u></b> Affects West Side Residents The 13th Street Lift Station has been identified as a probable source of I&I due to the river crossing near the station. Since I&I is nearly 43% of the average plant flow, reducing any outside sources will provide significant savings in overall treatment costs.	\$450,204
<b><u>Emergency Generator South Basin Plant</u></b>	\$346,058
<b><u>Patty Cakes Lift Station</u></b> Affects Patty Cakes and the Outpost and properties in the immediate area	\$800,000
<b><u>Sanitary Sewer Repairs &amp; Maintenance</u></b>	\$1,000,000 annually
<b><u>Miscellaneous Improvements</u></b>	
#7 Influent Pump & Controls South Basin Plan	\$51,500
Repair and Replace Program on 6 Existing Influent Pumps	\$358,216
Replacement of 18" Air Line to North Plant Aeration Basins	\$61,800
Replace all Blowers and Motors in North Plant	\$163,956
Centrifuge Lift Station Upgrades in North Plant	\$42,436
Installation of Asphalt Roadway	\$27,318

**City of Lockport**  
**Water And Sewer Rate Study**

**Sewer System High Priority Improvements**

**DESCRIPTION OF IMPROVEMENTS**

**Sewer Disconnect Program**

Funding the Sewer Disconnect Program would eliminate events where neighbors cause other neighbors to become flooded during heavy rainfall events. It would also eliminate the risk of fines being issued to the City, because of property backup conditions, raw sewage entering storm water collection systems, creeks and streams. It would eliminate over load conditioning causing the collection system to surge charge. Furthermore, the program would eliminate high Operation & Maintenance costs for plant personnel as well as electric cost during high flow events. Lastly, it would reduce excessive wear and tear on process equipment.

**Briggs Street Lift Station**

The Briggs Street Lift Station project will ultimately avoid the potential risks of preventing any type of sewer backups in the Pine Valley Subdivision. It will correct a construction/engineering problem that currently exists, with the influent elevation connection in the wet well, where the Pine Valley Subdivision is now connected.

This will permit a full three-pump operation of this lift station, of which the station was originally designed for. It will provide for the elimination of a low service jockey pump, which has been installed as a short-term solution to the overall problem. It will also permit the lift station to meet it's full potential to operate in order to accommodate flows for the entire south basin service and drainage basin. Finally, this project will also help in the elimination of the existing odor that has plagued the City, with the 18<sup>th</sup> street master sewer basin.

**13<sup>th</sup> Street Lift Station**

The 13<sup>th</sup> Street Lift Station Project would provide for the much needed replacement of outdated pumping equipment and related controls that would in turn provide the west side residents decreased risks of sewer backups and related system surge charging risks.

**Emergency Generator South Basin Plant**

The generator would provide for uninterrupted pumping and non-restricted flows to the South Basin Waste Water Treatment Plant during periods of power outages, which could ultimately result in property equipment and structure damages at the facility, as well as N.P.D.E.S. excursion penalties.

**Patty Cakes Lift Station**

The Patty Cakes Lift Station will allow the City to meet and fulfill its original agreement with the owners of Patty Cakes and the Outpost to provide sewer services to their establishment as well as the surrounding properties in the immediate area. It will eliminate the need for the businesses to avoid costly services to have their private septic tank pumped down, and hauled to the North Basin Lift Station, where the City is treating this sewage at no charge to the business. The City would gain revenue by having additional sewer user fees and tap-on fees from the properties that would be serviced by this lift station.