

**REPORT ON
WASTE WATER COLLECTION AND TREATMENT
USER CHARGE SYSTEM
(REVIEW EXISTING SEWER RATE ORDINANCE NO.8250 AND RECOMMENDATIONS)**

**PREPARED FOR
THE CITY OF GRANITE CITY, ILLINOIS**

JOB NO. E150202

June 15, 2015

PREPARED BY:





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June 15, 2015
Job No. E150202

Mayor and City Council
City of Granite City
2000 Edison Avenue
Granite City, Illinois 62040

Re: Report on Waste Water Collection and Treatment User Charge System
(Review existing sewer rate Ordinance No.8250 and recommendations)

Ladies and Gentlemen:

We wish to submit herewith our review on the existing sewer rate Ordinance No.8250 and recommendations to update the User Charge Ordinance for the City of Granite City.

We appreciate the opportunity to prepare this report for the City.

Please call on us to explain any phase of the report, and to present the report to you at your convenience.

Respectfully submitted,

JUNEAU ASSOCIATES, INC., P.C.

Charles E. Juneau, P.E., P.L.S.

Enclosure

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CHAPTER 1
CONCLUSIONS AND RECOMMENDATIONS

The City of Granite City presently is collecting sewer user fees based on Sewer User Charge Ordinance No. 8250 (June 2011), establishing rates and charges of users in the City of Granite City, Illinois for the treatment of sewage. The conclusions of this study indicate the following:

1. The Ordinance No.8250 set the sewer user charge rate for August 2012 and after.

| | | 8/1/2011-7/31/2012 | | | | 8/1/2012-on | | |
|------------------------|------------|--------------------|----------------|---------------|------------|----------------|----------------|---------------|
| | | Minimum | Over 4500 gal. | | | Minimum | Over 4500 gal. | |
| | | Cost/Mo. | Cost per | Cost per | | Cost/Mo. | Cost per | Cost per |
| | Allocation | 4500 gal. | 1000 gal. | 100 cu.ft. | Allocation | 4500 gal. | 1000 gal. | 100 cu.ft. |
| 1. Administration | 2% | \$0.26 | \$0.06 | \$0.04 | 3% | \$0.28 | \$0.06 | \$0.04 |
| 2. Capital Improvement | 9% | \$1.16 | \$0.26 | \$0.19 | 10% | \$1.28 | \$0.28 | \$0.21 |
| 3. Sewer O,M&R | 27% | \$3.47 | \$0.77 | \$0.58 | 28% | \$3.83 | \$0.85 | \$0.64 |
| 4. Sewage Treatment | 48% | \$6.16 | \$1.37 | \$1.02 | 49% | \$6.82 | \$1.51 | \$1.13 |
| 5. Debt Service | 14% | \$1.80 | \$0.40 | \$0.30 | 10% | \$1.99 | \$0.45 | \$0.34 |
| Total/month | 100% | \$12.85 | \$2.85 | \$2.13 | 100% | \$14.20 | \$3.15 | \$2.36 |
| % of Increase | | | | | | 10.51% | | |

2. The waste water collection cost and shared cost of the Granite City Regional Waste Water Treatment Plant have been increased over years.
3. Granite City has several outstanding long term debt services for sewer system improvements, and significant expenditures for capital improvement in and after 2009.
4. The annual revenue collected from user charges was much less than total costs to operate the wastewater collection and treatment system.

After reviewing the data regarding wastewater flow, loading cost, water usage, city budgets, and after studying the Illinois EPA requirements for a Sewer Use Ordinance and User Charge System, the following are recommended:

1. The City revises the current Sewer Use Charge Ordinance to maintain sufficient funds to meet the O,M&R requirements of the sewer system.
2. The proposed sewer user charge rates are as follows:

Table 7-3 Proposed Sewer User Charge Rate

| | 8/1/2015-7/31/2016 | | | | 8/1/2016-7/31/2017 | | | |
|--|--------------------|----------------|----------------|---------------|--------------------|----------------|----------------|---------------|
| | Allocation | Minimum | Over 4500 gal. | | Allocation | Minimum | Over 4500 gal. | |
| | | Cost/Mo. | Cost per | Cost per | | Cost/Mo. | Cost per | Cost per |
| | T.6-5 | 4500 gal. | 1000 gal. | 100 cu.ft. | T.6-5 | 4500 gal. | 1000 gal. | 100 cu.ft. |
| 1. Administration | 2% | \$0.45 | \$0.10 | \$0.07 | 2% | \$0.46 | \$0.10 | \$0.08 |
| 2. Capital Improvement and Replacement Reserve | 11% | \$2.06 | \$0.46 | \$0.34 | 11% | \$2.12 | \$0.47 | \$0.35 |
| 3. Sewer O,M&R | 19% | \$3.44 | \$0.76 | \$0.57 | 19% | \$3.54 | \$0.79 | \$0.59 |
| 4. Sewage Treatment | 59% | \$10.66 | \$2.37 | \$1.77 | 60% | \$11.16 | \$2.48 | \$1.85 |
| 5. Debt Service | 8% | \$1.39 | \$0.31 | \$0.23 | 7% | \$1.39 | \$0.31 | \$0.23 |
| Total/month | 100% | \$18.00 | \$4.00 | \$2.99 | 100% | \$18.67 | \$4.15 | \$3.10 |
| % of Increase | | 26.76% | | | | 3.72% | | |

| | 8/1/2017-7/31/2018 | | | | 8/1/2018-7/31/2019 | | | |
|--|--------------------|----------------|----------------|---------------|--------------------|----------------|----------------|---------------|
| | Allocation | Minimum | Over 4500 gal. | | Allocation | Minimum | Over 4500 gal. | |
| | | Cost/Mo. | Cost per | Cost per | | Cost/Mo. | Cost per | Cost per |
| | T.6-5 | 4500 gal. | 1000 gal. | 100 cu.ft. | T.6-5 | 4500 gal. | 1000 gal. | 100 cu.ft. |
| 1. Administration | 2% | \$0.47 | \$0.11 | \$0.08 | 2% | \$0.49 | \$0.11 | \$0.08 |
| 2. Capital Improvement and Replacement Reserve | 11% | \$2.19 | \$0.49 | \$0.36 | 11% | \$2.25 | \$0.50 | \$0.37 |
| 3. Sewer O,M&R | 19% | \$3.64 | \$0.81 | \$0.61 | 19% | \$3.75 | \$0.83 | \$0.62 |
| 4. Sewage Treatment | 60% | \$11.68 | \$2.60 | \$1.94 | 61% | \$12.22 | \$2.72 | \$2.03 |
| 5. Debt Service | 7% | \$1.39 | \$0.31 | \$0.23 | 7% | \$1.39 | \$0.31 | \$0.23 |
| Total/month | 100% | \$19.37 | \$4.30 | \$3.22 | 100% | \$20.10 | \$4.47 | \$3.34 |
| % of Increase | | 3.75% | | | | 3.77% | | |

The projection of revenues and expenditures based on the new rate structure is

| | | FY2016 | FY2017 | FY2018 | FY2019 |
|---|-----------------|-------------|-------------|-------------|-------------|
| Projected Revenue | Table 7-5,6,7,8 | \$5,263,333 | \$5,455,511 | \$5,656,295 | \$5,865,683 |
| Projected Expenditure (Depreciation cost excluded) | Table 6-5 | \$5,234,716 | \$5,432,240 | \$5,638,603 | \$5,854,214 |
| Projected Revenue Over Expenditure | | \$28,617 | \$23,271 | \$17,692 | \$11,469 |

3. **Surcharges**

Over the last nine (9) fiscal years the treatment costs of BOD and TSS at the WWTP fluctuated with low \$0.1586 and high \$0.2532 per lb. of BOD, and low \$0.1969 and high \$0.3073 per lb. of TSS. See Table 7-4.

The current surcharge rates for BOD (\$0.18 per lb.) and TSS (\$0.19 per lb.) can not cover the treatment costs. It is recommended to increase the surcharge rates to cover the BOD and TSS treatment costs:

Table 7-5 Proposed BOD and TSS Surcharge Rate

| | Current per lb. | Proposed Rate Per lb | | | |
|---------------------------|-----------------|----------------------|--------------------|--------------------|--------------------|
| | 8/1/2012-on | 8/1/2015-7/31/2016 | 8/1/2016-7/31/2017 | 8/1/2015-7/31/2016 | 8/1/2016-7/31/2017 |
| BOD in excess of 200 mg/L | \$0.18 | \$0.23 | \$0.24 | \$0.25 | \$0.26 |
| % of Increase | | 27.78% | 4.35% | 4.17% | 4.00% |
| TSS in excess of 250 mg/L | \$0.19 | \$0.22 | \$0.24 | \$0.26 | \$0.28 |
| % of Increase | | 15.79% | 9.09% | 8.33% | 7.69% |

CHAPTER 2

PURPOSE

2.1 INTRODUCTION

The city of Granite City currently collects a User Charge from all Granite City residential, commercial, and industrial users of their Publicly Owned Treatment Works (POTW) for Operation, Maintenance, Replacement (O,M,&R), and Billing, specifically, and solely for treatment of wastewater at the Regional Wastewater Treatment Plant. All funds collected via this User Charge are deposited into an Enterprise Fund (Sewer Treatment Plant Fund 70) to be expended solely for treatment and disposal of sewage at the Wastewater Treatment Plant.

All Operation, Maintenance, Replacement, and Debt Service costs associated with the sanitary, combined, and separate storm collection systems are included in the sewer user charges. All collection system O,M,&R work is currently, and has been in the past, performed by the City's Street Department, or by private contracts issued by the City Council.

In accordance with both Federal EPA and State IEPA grant and low interest loan requirements, the City of Granite City must establish and maintain a system of User Charges, to assure that each recipient of wastewater treatment services will pay their proportionate share of the costs of operations and maintenance (including replacement) of all transportation and treatment services provided by the city of Granite City. These charges must be reviewed annually and revised if necessary to reflect the actual costs experienced by the collection and treatment systems of Granite City.

The current user charge was established by the Ordinance No.8250 (June 2011).

2.2 PURPOSE

This report was prepared to review the existing user charge system which is based on the 2009's report "An Amendment of 2003 Report" dated April 2010, and to propose necessary changes to the existing Ordinance No.8250 of the sewer user charge system.

The purpose of this report is to present the study results of the Granite City's wastewater collection and treatment operations, costs, and users. The study consists of the preparation of a report outlining the steps taken to investigate, analyze and recommend a sewer user rate policy to meet the requirements of the City of Granite City. The report will make recommendations for the revision of the User Charge System that will comply with the IEPA rules and regulations.

This report is based on a study which was conducted to define the costs and the basis of cost allocations for City sewer system users.

The engineering services provided by Juneau Associates, Inc., P.C. and the study scope are as follows:

1. Review of previous reports on wastewater collection and treatment, and user charge systems.
2. Review of City audit expenses and revenues of sewer collection and treatment system over previous five (5) fiscal years (FY2010, FY2011, FY2012, FY2013, and FY2014).
3. Update tables in 2009's report to include data from the past five fiscal years.
4. Make rate adjustment recommendations.

CHAPTER 3

IEPA REQUIREMENTS FOR SEWER USE ORDINANCE AND USER CHARGES

3.1 GENERAL

Under the requirements and regulations by the Illinois Environmental Protection Agency (IEPA) (Ref. Chapter II, 365.920, 35 Illinois Administrative Code Sub Title C. Amended at 20 Ill. Re. 788, effective January 1, 1996), the City of Granite City is required to establish and maintain a system of User Charges to assure that each recipient of wastewater treatment services will pay their proportionate share of the cost of operation, maintenance, and replacement of treatment works within the of Granite City service area.

The system of User Charges developed must meet the requirement of the IEPA, and be written in the form of a Sewer Use Ordinance for adoption and enforcement by the City Council, because the City has received IEPA grant and loan funds in the past and desires to increase financial assistance from IEPA in the future.

3.2 USER CHARGE SYSTEM REQUIREMENTS

In accordance with these regulations, the City of Granite City has been required to establish a User Charge System, and to maintain this system. This system is to result in the distribution of all costs of operation and maintenance, including replacement, in proportion to each user's contribution to the total wastewater loading of the regional treatment plant and sewer system. The basis for determining this contribution will include wastewater strength, volume, and delivery flow rate characteristics when applicable.

The User Charge System is required to generate sufficient revenues to offset the cost of all operation and maintenance. It must also include a charge to provide funds for replacement of equipment which is necessary during the service life of the treatment plant and city's sewer system to maintain capacity and performance for which the system was designed and constructed. Another requirement is that this User Charge System be reviewed annually and revised periodically to reflect actual O,M,&R costs.

The City of Granite City must have a User Charge System that is updated and meets the requirements of the IEPA in order to receive grant and low interest funding for sewer system improvements and repairs.

3.3 HISTORICAL GRANITE CITY SEWER RATE ORDINANCES

Table 3-1 is a summary of historical user charge ordinances. Table 3-2 is a list of historical sewer user charge ordinances and rates. Table 3-3 is the current user charge rates.

Table 3-1 History of User Charge System

| | Date | Ordinance No. | Users |
|----|------------|---------------|--|
| 1 | 12/22/1975 | 3284 | Residential |
| 2 | 11/28/1978 | 3555 | Residential |
| | | | Industrial |
| 3 | 12/14/1978 | 3558 | Non-resident user |
| | | | (Added outside city capital recovery charges) |
| 4 | 1/9/1981 | 3752 | Non-resident user |
| | | | (Special Service Area No.1 Added delinquent debt services) |
| 5 | 3/13/1982 | 3878 | Industrial, pre-treatment BOD and TSS surcharge |
| 6 | 7/25/1983 | 3925 | Residential Commercial, Industrial |
| 7 | 10/24/1986 | 4129 | Residential |
| | | | (Added debt service) |
| | | | Commercial, Industrial BOD and TSS surcharge |
| 8 | 5/17/1994 | 4823 | Residential |
| | | | (Removed debt service) |
| | | | Commercial, Industrial BOD and TSS surcharge |
| 9 | 3/2/2004 | 7738 | Residential |
| | | | Commercial, Industrial BOD and TSS surcharge |
| 10 | 6/7/2011 | 8250 | Residential |
| | | | Commercial, Industrial BOD and TSS surcharge |
| 11 | 7/5/2011 | 8253 | Sewer connection fee |

Table 3-2 List of Sewer User Charge Ordinances

1. Ordinance No. 3284 (December 22, 1975)
All residential users: Fixed \$6.00 per quarter

2. Ordinance No. 3555 (November 28, 1978)
All users: Fixed \$13.00 per quarter
Quarter Rate per 100 cu.ft. for Residential Users:

| | Treatment | Sewer Billing | Debt Service | Total |
|--------------------|-----------|---------------|--------------|---------|
| First 2,100 cu.ft. | \$0.334 | \$0.125 | \$0.16 | \$0.62 |
| Next 36,900 cu.ft. | \$0.334 | \$0.125 | \$0.16 | \$0.62 |
| Next 39,000 cu.ft. | \$0.334 | \$0.125 | \$0.14 | \$0.60 |
| Over 78,000 cu.ft. | \$0.334 | \$0.125 | \$0.12 | \$0.58 |
| Flat Rate | \$7.01 | \$2.63 | \$3.36 | \$13.00 |

U.S. Army:
All quantities: \$0.215 Treatment, \$0.005 Sewer Billing, \$0.22 Total
Quarter Rate per 100 cu.ft. for Industrial and All Others:

| | | | | |
|--------------------|---------|---------|---------|---------|
| First 2,100 cu.ft. | \$0.334 | \$0.005 | \$0.280 | \$0.619 |
| Next 36,900 cu.ft. | \$0.334 | \$0.005 | \$0.280 | \$0.619 |
| Next 39,000 cu.ft. | \$0.334 | \$0.005 | \$0.260 | \$0.599 |

| | | | | |
|-----------------------|---------|---------|---------|---------|
| Next 81,000 cu.ft. | \$0.334 | \$0.005 | \$0.240 | \$0.579 |
| Next 81,000 cu.ft. | \$0.334 | \$0.005 | \$0.210 | \$0.549 |
| Next 162,000 cu.ft. | \$0.334 | \$0.005 | \$0.190 | \$0.529 |
| Next 1,098,000 cu.ft. | \$0.334 | \$0.005 | \$0.140 | \$0.479 |
| Next 1,500,000 cu.ft. | \$0.334 | \$0.005 | \$0.090 | \$0.429 |
| Flat Rate | \$7.01 | \$0.11 | \$5.88 | \$13.00 |

Surcharges:

Surcharge for BOD in excess of concentration 200 mg/L:
\$50.00/1,000 lbs of BOD
Surcharge for TSS in excess of concentration 250 mg/L:
\$60.00/1,000 lbs of TSS

3. Ordinance No. 3558 (December 14, 1978)

Additional Capital Recovery Charges For Non-Residential Users

All residential users: Surcharge of \$10.00 per quarter per residential unit

Commercial or industrial users: be established by the City Council from time to time with reference to each individual user, taking into account the quality and quantity of sewage discharged to and to be treated by the City Sewer Plant.

4. Ordinance No. 3752 (January 9, 1981)

Delinquent Debt-Service Recovery Fee for Non-Resident Users

(Special Service Area No.1)

All residential users: \$5.00 per quarter per residential unit

Commercial or industrial users: be established by the City Council from time to time with reference to each individual user, taking into account the quality and quantity of sewage discharged to and to be treated by the City Sewer Plant.

5. Ordinance No. 3878 (March 13, 1982)

- a. Equipment Costs (One-time equipment user charge)
- b. Administration Costs of operation of the industrial pretreatment program: \$0.04/100 cu.ft.
- c. Sampling and Analytical Costs
- d. Other Fees: Industrial user discharge permit fee \$200.00

6. Ordinance No. 3925 (July 25, 1983)

Minimum Charge to be applied to all users:

Minimum Charge per quarter = \$18.00/user (beginning 8/1/1983)

Quarter Rate per 100 cu.ft:

| | 5/1/83-7/31/83 | 8/1/83 |
|-----------------------|----------------|--------|
| First 2,100 cu.ft. | \$0.74 | \$0.86 |
| Next 36,900 cu.ft. | \$0.74 | \$0.86 |
| Next 39,000 cu.ft. | \$0.71 | \$0.83 |
| Next 81,000 cu.ft. | \$0.69 | \$0.80 |
| Next 81,000 cu.ft. | \$0.65 | \$0.76 |
| Next 162,000 cu.ft. | \$0.63 | \$0.73 |
| Next 1,098,000 cu.ft. | \$0.57 | \$0.66 |
| Next 1,500,000 cu.ft. | \$0.51 | \$0.59 |

Surcharges:

Surcharge for BOD in excess of concentration 200 mg/L:
\$170.00/1,000 lbs of BOD
Surcharge for TSS in excess of concentration 250 mg/L:
\$80.00/1,000 lbs of TSS

7. Ordinance No. 4129 (October 24, 1986)

All users: Minimum \$18.00 per quarter

Quarter Rate per 100 cu.ft. for Residential Users:

| | Treatment | Sewer Billing | Debt Service | Total |
|---|-----------|---------------|--------------|---------|
| First 2,100 cu.ft. | \$0.57 | \$0.125 | \$0.16 | \$0.86 |
| Next 36,900 cu.ft. | \$0.57 | \$0.125 | \$0.16 | \$0.86 |
| Next 39,000 cu.ft. | \$0.57 | \$0.125 | \$0.14 | \$0.84 |
| Over 78,000 cu.ft. | \$0.57 | \$0.125 | \$0.12 | \$0.82 |
| Flat Rate | \$12.00 | \$2.60 | \$3.40 | \$18.00 |
| Quarter Rate per 100 cu.ft. for Industrial and All Others: | | | | |
| First 2,100 cu.ft. | \$0.57 | \$0.005 | \$0.280 | \$0.86 |
| Next 36,900 cu.ft. | \$0.57 | \$0.005 | \$0.280 | \$0.86 |
| Next 39,000 cu.ft. | \$0.57 | \$0.005 | \$0.260 | \$0.84 |
| Next 81,000 cu.ft. | \$0.57 | \$0.005 | \$0.240 | \$0.82 |
| Next 81,000 cu.ft. | \$0.57 | \$0.005 | \$0.210 | \$0.79 |
| Next 162,000 cu.ft. | \$0.57 | \$0.005 | \$0.190 | \$0.77 |
| Next 1,098,000 cu.ft. | \$0.57 | \$0.005 | \$0.140 | \$0.72 |
| Next 1,500,000 cu.ft. | \$0.57 | \$0.005 | \$0.090 | \$0.67 |
| Flat Rate | \$12.00 | \$0.10 | \$5.90 | \$18.00 |
| Surcharges: | | | | |
| Surcharge for BOD in excess of concentration 200 mg/L: \$170.00/1,000 lbs of BOD | | | | |
| Surcharge for TSS in excess of concentration 250 mg/L: \$80.00/1,000 lbs of TSS | | | | |

8. Ordinance No. 4823 (Approved by Mayor on May 17, 1994)

Minimum Charge to be applied to all users: Minimum Charge per quarter = \$18.00/user

Quarter Rate per 100 cu.ft. for Residential Users:

| | Treatment | Sewer Billing | Total |
|--------------------|-----------|---------------|---------|
| First 2,100 cu.ft. | \$0.73 | \$0.125 | \$0.86 |
| Next 36,900 cu.ft. | \$0.73 | \$0.125 | \$0.86 |
| Next 39,000 cu.ft. | \$0.709 | \$0.125 | \$0.83 |
| Over 78,000 cu.ft. | \$0.68 | \$0.125 | \$0.80 |
| Flat Rate | \$15.40 | \$2.60 | \$18.00 |

Quarter Rate per 100 cu.ft. for Industrial and All Others:

| | Treatment | Sewer Billing | Total |
|-----------------------|-----------|---------------|---------|
| First 2,100 cu.ft. | \$0.85 | \$0.005 | \$0.86 |
| Next 36,900 cu.ft. | \$0.85 | \$0.005 | \$0.86 |
| Next 39,000 cu.ft. | \$0.825 | \$0.005 | \$0.83 |
| Next 81,000 cu.ft. | \$0.80 | \$0.005 | \$0.83 |
| Next 81,000 cu.ft. | \$0.76 | \$0.005 | \$0.83 |
| Next 162,000 cu.ft. | \$0.729 | \$0.005 | \$0.83 |
| Next 1,098,000 cu.ft. | \$0.66 | \$0.005 | \$0.83 |
| Next 1,500,000 cu.ft. | \$0.589 | \$0.005 | \$0.83 |
| Flat Rate | \$17.90 | \$0.10 | \$18.00 |

Surcharges:

Surcharge for BOD in excess of concentration 200 mg/L: \$170.00/1,000 lbs of BOD
Surcharge for TSS in excess of concentration 250 mg/L: \$80.00/1,000 lbs of TSS

9. Ordinance No. 7738 (March 2, 2004)

(a) Fixed rate applied to all single family residences:

| | |
|---------------------------|----------------------------|
| \$9.50/user/month | from 5/1/2004 to 4/30/2005 |
| \$10.50/user/month | from 5/1/2005 to 4/30/2006 |
| \$11.50/user/month | from 5/1/2006 |

(b) Commercial users, industrial users, mobile home parks, and all multiple family dwellings shall be charged the larger of the following:

- (1) Either the following fixed rate per month per unit where usage is equal or less than 4,500 gallons for the month; or
- (2) the following cost per 1,000 gallons for all water consumption or metered sewer usage.

| Effective Date | Min. Cost/month | Cost/100 cu.ft. | Cost/1,000 gallons |
|--------------------|-----------------|-----------------|--------------------|
| 5/1/2004-4/30/2005 | \$9.50 | \$1.58 | \$2.10 |
| 5/1/2005-4/30/2006 | \$10.50 | \$1.74 | \$2.33 |
| 5/1/2006-4/30/2007 | \$11.50 | \$1.91 | \$2.55 |

Sewer User Charge Allocation:

| | 5/1/04-4/30/05 | | 5/1/05-4/30/06 | | 5/1/06-4/30/07 | |
|------------------------|----------------|-----------|----------------|-----------|----------------|-----------|
| | Cost/Mo. | Cost/Mo. | Cost/Mo. | Cost/Mo. | Cost/Mo. | Cost/Mo. |
| | 4500 gal. | 1000 gal. | 4500 gal. | 1000 gal. | 4500 gal. | 1000 gal. |
| 1. Administration | \$0.76 | \$0.17 | \$0.82 | \$0.18 | \$0.90 | \$0.20 |
| 2. Capital Improvement | 1.26 | 0.28 | 1.40 | 0.31 | 1.53 | 0.34 |
| 3. Sewer O,M&R | 1.85 | 0.41 | 2.07 | 0.46 | 2.25 | 0.50 |
| 4. Sewage Treatment | 4.41 | 0.98 | 4.86 | 1.08 | 5.31 | 1.18 |
| 5. Debt Service | 1.22 | 0.27 | 1.35 | 0.30 | 1.49 | 0.33 |
| Total/month | \$9.50 | \$2.11 | \$10.50 | \$2.33 | \$11.48 | \$2.55 |

Surcharges:

Surcharge for BOD in excess of concentration 200 mg/L: \$0.14/lb of BOD
 Surcharge for TSS in excess of concentration 250 mg/L: \$0.15/lb of SS

Table 3-3 Current User Charge System

10. Ordinance No. 8250 (June 7, 2011)

- (a) Fixed rate applied to all single family residences:

| | |
|--------------------|----------------------------|
| \$12.85/user/month | from 8/1/2011 to 7/31/2012 |
| \$14.20/user/month | from 8/1/2012 - on |
- (b) Commercial users, industrial users, mobile home parks, and all multiple family dwellings shall be charged the larger of the following:
 - (1) Either the following fixed rate per month per unit where usage is equal or less than 4,500 gallons for the month; or
 - (2) the following cost per 1,000 gallons for all water consumption or metered sewer usage.

| Effective Date | Min. Cost/month | Cost/100 cu.ft. | Cost/1,000 gallons |
|--------------------|-----------------|-----------------|--------------------|
| 8/1/2011-7/31/2012 | \$12.85 | \$2.13 | \$2.85 |
| 8/1/2012 - on | \$14.20 | \$2.36 | \$3.15 |

Sewer User Charge Allocation:

| | | 8/1/2011-7/31/2012 | | | | 8/1/2012-on | | |
|------------------------|-------------|--------------------|----------------|---------------|-------------|----------------|----------------|---------------|
| | | Minimum | Over 4500 gal. | | | Minimum | Over 4500 gal. | |
| | | Cost/Mo. | Cost per | Cost per | | Cost/Mo. | Cost per | Cost per |
| | Allocation | 4500 gal. | 1000 gal. | 100 cu.ft. | Allocation | 4500 gal. | 1000 gal. | 100 cu.ft. |
| 1. Administration | 2% | \$0.26 | \$0.06 | \$0.04 | 3% | \$0.28 | \$0.06 | \$0.04 |
| 2. Capital Improvement | 9% | \$1.16 | \$0.26 | \$0.19 | 10% | \$1.28 | \$0.28 | \$0.21 |
| 3. Sewer O,M&R | 27% | \$3.47 | \$0.77 | \$0.58 | 28% | \$3.83 | \$0.85 | \$0.64 |
| 4. Sewage Treatment | 48% | \$6.16 | \$1.37 | \$1.02 | 49% | \$6.82 | \$1.51 | \$1.13 |
| 5. Debt Service | 14% | \$1.80 | \$0.40 | \$0.30 | 10% | \$1.99 | \$0.45 | \$0.34 |
| Total/month | 100% | \$12.85 | \$2.85 | \$2.13 | 100% | \$14.20 | \$3.15 | \$2.36 |
| % of Increase | | | | | | 10.51% | | |

Surcharges:

Surcharge for BOD in excess of concentration 200 mg/L
 Surcharge for TSS in excess of concentration 250 mg/L

| Effective Date | BOD/lb. | TSS/lb. |
|--------------------|---------|---------|
| 8/1/2011-7/31/2012 | \$0.16 | \$0.17 |
| 8/1/2012 - on | \$0.18 | \$0.19 |

11. Ordinance No. 8253 (July 5, 2011)

Building Sewers and Connections

Connection Permit Fees:

| | |
|-------------|------------|
| Residential | \$250.00 |
| Commercial | \$500.00 |
| Industrial | \$1,000.00 |

12. Ordinance No. 8401 (December 18, 2013)

Industrial Pretreatment Program to include 19 significant industrial users (SIU) discharging an average of 25,000 gallons or more of process wastewater per day to Granite City Wastewater Treatment Plant.

| | |
|-------------------------------------|--|
| Administrative Charge: | \$0.10 per 100 cu.ft. |
| Sampling and Site Inspection Costs: | \$120.00 per sampling visit or follow-up visit |
| Annual Inspection Costs: | \$480.00 |
| Compliance Study Costs: | \$500.00 per day |
| Permit Fee: | \$400.00 |

CHAPTER 4

EXISTING WASTEWATER COLLECTION AND TREATMENT SYSTEMS

4.1 GENERAL

Pursuant to an intergovernmental cooperation agreement originally agreed to in April 1984 between the Granite City, MESD, Glen Carbon and Madison County, the wastewater treatment plant began to accept and treat wastewater from the MESD, Glen Carbon and MCSSA#1. The participants have agreed to purchase wastewater treatment services from the City at rates and charges established by the Granite City Regional Treatment Board. The shared amount of flow and loadings by each of four wastewater contributors to the treatment plant is allocated based on the actual recorded flow, BOD and suspended solids for each year of operations. The superintendent of the Regional Wastewater Treatment Plant, and Regional Board members consisting of each regional wastewater treatment participant representatives, meet annually to review each participant's wastewater contribution, the wastewater treatment plant budget and actual expenses. The Regional Board then makes recommendations to the Granite City Council concerning the annual treatment plant budget and other matters relating to the wastewater treatment plant.

4.2 NAMEOKI AREA

The Nameoki Area sewer system was rehabilitated in 2009 funded by the IEPA Water Pollution Control Loan Program (L171639). The rehabilitation project includes video inspection and cured-in-place lining of about 2,261 feet of 15" sewer, 1,217 feet of 12" sewer, 6,942 feet of 10" sewer, 30,533 feet of 8" sewer, and 85 manholes.

Wastewater from the Nameoki sewer system is discharged into the West Granite sewer system through four sewerage lift stations: No.1 (old No.6), No.2 (old No.5), No.4 (old No.3), and No.13 (old No.1).

4.3 WEST GRANITE AREA

The 84", 96" and 108" interceptor sewers located in the west side of the City collect sewage flows from Granite City, Glen Carbon, MESD and MCSSA#1. A portion of the West Granite Area sewer system and interceptor sewers were rehabilitated in 2013 funded by the IEPA Water Pollution Control Loan Program (L174113).

The collected sewage is discharged to the Granite City Regional Wastewater Treatment Plant.

4.4 WASTEWATER TREATMENT PLANT

The Regional Wastewater Treatment Plant is designed for reduction of both BOD and suspended solids at influent concentrations of 300 mg/l and 550 mg/l respectively in the influent to meet NPDES requirement. The design average daily flow is 23 MGD. The

design peak hydraulic capacity of the plant is 34.5 MGD. In addition, the plant contains units for treatment of excess storm water. In periods of wet weather the sewers in Granite City transport both sanitary waste and storm water to the wastewater treatment plant. The combined overflow treatment system treats excess flow when the total flow in the sewers exceeds the design hydraulic capacity of the treatment plant. The combined capacity of the secondary treatment plant and the bypass treatment system is 230 MGD. The Combined Overflow Tank (COT) system design capacity is 195.5 MGD.

CHAPTER 5
WASTEWATER FLOWS AND BILLING

5.1 GENERAL

The water usage has decreased over the in last few years along with the population of Granite City.

| | |
|-------------------------|--------|
| US Census 1990 | 32,862 |
| US Census 2000 | 31,301 |
| US Census 2010 | 29,849 |
| US Census 2012 Estimate | 29,545 |

5.2 PRESENT WASTEWATER FLOW AND LOADING

The Granite City Regional Wastewater Treatment Plant receives wastewater from the City of Granite City, Glen Carbon, Metro East Sewer District, and Madison County Sanitary Service Area No.1. The monthly sewage flows collected by the Regional WWTP over the last seven (7) fiscal years are shown in Table 5-1 based on the data of the Granite City Regional WWT Board reports.

The Granite City flow and loadings over the last eight (8) fiscal years is shown in Table 5-2. The flow includes infiltration/inflow.

Table 5-2 Granite City Wastewater Flow and Loadings to WWTP

| | Flow (gal.) | BOD, lbs | TSS, lbs |
|----------------|----------------------|------------------|------------------|
| FY2007 | 1,375,527,000 | 6,194,441 | 3,406,810 |
| FY2008 | 1,340,515,000 | 5,431,722 | 3,983,219 |
| FY2009 | 1,895,441,250 | 6,948,239 | 2,869,641 |
| FY2010 | 2,545,617,000 | 6,527,042 | 3,973,455 |
| FY2011 | 2,273,678,000 | 5,381,277 | 4,244,757 |
| FY2012 | 1,718,054,000 | 4,605,864 | 3,151,688 |
| FY2013 | 1,278,654,000 | 5,617,673 | 2,826,939 |
| FY2014 | 1,500,719,000 | 7,066,693 | 3,695,931 |
| <i>Average</i> | <i>1,741,026,000</i> | <i>5,972,000</i> | <i>3,519,000</i> |

The Granite City Regional Board reviews and approves the cost sharing every year. The Table 5-3 shows the cost sharing percentages of Granite City based contributions of flow, BOD, and TSS in last eight (8) fiscal years.

Table 5-3 Wastewater Treatment Cost Shared by Granite City

| Parameter cost per unit | FY2007 | FY2008 | FY2009 | FY2010 | FY2011 | FY2012 | FY2013 | FY2014 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Flow /1000 gal. | \$0.32 | \$0.33 | \$0.26 | \$0.20 | \$0.21 | \$0.30 | \$0.45 | \$0.37 |
| BOD/lb. | \$0.18 | \$0.20 | \$0.16 | \$0.18 | \$0.20 | \$0.25 | \$0.25 | \$0.21 |
| TSS/lb. | \$0.11 | \$0.21 | \$0.23 | \$0.20 | \$0.20 | \$0.26 | \$0.31 | \$0.24 |
| % of total cost Shared by Granite | 55.05% | 52.55% | 44.43% | 50.36% | 51.58% | 47.81% | 52.14% | 52.76% |

Table 5-1 Regional WWTP Flow (gallons) Contributed by Users

| FY2006 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
|-----------------|----------------------|--------------------|----------------------|--------------------|----------------------|
| May 05 | 109,195,000 | 38,013,000 | 82,898,000 | 38,454,000 | 268,560,000 |
| Jun. 05 | 141,921,000 | 32,452,000 | 110,564,000 | 42,213,000 | 327,150,000 |
| Jul. 05 | 127,568,000 | 32,041,000 | 57,458,000 | 29,963,000 | 247,030,000 |
| Aug. 05 | 184,580,000 | 32,821,000 | 65,816,000 | 34,343,000 | 317,560,000 |
| Sep. 05 | 190,652,000 | 36,249,000 | 75,161,000 | 37,818,000 | 339,880,000 |
| Oct. 05 | 108,608,000 | 33,353,000 | 63,288,000 | 32,671,000 | 237,920,000 |
| Nov. 05 | 125,843,000 | 32,772,000 | 66,331,000 | 33,734,000 | 258,680,000 |
| Dec. 05 | 99,174,000 | 35,722,000 | 63,335,000 | 34,429,000 | 232,660,000 |
| Jan. 06 | 107,463,000 | 38,214,000 | 72,491,000 | 36,102,000 | 254,270,000 |
| Feb. 06 | 86,777,000 | 33,551,000 | 63,035,000 | 31,697,000 | 215,060,000 |
| Mar. 06 | 113,983,000 | 40,904,000 | 83,269,000 | 37,414,000 | 275,570,000 |
| Apr. 06 | 95,671,000 | 36,053,000 | 108,439,000 | 35,627,000 | 275,790,000 |
| <i>Annual</i> | <i>1,491,435,000</i> | <i>422,145,000</i> | <i>912,085,000</i> | <i>424,465,000</i> | <i>3,250,130,000</i> |
| <i>Avg. Mo.</i> | <i>124,286,250</i> | <i>35,178,750</i> | <i>76,007,083</i> | <i>35,372,083</i> | <i>270,844,167</i> |
| FY2007 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
| May 06 | 114,966,000 | 36,445,000 | 95,305,000 | 35,104,000 | 281,820,000 |
| Jun. 06 | 126,905,000 | 34,474,000 | 63,993,000 | 34,598,000 | 259,970,000 |
| Jul. 06 | 113,195,000 | 35,216,000 | 73,160,000 | 34,459,000 | 256,030,000 |
| Aug. 06 | 104,549,000 | 32,540,000 | 59,141,000 | 32,700,000 | 228,930,000 |
| Sep. 06 | 100,567,000 | 30,755,000 | 61,769,000 | 30,729,000 | 223,820,000 |
| Oct. 06 | 133,298,000 | 31,740,000 | 70,389,000 | 32,753,000 | 268,180,000 |
| Nov. 06 | 136,648,000 | 35,118,000 | 78,394,000 | 39,110,000 | 289,270,000 |
| Dec. 06 | 84,519,000 | 33,710,000 | 68,370,000 | 33,461,000 | 220,060,000 |
| Jan. 07 | 126,430,000 | 43,814,000 | 95,775,000 | 48,101,000 | 314,120,000 |
| Feb. 07 | 82,484,000 | 32,412,000 | 83,722,000 | 37,292,000 | 235,910,000 |
| Mar. 07 | 147,978,000 | 42,010,000 | 123,545,000 | 42,077,000 | 355,610,000 |
| Apr. 07 | 103,988,000 | 41,233,000 | 152,118,000 | 44,101,000 | 341,440,000 |
| <i>Annual</i> | <i>1,375,527,000</i> | <i>429,467,000</i> | <i>1,025,681,000</i> | <i>444,485,000</i> | <i>3,275,160,000</i> |
| <i>Avg. Mo.</i> | <i>114,627,250</i> | <i>35,788,917</i> | <i>85,473,417</i> | <i>37,040,417</i> | <i>272,930,000</i> |

| FY2008 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
|-----------------|----------------------|--------------------|----------------------|--------------------|----------------------|
| May 07 | 114,219,000 | 39,527,000 | 153,113,000 | 43,721,000 | 350,580,000 |
| Jun. 07 | 98,557,000 | 34,486,000 | 100,416,000 | 35,751,000 | 269,210,000 |
| Jul. 07 | 109,372,000 | 32,417,000 | 78,694,000 | 33,687,000 | 254,170,000 |
| Aug. 07 | 87,968,000 | 28,332,000 | 84,702,000 | 31,068,000 | 232,070,000 |
| Sep. 07 | 97,229,000 | 29,018,000 | 65,059,000 | 28,844,000 | 220,150,000 |
| Oct. 07 | 98,811,000 | 31,154,000 | 80,992,000 | 29,953,000 | 240,910,000 |
| Nov. 07 | 89,412,000 | 30,416,490 | 67,287,000 | 27,204,510 | 214,320,000 |
| Dec. 07 | 88,266,000 | 34,877,500 | 67,610,000 | 21,936,500 | 212,690,000 |
| Jan. 08 | 102,823,000 | 34,877,500 | 69,325,000 | 28,554,500 | 235,580,000 |
| Feb. 08 | 133,031,000 | 34,877,500 | 113,797,000 | 50,214,500 | 331,920,000 |
| Mar. 08 | 183,447,000 | 82,015,000 | 190,953,000 | 57,585,000 | 514,000,000 |
| Apr. 08 | 137,380,000 | 56,244,300 | 115,085,000 | 39,490,700 | 348,200,000 |
| <i>Annual</i> | <i>1,340,515,000</i> | <i>468,242,290</i> | <i>1,187,033,000</i> | <i>428,009,710</i> | <i>3,423,800,000</i> |
| <i>Avg. Mo.</i> | <i>111,709,583</i> | <i>39,020,191</i> | <i>98,919,417</i> | <i>35,667,476</i> | <i>285,316,667</i> |

| FY2009 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
|-----------------|----------------------|--------------------|----------------------|--------------------|----------------------|
| May 08 | 219,668,000 | 31,558,000 | 185,020,000 | 130,374,000 | 566,620,000 |
| Jun. 08 | 190,058,000 | 22,642,000 | 206,788,000 | 97,752,000 | 517,240,000 |
| Jul. 08 | 243,136,000 | 30,257,000 | 211,835,000 | 74,272,000 | 559,500,000 |
| Aug. 08 | 149,910,250 | 23,579,000 | 121,537,750 | 54,523,000 | 349,550,000 |
| Sep. 08 | 244,116,000 | 22,957,000 | 158,917,000 | 83,390,000 | 509,380,000 |
| Oct. 08 | 103,227,000 | 21,881,000 | 75,760,000 | 48,072,000 | 248,940,000 |
| Nov. 08 | 97,850,000 | 27,323,000 | 65,993,000 | 35,124,000 | 226,290,000 |
| Dec. 08 | 133,782,000 | 34,175,000 | 94,455,000 | 50,278,000 | 312,690,000 |
| Jan. 09 | 105,430,000 | 35,288,000 | 92,244,000 | 45,758,000 | 278,720,000 |
| Feb. 09 | 141,659,000 | 37,633,000 | 148,137,000 | 53,881,000 | 381,310,000 |
| Mar. 09 | 111,118,000 | 39,692,000 | 137,734,000 | 54,376,000 | 342,920,000 |
| Apr. 09 | 155,487,000 | 50,379,000 | 142,397,000 | 79,647,000 | 427,910,000 |
| <i>Annual</i> | <i>1,895,441,250</i> | <i>377,364,000</i> | <i>1,640,817,750</i> | <i>807,447,000</i> | <i>4,721,070,000</i> |
| <i>Avg. Mo.</i> | <i>157,953,438</i> | <i>31,447,000</i> | <i>136,734,813</i> | <i>67,287,250</i> | <i>393,422,500</i> |

| FY2010 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
|-----------------|----------------------|--------------------|----------------------|--------------------|----------------------|
| May 09 | 203,733,000 | 55,561,000 | 190,249,000 | 91,227,000 | 540,770,000 |
| Jun. 09 | 232,845,000 | 41,938,000 | 178,618,000 | 74,219,000 | 527,620,000 |
| Jul. 09 | 171,470,000 | 36,880,000 | 123,724,000 | 53,856,000 | 385,930,000 |
| Aug. 09 | 164,469,000 | 32,472,000 | 124,242,000 | 44,547,000 | 365,730,000 |
| Sep. 09 | 186,983,000 | 30,301,000 | 91,601,000 | 46,075,000 | 354,960,000 |
| Oct. 09 | 336,270,000 | 57,014,000 | 227,009,000 | 128,027,000 | 748,320,000 |
| Nov. 09 | 223,569,000 | 41,056,000 | 195,238,000 | 92,247,000 | 552,110,000 |
| Dec. 09 | 294,486,000 | 59,775,000 | 238,349,000 | 115,330,000 | 707,940,000 |
| Jan. 10 | 186,100,000 | 43,165,750 | 209,590,000 | 88,204,250 | 527,060,000 |
| Feb. 10 | 155,951,000 | 41,100,000 | 114,753,000 | 70,736,000 | 382,540,000 |
| Mar. 10 | 170,597,000 | 43,607,000 | 195,091,000 | 70,775,000 | 480,070,000 |
| Apr. 10 | 219,144,000 | 47,678,000 | 167,718,000 | 77,570,000 | 512,110,000 |
| <i>Annual</i> | <i>2,545,617,000</i> | <i>530,547,750</i> | <i>2,056,182,000</i> | <i>952,813,250</i> | <i>6,085,160,000</i> |
| <i>Avg. Mo.</i> | <i>212,134,750</i> | <i>44,212,313</i> | <i>171,348,500</i> | <i>79,401,104</i> | <i>507,096,667</i> |

| FY2011 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
|---------------|---------------------|--------------------|---------------|----------------|---------------|
| May 10 | 316,955,000 | 51,015,000 | 227,516,000 | 113,144,000 | 708,630,000 |
| Jun. 10 | 190,279,000 | 42,720,000 | 196,559,000 | 79,832,000 | 509,390,000 |
| Jul. 10 | 311,823,000 | 35,219,000 | 258,883,000 | 74,573,000 | 680,498,000 |
| Aug. 10 | 206,914,000 | 32,556,000 | 226,597,000 | 60,776,000 | 526,843,000 |
| Sep. 10 | 178,370,000 | 36,952,000 | 175,750,000 | 60,546,000 | 451,618,000 |
| Oct. 10 | 125,583,000 | 30,870,000 | 112,408,000 | 44,219,000 | 313,080,000 |
| Nov. 10 | 182,712,000 | 33,872,000 | 58,810,000 | 57,510,000 | 332,904,000 |
| Dec. 10 | 117,152,000 | 36,067,000 | 81,229,000 | 49,161,000 | 283,609,000 |
| Jan. 11 | 105,841,000 | 35,136,000 | 68,042,000 | 44,081,000 | 253,100,000 |
| Feb. 11 | 148,721,000 | 48,751,000 | 110,121,000 | 69,489,000 | 377,082,000 |
| Mar. 11 | 156,840,000 | 46,833,000 | 129,597,000 | 74,123,000 | 407,393,000 |
| Apr. 11 | 232,488,000 | 55,530,000 | 200,368,000 | 99,770,000 | 588,156,000 |
| Annual | 2,273,678,000 | 485,521,000 | 1,845,880,000 | 827,224,000 | 5,432,303,000 |
| Avg. Mo. | 189,473,167 | 40,460,083 | 153,823,333 | 68,935,333 | 452,691,917 |
| FY2012 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
| May 11 | 217,906,000 | 46,570,000 | 192,435,000 | 85,892,000 | 542,803,000 |
| Jun. 11 | 278,378,000 | 42,587,000 | 245,470,000 | 100,506,000 | 666,941,000 |
| Jul. 11 | 249,990,000 | 34,572,000 | 219,068,000 | 90,206,000 | 593,836,000 |
| Aug. 11 | 133,413,000 | 27,715,000 | 143,837,000 | 47,665,000 | 352,630,000 |
| Sep. 11 | 115,852,000 | 26,579,000 | 93,403,000 | 38,881,000 | 274,715,000 |
| Oct. 11 | 100,553,000 | 24,348,000 | 58,747,000 | 33,584,000 | 217,232,000 |
| Nov. 11 | 118,818,000 | 28,638,000 | 64,546,000 | 40,361,000 | 252,363,000 |
| Dec. 11 | 117,193,000 | 36,226,000 | 83,933,000 | 45,898,000 | 283,250,000 |
| Jan. 12 | 86,792,000 | 35,704,000 | 69,246,000 | 45,749,000 | 237,491,000 |
| Feb. 12 | 69,223,000 | 37,440,000 | 67,698,000 | 49,018,000 | 223,379,000 |
| Mar. 12 | 94,671,000 | 40,473,000 | 82,291,000 | 54,605,000 | 272,040,000 |
| Apr. 12 | 135,265,000 | 44,518,000 | 108,435,000 | 86,014,000 | 374,232,000 |
| Annual | 1,718,054,000 | 425,370,000 | 1,429,109,000 | 718,379,000 | 4,290,912,000 |
| Avg. Mo. | 143,171,167 | 35,447,500 | 119,092,417 | 59,864,917 | 357,576,000 |

| FY2013 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
|---------------|---------------------|--------------------|---------------|----------------|---------------|
| May 12 | 76,430,000 | 32,200,000 | 76,850,000 | 43,570,000 | 229,050,000 |
| Jun. 12 | 99,135,000 | 28,435,000 | 51,019,000 | 41,951,000 | 220,540,000 |
| Jul. 12 | 93,005,000 | 26,304,000 | 49,927,000 | 39,754,000 | 208,990,000 |
| Aug. 12 | 137,624,000 | 28,068,000 | 60,170,000 | 39,295,000 | 265,157,000 |
| Sep. 12 | 117,013,000 | 26,569,000 | 60,588,000 | 36,083,000 | 240,253,000 |
| Oct. 12 | 98,015,000 | 29,317,000 | 54,304,000 | 38,534,000 | 220,170,000 |
| Nov. 12 | 81,441,000 | 24,775,000 | 46,657,000 | 33,408,000 | 186,281,000 |
| Dec. 12 | 81,676,000 | 28,886,000 | 54,572,000 | 36,364,000 | 201,498,000 |
| Jan. 13 | 99,955,000 | 28,547,000 | 61,933,000 | 37,476,000 | 227,911,000 |
| Feb. 13 | 100,278,000 | 35,693,000 | 68,290,000 | 47,746,000 | 252,007,000 |
| Mar. 13 | 83,624,000 | 41,145,000 | 85,089,000 | 53,975,000 | 263,833,000 |
| Apr. 13 | 210,458,000 | 53,318,000 | 159,700,000 | 82,688,000 | 506,164,000 |
| Annual | 1,278,654,000 | 383,257,000 | 829,099,000 | 530,844,000 | 3,021,854,000 |
| Avg. Mo. | 106,554,500 | 31,938,083 | 69,095,833 | 44,237,000 | 251,821,167 |
| FY2014 | Granite City | Glen Carbon | MESD | MCSSA#1 | Total |
| May 13 | 152,905,000 | 53,825,000 | 196,563,000 | 91,707,000 | 495,000,000 |
| Jun. 13 | 253,421,000 | 53,909,000 | 206,216,000 | 106,480,000 | 620,026,000 |
| Jul. 13 | 167,299,000 | 42,167,000 | 152,404,000 | 78,429,000 | 440,299,000 |
| Aug. 13 | 101,771,000 | 25,960,000 | 62,596,000 | 37,793,000 | 228,120,000 |
| Sep. 13 | 91,221,000 | 24,925,000 | 56,120,000 | 32,254,000 | 204,520,000 |
| Oct. 13 | 93,056,000 | 26,820,000 | 57,945,000 | 33,349,000 | 211,170,000 |
| Nov. 13 | 80,470,000 | 28,151,000 | 57,885,000 | 44,444,000 | 210,950,000 |
| Dec. 13 | 77,301,000 | 29,133,000 | 59,731,000 | 51,514,000 | 217,679,000 |
| Jan. 14 | 107,432,000 | 33,626,000 | 71,135,000 | 46,847,000 | 259,240,000 |
| Feb. 14 | 80,066,000 | 31,188,000 | 59,918,000 | 47,188,000 | 218,360,000 |
| Mar. 14 | 131,216,000 | 33,893,000 | 80,523,000 | 47,821,000 | 293,453,000 |
| Apr. 14 | 164,561,000 | 51,937,000 | 78,801,000 | 70,445,000 | 365,744,000 |
| Annual | 1,500,719,000 | 435,734,000 | 1,139,837,000 | 688,271,000 | 3,764,561,000 |
| Avg. Mo. | 125,059,917 | 36,311,167 | 94,986,417 | 57,355,917 | 313,713,417 |

5.3 GRANITE CITY SEWER SYSTEM USERS

The user classes are identified by the City's billing system as commercial users (Zone 1), residential users (Zone 2), and industrial users (Zone 3) as shown in Table 5-4. The billing information for each user class is shown in Table 5-4.

Table 5-4 Granite City Water/Sewer User Class

| | Zone 1: Commercial | | Zone 2: Residential | | Zone 3: Industrial | | Total |
|---------------|--------------------|--------------|---------------------|----------------|--------------------|----------------|-------------|
| | Users | Billed/Paid | Users | Billed | Users | Billed | Billed |
| FY2007 Billed | 708 | \$597,325.00 | 10,460 | \$1,620,723.51 | 56 | \$1,644,157.90 | \$3,862,206 |
| Payment | | \$552,272.03 | | \$1,581,584.21 | | \$1,540,682.14 | \$3,674,538 |
| FY2008 Billed | 641 | \$519,331.90 | 10,439 | \$1,616,437.29 | 42 | \$1,280,523.95 | \$3,416,293 |
| Payment | | \$518,484.21 | | \$1,603,006.40 | | \$1,415,479.85 | \$3,536,970 |
| FY2009 Billed | 677 | \$427,083.19 | 10,414 | \$1,609,275.58 | 64 | \$1,286,636.57 | \$3,322,995 |
| Payment | | \$449,353.56 | | \$1,585,454.75 | | \$1,262,730.65 | \$3,297,539 |
| FY2010 Billed | 671 | \$436,974.09 | 10,404 | \$1,820,998.58 | 31 | \$1,281,615.43 | \$3,539,588 |
| Payment | | \$418,922.30 | | \$1,677,637.80 | | \$1,425,035.10 | \$3,521,595 |
| FY2011 Billed | 672 | \$443,418.57 | 10,433 | \$1,805,196.16 | 33 | \$1,277,214.19 | \$3,525,829 |
| Payment | | \$444,367.05 | | \$1,632,136.24 | | \$1,158,602.94 | \$3,235,106 |
| FY2012 Billed | 531 | \$626,718.39 | 10,465 | \$1,916,107.71 | 34 | \$1,624,486.04 | \$4,167,312 |
| Payment | | \$446,404.38 | | \$1,873,619.45 | | \$1,588,874.67 | \$3,908,899 |
| FY2013 Billed | 504 | \$495,679.13 | 10,445 | \$1,973,147.11 | 35 | \$1,529,761.81 | \$3,998,588 |
| Payment | | \$490,188.17 | | \$2,006,231.97 | | \$1,622,065.86 | \$4,118,486 |
| FY2014 Billed | 686 | \$491,643.17 | 10,390 | \$2,018,487.79 | 35 | \$1,985,167.37 | \$4,495,298 |
| Payment | | \$482,206.50 | | \$2,008,296.74 | | \$1,702,065.14 | \$4,192,568 |

Granite City has a Significant Industrial User (SIU) Pretreatment Program to include 19 industrial users in 2013. Based on data collected from Jan. 2008 to June 2013 the averaged monthly flow subject for pretreatment administrative charges (Ordinance No.3878) was 5,234,428 cu.ft.

Table 5-5 Percentage of Usage and Loading by User Class

| | Usage | BOD5 | TSS |
|-------------|--------|--------|--------|
| Residential | 38.49% | 41.33% | 85.43% |
| Commercial | 15.47% | | |
| Industrial | 46.04% | 58.67% | 14.57% |

CHAPTER 6
WASTEWATER COLLECTION AND TREATMENT COST ANALYSIS

6.1 GENERAL

In addition to establishing a charge to pay for Operation and Maintenance costs, the City of Granite City is also required to establish a charge to pay for replacement of equipment. Sufficient funds must be available through a reserve fund at all times during the service life of the treatment plant and sewer system to replace any equipment in order to assure its continued efficient performance and maintain the capacity for which it was designed and constructed.

6.2 GRANITE CITY ENTERPRISE FUND REVENUES AND EXPENSES

The Wastewater Treatment Plant and Sewer Systems Enterprise Funds account for all activities related to the billing, administration, and distribution and collection processes of the wastewater treatment plant. Table 6-1 shows the audited revenues and expenditures of the enterprise funds (Fund 70: Regional WWTP and Fund 71: sewer system) from the Annual Financial Reports in last eight (8) fiscal years.

As stated in the annual financial reports, the depreciation expense on capital assets is reported in the government-wide statement of activities and changes in net assets, but they do not require the use of current financial resources. Therefore depreciation expense is not reported as an expenditure in the governmental funds. The total expenses listed in the Table 6-1 exclude the depreciation expenses for using in the sewer rate study

The Granite City Regional Board reviews and approves the cost sharing every year. The Table 6-2 shows the wastewater treatment cost allocation for flows and pollutant loadings.

The revenues and costs of wastewater treatment provided by the Regional WWTP in last eight (8) fiscal years as shown in Table 6-3 are from the Regional Sewer Board Comptroller's Year-end Financial Reports. The revenues and expenses as shown in the Table 6-3 are not audited. The cost items "Construction Funds" are not included in the total expenses.

Table 6-1 Enterprise Fund Revenues and Expenses (Audited Annual Financial Reports)

| | FY2007 | FY2008 | FY2009 | FY2010 | FY2011 | FY2012 | FY2013 | FY2014 |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Revenues (Audited Annual Financial Reports) | | | | | | | | |
| Revenue (WWTP Fund 70 from 3 Regional Participants) | \$1,969,617 | \$2,178,366 | \$2,811,962 | \$2,372,090 | \$2,260,808 | \$2,420,527 | \$2,837,137 | \$2,901,214 |
| Granite City | \$3,878,759 | \$3,778,287 | \$2,805,294 | \$2,305,916 | \$3,549,658 | \$3,423,710 | \$4,174,892 | \$2,615,526 |
| Total Revenue | \$5,848,376 | \$5,956,653 | \$5,617,256 | \$4,678,006 | \$5,810,466 | \$5,844,237 | \$7,012,029 | \$5,516,740 |
| Fund 70: Regional WWTP (Cost Shared by Participants) | | | | | | | | |
| IEPA Loans Debt Service-Principal | \$163,880 | \$168,002 | \$172,229 | \$176,561 | \$181,003 | \$185,556 | \$190,224 | \$254,040 |
| IEPA Loans Debt Service-Interest | 96,242 | 92,119 | 87,893 | 83,560 | 141,280 | 74,565 | 69,897 | 81,114 |
| Bond-Principal | | | | | | 130,000 | 130,000 | 135,000 |
| Bond-Interest | | | | | | 125,130 | 122,530 | 119,205 |
| Total WWTP Debt Service | \$260,122 | \$260,121 | \$260,122 | \$260,121 | \$322,283 | \$515,251 | \$512,651 | \$589,359 |
| Personal Services | 2,158,649 | 2,453,937 | 2,645,967 | 2,589,405 | 2,738,548 | 2,818,870 | 2,753,296 | 2,901,408 |
| Solids Handling | 670,250 | 664,367 | 631,522 | 620,587 | 695,261 | 687,390 | 551,713 | 704,187 |
| BOD treatment | 370,737 | 323,943 | 350,953 | 295,865 | 310,314 | 238,159 | 224,660 | 214,469 |
| Primary treatment | 58,236 | 10,236 | 45,958 | 32,232 | 39,224 | 32,655 | 31,662 | 86,408 |
| General & Administrative | 190,260 | 183,445 | 170,983 | 201,674 | 201,330 | 188,640 | 212,462 | 150,153 |
| Dry weather pumping | 247,793 | 201,197 | 263,337 | 195,231 | 266,959 | 204,112 | 173,727 | 181,166 |
| Wet weather pumping | 120,619 | 119,115 | 187,203 | 124,342 | 179,571 | 143,916 | 102,611 | 120,329 |
| Other | 46,508 | 35,570 | 102,680 | 87,052 | 120,454 | 306,231 | 167,320 | 248,811 |
| Depreciation* | 602,940 | 651,312 | 679,616 | 575,315 | 648,521 | 643,105 | 580,271 | 580,012 |
| Total WWTP O,M&R Cost | \$4,465,992 | \$4,643,122 | \$5,078,219 | \$4,721,703 | \$5,200,182 | \$5,263,078 | \$4,797,722 | \$5,186,943 |
| % of Increase of O,M&R | | 3.97% | 9.37% | -7.02% | 10.13% | 1.21% | -8.84% | 8.11% |
| Fund 71: Granite City Sewer System (Audited Financial Statement) | | | | | | | | |
| Industrial Pretreatment | 138,555 | 84,836 | 88,963 | 86,061 | 90,274 | 95,815 | 98,340 | 119,835 |
| Billing & Collection | 14,141 | 110,436 | 154,664 | 156,084 | 108,377 | 123,574 | 122,915 | 155,686 |
| Sewer Collection | 799,472 | 1,235,861 | 1,015,038 | 611,280 | 623,594 | 482,976 | 797,358 | 246,713 |
| Depreciation | | | | 88,391 | 153,648 | 231,646 | 230,832 | 230,424 |
| Total Sewer System Cost | \$952,168 | \$1,431,133 | \$1,258,665 | \$941,816 | \$975,893 | \$934,011 | \$1,249,445 | \$752,658 |
| Total (depreciation excluded) | \$952,168 | \$1,431,133 | \$1,258,665 | \$853,425 | \$822,245 | \$702,365 | \$1,018,613 | \$522,234 |
| % of Increase | | 50.30% | -12.05% | -32.20% | -3.65% | -14.58% | 45.03% | -48.73% |
| * The depreciation expenses in FY2007, FY2008, and FY2009 were not separated for WWTP and sewer system in the annual financial reports. | | | | | | | | |

Table 6-1A shows the shared wastewater treatment costs over the last five (5) fiscal years. Data is from the Granite City Regional Treatment Board annual reports. See Appendix D.

Table 6-1A Granite City Shared Wastewater Treatment Cost

| | FY2010 | FY2011 | FY2012 | FY2013 | FY2014 | Average |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| (Granite City Regional Wastewater Treatment Board Reports) | | | | | | |
| Total Treatment Cost | \$4,889,140 | \$4,683,927 | \$5,073,964 | \$5,446,308 | \$5,615,664 | |
| Granite City Share % | 50.36% | 51.58% | 47.81% | 52.14% | 52.76% | 50.93% |
| Granite City Shared Cost | \$2,462,171 | \$2,415,970 | \$2,425,867 | \$2,839,705 | \$2,932,824 | \$2,615,307 |
| % of Increase | | -1.88% | 0.41% | 17.06% | 3.28% | 4.72% |

Table 6-2 shows the WWTP cost allocation to flow, BOD, and TSS.

Table 6-2 WWTP Cost Allocation to Various Parameters

| Cost Allocation (% of Total O,M&R Cost) | | |
|---|--------|--------|
| Flow | BOD | TSS |
| 24.80% | 41.60% | 33.60% |

6.3 GRANITE CITY WASTEWATER COLLECTION AND TREATMENT COST

As listed in the sewer billing records of Revenue & Expense Report for 71 Sewer System Fund, the wastewater collection and treatment costs can be categorized as:

1. Administration cost
2. Capital improvement cost
3. Sewer O,M&R cost
4. Sewage treatment cost
5. Debt service cost

Table 6-3 lists the revenues and expenditures to operate the Granite City sewer system. The data was not audited. The records of FY2011, FY2012, FY2013, and FY2014 have not been provided by the City.

A. Administration Cost

1. Non departmental expenditures (contractual services) (5-00-59605)
2. Personnel (4-40-4xxxx)
3. Contractual services (5-40-5xxxx)
4. Commodities (6-40-65xxx)
5. Other expenditures/uses (9-40-9xxxx)

B. Capital Improvement and Replacement Reserve Cost

1. Capital outlay (15-83020 and 15-93100)
2. Capital improvement projects (8-41-8508x)
3. Replacement reserve (8-41-89000)

C. Sewer O,M&R Cost

1. Personnel (4-30-4xxxx and 5-41-4xxxx)
2. Contractual services (4-30-5xxxx and 5-41-5xxxx)
3. Commodities (4-30-65200)
4. Equipment Purchase (8-41-83020)
5. Sewer Breaks (8-41-85000)

6. LS/ Catch B/ & MH Replacement (8-41-85001)
7. Lift Station Operating Expenses (8-41-85020)
8. Contracted Work/Equipment (8-41-85040)
9. Other expenditures/uses (9-41-9xxxx)

D. Sewage Treatment Cost

1. G.C. regional bill (9-40-95410)

E. Debt Service Cost

1. Debt service principal (7-41-71000)
2. Debt service interest (7-41-72000)

Table 6-3 Annual Revenue and Expenditures (71 – Sewer System Fund Actual, Unaudited)

| | Acct. | Item of Cost | FY2006 | FY2007 | FY2008 | FY2009 | FY2010 | FY2011 | FY2012 | FY2013 | FY2014 | Average | |
|---|---|---------------------------------|--------------------------------|--------------------|--------------------|----------------------|--------------------|----------------------|--------------------|----------------------|--------------------|--------------------|--------------------|
| REVENUE | 3-37000 | Pretreatment Flow Fees | \$74,336.36 | 45,227.01 | 46,814.91 | 284,404.28 | 1,335,989.81 | | | | | | |
| | 3-37810 | Service Charge - STP | 1,458,595.32 | 1,794,894.26 | 1,524,378.52 | 1,435,353.11 | 3,374,199.78 | 1,449,250.84 | 1,305,236.75 | 1,903,883.86 | 1,876,544.18 | | |
| | 3-37825 | Service Charge Commercial | 653,650.26 | 613,086.67 | 669,919.20 | 606,187.35 | 683,081.10 | 888,962.21 | 1,013,546.66 | 607,903.39 | 553,270.61 | | |
| | 3-37830 | Service Charge Industrial | 1,196,398.35 | 1,244,055.99 | 1,336,755.00 | 952,674.79 | 56,701.52 | 1,135,496.42 | 1,599,054.02 | 1,609,173.88 | 1,723,064.79 | | |
| | 3-37840 | Service Charge - PA#3 | 461.74 | 9,041.39 | 300 | 104.33 | 1.52 | | | | | | |
| | 3-37865 | Tap-on Fees -STP | 8,710.00 | 8,850.00 | 7,515.00 | 190 | 7,080.00 | 8,685.00 | 10,670.00 | 14,200.00 | 14,303.00 | | |
| | | Other (Banks, Treasuries, etc.) | 269,423.68 | 269,423.68 | 299,810.60 | 120,129.08 | 361,153.81 | 48,540.12 | 56,548.15 | 39,659.65 | 224,676.21 | | |
| | Total Revenues | | | \$3,661,576 | \$3,984,579 | \$3,885,493 | \$3,399,043 | \$5,818,208 | \$3,530,935 | \$3,985,056 | \$4,174,821 | \$4,391,859 | |
| EXPENDITURES | A. Administration (Billing and Collection) | | \$134,410 | \$121,967 | \$109,737 | \$108,544 | \$86,062 | \$108,377 | \$123,574 | \$119,660 | \$142,241 | \$117,175 | |
| | 1 | 5-00-59605 | No Departmental | \$31,740.12 | | | | | | | | | |
| | 2 | 4-40-4xxxx | Personnel | 55,924.32 | 50,673.92 | 49,932.29 | 55,095.49 | 79,464.61 | 45108.62 | 57427.10 | 46573.49 | 47285.60 | |
| | 3 | 4-40-5xxxx | Contractual Services | 35,910.33 | 60,501.34 | 52,802.29 | 46,204.80 | 4,157.35 | 59835.78 | 64313.84 | 67850.24 | 76167.42 | |
| | 4 | 4-40-6xxxx | Commodities | 8,209.24 | 6,637.74 | 6,217.90 | 2,887.55 | 2,439.58 | 3203.77 | 1833.09 | 5236.66 | 18787.53 | |
| | 5 | 4-40-9xxxx | Other Expenditures/Uses | 2,626.24 | 4,153.96 | 784.25 | 4,356.48 | 0 | 228.63 | | | | |
| | B. Capital Improvement | | | \$41,030 | \$29,511 | \$191,012 | \$1,079,790 | \$0 | \$570,482 | \$966,194 | \$3,402,009 | \$1,740,845 | \$1,002,609 |
| | 1 | 8-15-83020 | Capital Outlay | 36,834.25 | 28,442.68 | | | | | | | | |
| | 2 | 8-15-93100 | Other Expenditures/Uses | | 948.49 | | | | 16,988.00 | 50,706.93 | | | |
| | 3 | 8-41-85080 | Nameoki Area Sewer & Manhole | | | | 333,343.61 | | 304,549.64 | 56,362.23 | 51,835.00 | | |
| | 4 | 8-41-85085 | North Granite Sewer Replacment | | | | 251,231.90 | | 153,342.02 | 250.00 | 6.00 | | |
| | 5 | 8-41-85086 | 84 & 108 Lines River's Edge | | | | 3,949.10 | | 95,602.64 | 858,874.45 | 3,350,168.03 | 1,740,845.45 | |
| | 6 | 8-41-85087 | NSRR Yard Replacement | | | | 21,596.25 | | | | | | |
| | 7 | 8-41-89000 | Replacement Reserve | 4,195.50 | 120 | 191,012.36 | 469,669.10 | | | | | | |
| | C. Sewer O,M&R Cost | | | \$1,252,496 | \$901,866 | \$1,201,891 | \$1,901,846 | \$799,062 | \$2,302,941 | \$598,075 | \$441,011 | \$456,597 | \$1,095,087 |
| | 1 | 4-30-4xxxx | Personnel | 79,390.51 | 122,173.07 | 80,618.10 | 83,032.35 | 50,785.78 | 82,972.21 | 88,961.48 | 93,868.78 | 105,664.15 | |
| | 2 | 4-30-5xxxx | Contractual Services | 2,600.60 | 4,463.91 | 1,512.59 | 1,365.67 | 53,688.96 | 5,463.51 | 6,066.18 | 3,689.57 | 4,515.62 | |
| | 3 | 4-30-65200 | Commodities | 1,640.39 | 1,934.63 | 1,384.66 | 805.71 | 3,524.43 | 1,838.52 | 787.33 | 774.25 | 11,052.16 | |
| | 4 | 5-41-4xxxx | Personnel | 192,043.08 | | | | | | | | | |
| | 5 | 5-41-5xxxx | Contractual Services | 56,807.54 | 14,346.53 | 47,251.97 | 16,118.04 | 7,647.98 | | | | | |
| | 6 | 8-41-83020 | Equipment Purchase | 0 | 81.63 | 23,084.08 | 254,417.14 | | 20,705.05 | 5,379.04 | 21,870.92 | 54,142.42 | |
| | 7 | 8-41-85000 | Sewer Breaks | 686,875.04 | 211,170.10 | 60,754.90 | 476,630.11 | 90,196.29 | 1,783,681.69 | 251,663.49 | 294.28 | 13,100.00 | |
| | 8 | 8-41-85001 | LS/Catch B/ & MH Replacement | 24,090.55 | 59,623.90 | 206,743.40 | 347,796.69 | 2,631.35 | 18,086.50 | 7,031.72 | 11,124.55 | 1,422.48 | |
| | 9 | 8-41-85020 | Lift Station Operating Ex | 192,486.95 | 363,304.97 | 362,923.20 | 493,422.83 | 329,348.48 | 291,648.46 | 184,761.98 | 239,668.83 | 187,762.62 | |
| | 10 | 8-41-85040 | Contracted Work/Equipment | 0 | 84,723.07 | 326,733.65 | 141,384.72 | 92,020.70 | 54,854.69 | 36,923.58 | 31,820.04 | 22,040.00 | |
| | 11 | 9-41-9xxxx | Other Expenditures/Uses | 16,561.19 | 40,044.43 | 90,884.29 | 86,872.79 | 169,217.59 | 43,690.09 | 16,500.45 | 37,899.72 | 56,897.75 | |
| | D. Sewage Treatment Cost (9-40-95410 GC. Bill) | | | \$1,942,469 | \$2,068,321 | \$2,538,810 | \$2,277,322 | \$2,429,493 | \$2,363,618 | \$2,648,727 | \$2,374,649 | \$2,848,083 | \$2,387,944 |
| E. Debt Service | | | \$255,295 | \$255,295 | \$255,295 | \$255,295 | \$263,904 | \$278,182 | \$289,517 | \$53,293 | \$108,987 | | |
| | 7-41-71000 | Debt Service, Principal | 198,743.14 | 206,255.76 | 214,052.35 | 222,143.67 | | | 98947.38 | | | | |
| | 7-41-72000 | Debt Service, Interest | 56,551.96 | 49,039.34 | 41,242.75 | 33,151.43 | | | | | | | |
| Total Expenditures (A+B+C+D+E) | | | \$3,625,700 | \$3,376,960 | \$4,296,745 | \$5,622,797 | \$3,578,520 | \$5,623,600 | \$4,626,087 | \$6,390,622 | \$5,296,753 | | |
| Revenues Over/(Under) Expenditures | | | \$35,876 | \$607,619 | (\$411,252) | (\$2,223,754) | \$2,239,688 | (\$2,092,665) | (\$641,031) | (\$2,215,802) | (\$904,894) | | |

Note: The revenues from Glen Carbon, MESD, and MCSSA#1 are not included in the total revenues.

Table 6-4 Cost Allocations

| | FY2006 | FY2007 | FY2008 | FY2009 | FY2010 | FY2011 | FY2012 | FY2013 | FY2014 | Average |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|---------|
| A Administration | 134,410 | 121,967 | 109,737 | 108,544 | 86,062 | 108,377 | 123,574 | 119,660 | 142,241 | |
| Allocation | 4% | 4% | 3% | 2% | 2% | 2% | 3% | 2% | 3% | 2.60% |
| B Capital Improvement | 41,030 | 29,511 | 191,012 | 1,079,790 | 0 | 570,482 | 966,194 | 3,402,009 | 1,740,845 | |
| Allocation | 1% | 1% | 4% | 19% | 0% | 10% | 21% | 53% | 33% | 15.87% |
| C Sewer O,M&R Cost | 1,252,496 | 901,866 | 1,201,891 | 1,901,846 | 799,062 | 2,302,941 | 598,075 | 441,011 | 456,597 | |
| Allocation | 35% | 27% | 28% | 34% | 22% | 41% | 13% | 7% | 9% | 23.86% |
| D Sewer Treatment Cost | 1,942,469 | 2,068,321 | 2,538,810 | 2,277,322 | 2,429,493 | 2,363,618 | 2,648,727 | 2,374,649 | 2,848,083 | |
| Allocation | 54% | 61% | 59% | 41% | 68% | 42% | 57% | 37% | 54% | 52.50% |
| E Debt Service | 255,295 | 255,295 | 255,295 | 255,295 | 263,904 | 278,182 | 289,517 | 53,293 | 108,987 | |
| Allocation | 7% | 8% | 6% | 5% | 7% | 5% | 6% | 1% | 2% | 5.17% |
| Total | 3,625,700 | 3,376,960 | 4,296,745 | 5,622,797 | 3,578,520 | 5,623,600 | 4,626,087 | 6,390,622 | 5,296,753 | |
| | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | |

6.4 Projection of Wastewater Collection and Treatment Cost

A. Administration Cost (Billing and Collection)

The administration cost, or billing and collection cost, as listed in Table 6-3 were between low \$86,062 in FY2010 and high \$142,241 in FY2014, and averaged \$117,175 per year over the last nine fiscal years (Table 6-3). In last three (3) fiscal years the average administration cost was \$128,482 per year. The average cost per year of the last three (3) fiscal years is used to project the future cost. Say \$130,000 in FY2016 and increase 3% per year in coming years.

B. Capital improvement and replacement reserve cost

This cost depends on the sewer system improvement projects which may be required in a specific year. The capital improvement and replacement reserve cost was about \$1,002,609 per year (Table 6-3 Item B). The City estimates to spend about \$600,000 per year in FY2016 for capital improvement projects, and the cost will be increased about 3% per year in coming years.

C. Sewer Operation, Maintenance, and Replacement (O,M&R) Cost

The average O,M&R cost was \$1,095,087 over the last nine (9) fiscal years, and fluctuated from low \$441,001 in FY2013 to high \$1,252,496 in FY2006 (see Table 6-3). The repair and replacement costs for sewer breaks were a big portion of the O,M&R costs over years. In recent years the City used other funds to pay for the costs of sewer breaks. The City estimates the costs for sewer repair and replacement projects will about \$1,000,000 in FY2016, and will be increased about 3% per year in coming years.

D. Sewage treatment cost

This is the Granite City shared treatment cost. Granite City shared the wastewater treatment plant cost, including debt service cost and O,M&R cost. In FY2014 shared treatment debt service cost was \$311,041 and shared O,M&R cost was \$2,430,617 as shown in Table 6-1. The Granite Shared treatment cost was increase about 4.72% per year (see Table 6-1A). It is estimated that the Granite shared wastewater treatment cost will be increased about 5% per year after FY2014.

E. Debt Service Cost

1. IL EPA (1)

The City was awarded a \$3,938,240 loan in August 2003 through the IEPA WPC Revolving Fund to finance the upgrade of the Regional WWTP facilities. Payments are due semiannually on January 27 and July 27 through January 2025, including interest at 2.50%. As of April 30, 2014, the balance outstanding on the loan was \$2,457,925. The debt service payment is \$199,915 for FY2015.

2. IL EPA (2) – L171639

The City was awarded a third loan through the State of Illinois Environment Protection Agency Bureau of Water in October 2008. This loan financed Nameoki area manhole and sewer projects. The City is required to repay \$1,387,645.76 with an interest rate of 2.50% over 20-year period. Payments are due semiannually on April 20 and October 20 through 2030. The annual debt service amount is \$90,345.88. See payment schedule in Appendix.

3. IL EPA (3) – L174113

The City was awarded a fourth loan through the State of Illinois Environment Protection Agency Water Pollution Control Loan Program in September 2011. This loan financed interceptor sewer rehabilitation projects. The principal forgiveness amount is \$2,000,000. The City is required to repay \$5,531,524.89 with an interest rate of 1.25% over 20-year period. Payments are due semiannually on April 26 and October 26 through 2034. The annual debt service amount is \$313,446.22. See payment schedule in Appendix.

4. IL EPA (4)

The City was awarded a fifth loan of \$2,000,000 through the State of Illinois Environment Protection Agency Water Pollution Control Loan Program in September 2011. Upon completion of the project \$500,000 of the loan was forgiven and the additional funds are to be repaid with an interest rate of 1.25%. This loan financed improvement to the wastewater treatment plant. Payments are due semiannually on March 1 and September 1 through 2032. As of April 30, 2014, the balance outstanding on the loan was \$1,445,254. The debt service payment is \$35,080 for FY2015.

5. The City issued Local Governmental Program Revenue Bond, Series 2010 in November 2010. The bonds, totaling \$3,485,000 are payable from the revenues derived from the payments made pursuant to the Intergovernmental Agreements. The bonds bear interest of between 2.0% and 4.2% and mature in varying amounts from 2011 to 2029 to finance improvements to the WWTP. As of April 30, 2014, the balance outstanding on the loan was \$3,090,000. The debt service payment is \$135,000 for FY2015.

Table 6-4E-1 Summary of WWTP Debt Service

| Loan for Regional WWTP (Cost shared) | | Debt Service | | | |
|--------------------------------------|---|--------------|-----------|-----------|-----------|
| | | FY2016 | FY2017 | FY2018 | FY2019 |
| 1 | 2003 IEPA Loan for WWTP | \$199,915 | \$199,915 | \$199,915 | \$199,915 |
| 4 | 2011 IEPA WPC Loan for WWTP | \$35,080 | \$35,080 | \$35,080 | \$35,080 |
| 5 | Local Government Revenue Bond, Series 2010 for WWTP | \$135,000 | \$135,000 | \$135,000 | \$135,000 |
| Total annual debt service | | \$369,995 | \$369,995 | \$369,995 | \$369,995 |

The WWTP OM&R cost is shared participated communities and sanitary districts based on flow contributions. The cost share for Granite City is 52.76% as recommended by the Regional Board in June 2014. The average annual shared treatment plant O,M&R cost was increased about 2.18% over the last eight (8) fiscal years as shown in Table 6-1.

The total treatment costs shared by the Granite City are projected to be:

Table 6-4E-2 Projection of Granite City Shared Treatment Cost

| | | FY2016 | FY2017 | FY2018 | FY2019 |
|---|------------|-------------|-------------|-------------|-------------|
| Debt Service | 6.4E.1,4,5 | \$369,995 | \$369,995 | \$369,995 | \$369,995 |
| O,M&R | T.6-1 | \$5,718,605 | \$6,004,535 | \$6,304,762 | \$6,620,000 |
| Total | | \$6,088,600 | \$6,374,530 | \$6,674,757 | \$6,989,995 |
| G.C. Share | 50.93% | \$3,100,924 | \$3,246,548 | \$3,399,454 | \$3,560,004 |
| Note: The treatment plat O,M&R cost was \$5,186,943 in FY2014, and the cost is estimated to increase 5% per year in coming years. | | | | | |

Table 6-4E-3 Sewer System Debt Service

| Loan for Sewer System | | Debt Service | | | |
|---------------------------|--------------------------------------|--------------|-----------|-----------|-----------|
| | | FY2016 | FY2017 | FY2018 | FY2019 |
| 2 | IL EPA (2) - L171639 (Nameoki Sewer) | \$90,346 | \$90,346 | \$90,346 | \$90,346 |
| 3 | IL EPA (3) - L174113 (Interceptors) | \$313,446 | \$313,446 | \$313,446 | \$313,446 |
| Total annual debt service | | \$403,792 | \$403,792 | \$403,792 | \$403,792 |

6.5 SUMMARY OF COSTS

The User Charge System must consist of charges to each user of the system that will provide funds for Operation and Maintenance, Replacement and reserve fund, and debt service cost. These charges must be in proportion to the actual costs required to process each user's waste. A summary for each cost category is shown in Table 6-5.

Table 6-5 Summary of Projected Wastewater Collection and Treatment Cost

| | Item | Data Location | FY2016 | | FY2017 | | FY2018 | | FY2019 | |
|----------------------|-------------------------------------|---------------|-------------|------|-------------|------|-------------|------|-------------|------|
| | | | | | | | | | | |
| 1 | Administration Cost | 6.4 A | \$130,000 | 2% | \$133,900 | 2% | \$137,917 | 2% | \$142,055 | 2% |
| 2 | Capital Improvement and Replacement | 6.4 B | \$600,000 | 11% | \$618,000 | 11% | \$636,540 | 11% | \$655,636 | 11% |
| 3 | Sewer O,M&R Cost | 6.4 C | \$1,000,000 | 19% | \$1,030,000 | 19% | \$1,060,900 | 19% | \$1,092,727 | 19% |
| 4 | Shared WWTP Cost | T6.4 E-2 | \$3,100,924 | 59% | \$3,246,548 | 60% | \$3,399,454 | 60% | \$3,560,004 | 61% |
| 5 | Debt Service | T6.4 E-3 | \$403,792 | 8% | \$403,792 | 7% | \$403,792 | 7% | \$403,792 | 7% |
| Projected Total Cost | | | \$5,234,716 | 100% | \$5,432,240 | 100% | \$5,638,603 | 100% | \$5,854,214 | 100% |

CHAPTER 7
PROPOSED REVISION OF USER CHARGE SYSTEM

7.1 GENERAL

The above study indicates that the current user charge system is inadequate to assure the recovery of cost for wastewater collection and treatment expenses. The user charge rate needs to be adjusted to a reasonable standard to fully recover the total cost. In this Chapter, a new user charge system with new user charge rates will be studied as a proposal to revise the current Sewer User Charge Ordinance.

The sewer user charge is based on water meter records which are provided by Illinois-American Water Company. The user accounts are listed in Table 5-4. Table 7-1 shows the user numbers and usages in FY2013.

Table 7-1 User Accounts and Water Usage in FY2014

| | | User Number | Annual Usage (gal.) | Avg. gal./User/Mo. | Percent of Total Usage |
|--------|-------------|-------------|---------------------|--------------------|------------------------|
| Zone 1 | Commercial | 686 | 232,000,000 | 28,183 | 15.47% |
| Zone 2 | Residential | 10,390 | 578,000,000 | 4,636 | 38.49% |
| Zone 3 | Industrial | 35 | 462,000,000 | 1,100,000 | 46.04% |
| | Total | 11,111 | 1,272,000,000 | | 100.00% |

7.2 CALCULATION OF USER CHARGE

In accordance with Federal Guidelines, a User Charge System must result in the distribution of treatment works Operation and Maintenance costs to each user in approximate proportion to his contribution to the total wastewater loading of the treatment works (Federal Register, Vol.47, No.92, 1982; and 35 Illinois Administrative Code, Ch.II, Sec.365.103, Sep. 1992).

The users served by the sewer collection and treatment system can be categorized as three classes of residential, commercial and industrial. The flow contribution to the collection and treatment system of each class can be identified. The BOD₅ (5-day Biochemical Oxygen Demand) and TSS (Total Suspended Solids) contributions by industrial users are recorded. There is no data to separate the BOD and TSS contributions by residential and commercial users, however these contributions can be considered as typical wastewater quality.

The calculation of User Charge has to consider the flow contributions as well as loading contributions by different user classes.

The following wastewater characteristics may be suitable as the basis for determining the residential and commercial user charges:

| | |
|---------------------------------------|--|
| pH | = 7.5 |
| Temperature | = 10 ⁰ C in coldest month to 26 ⁰ C in warmest month |
| BOD ₅ at 20 ⁰ C | = 200 mg/L |
| TSS | = 250 mg/L |
| Total Nitrogen | = 40 mg/L as N |
| Ammonia Nitrogen | = 25 mg/L as N |
| Total Phosphorus | = 10 mg/L as P |

Among these parameters the values of BOD₅ and TSS are most important when the wastewater quality is evaluated by IEPA.

It is projected that the BOD₅, TSS, and other pollutant concentrations discharged by all users will be approximately equal and, therefore, the treatment cost will be primarily FLOW dependent. A surcharge approach will be applied to users who discharge wastewater with BOD₅ or TSS concentration with values in excess of the normal value as shown above.

Based on wastewater volume contribution by users, the User Charge is calculated by following formula:

$$C_u = \frac{C_t}{V_t}(V_u)$$

where C_u = User's Charge per unit of time;
 C_t = Total costs per unit of time (O,M,&R plus reserve and replacement costs), Dollars/year;
 V_t = Total volume contribution from all users per unit of time, gallons/year;
 V_u = Metered water consumption, in 1000 gallons increments, for a user per unit of time.

A surcharge will be levied to all users whose wastewaters exceed the normal domestic concentration of BOD₅ (200 mg/L) and TSS (250 mg/L). The surcharge will be based on water usage as recorded by water meters and/or sewage meters for all wastewaters which exceed the 200 mg/L and 250 mg/L concentration for BOD₅ and TSS respectively.

Computation of wastewater service charge is computed by the following formula:

$$CW = CC + CM + (V_u - X) CU + CS$$

where CW = Amount of wastewater service charge (\$) per billing period.
 CD = Debt Service Charge.
 CC = Capital Improvement Charge.
 CM = Minimum Charge for Operation, Maintenance and Replacement.
 V_u = Wastewater Volume for the billing period.
 X = Allowable consumption in gallons for the minimum charge.
 CU = User Surcharge Rate for excess flow.
 CS = Amount of Surcharge for excess BOD and/or TSS.

The sewer system revenue from sewer user charge from are curetly based on the sewer rate set in 2011 (Ordinance No.8250). Because the O,M&R cost has increased, the sewer charge rate shall be increased proportionally for revenue to increase to cover the operational cost.

The sewer rate structure is that the residential users pay a fixed rate per month, and the rate for the usage over 4,500 gallons will be increased for commercial and industrial users as shown in Table 7-3. .

The proposed rate is as in Table 7-3.

Table 7-3 Proposed Sewer User Charge Rate

| | 8/1/2015-7/31/2016 | | | | 8/1/2016-7/31/2017 | | | |
|--|--------------------|----------------|----------------|---------------|--------------------|----------------|----------------|---------------|
| | | Minimum | Over 4500 gal. | | | Minimum | Over 4500 gal. | |
| | Allocation | Cost/Mo. | Cost per | Cost per | Allocation | Cost/Mo. | Cost per | Cost per |
| | T.6-5 | 4500 gal. | 1000 gal. | 100 cu.ft. | T.6-5 | 4500 gal. | 1000 gal. | 100 cu.ft. |
| 1. Administration | 2% | \$0.45 | \$0.10 | \$0.07 | 2% | \$0.46 | \$0.10 | \$0.08 |
| 2. Capital Improvement and Replacement Reserve | 11% | \$2.06 | \$0.46 | \$0.34 | 11% | \$2.12 | \$0.47 | \$0.35 |
| 3. Sewer O,M&R | 19% | \$3.44 | \$0.76 | \$0.57 | 19% | \$3.54 | \$0.79 | \$0.59 |
| 4. Sew age Treatment | 59% | \$10.66 | \$2.37 | \$1.77 | 60% | \$11.16 | \$2.48 | \$1.85 |
| 5. Debt Service | 8% | \$1.39 | \$0.31 | \$0.23 | 7% | \$1.39 | \$0.31 | \$0.23 |
| Total/month | 100% | \$18.00 | \$4.00 | \$2.99 | 100% | \$18.67 | \$4.15 | \$3.10 |
| % of Increase | | 26.76% | | | | 3.72% | | |

| | 8/1/2017-7/31/2018 | | | | 8/1/2018-7/31/2019 | | | |
|--|--------------------|----------------|----------------|---------------|--------------------|----------------|----------------|---------------|
| | | Minimum | Over 4500 gal. | | | Minimum | Over 4500 gal. | |
| | Allocation | Cost/Mo. | Cost per | Cost per | Allocation | Cost/Mo. | Cost per | Cost per |
| | T.6-5 | 4500 gal. | 1000 gal. | 100 cu.ft. | T.6-5 | 4500 gal. | 1000 gal. | 100 cu.ft. |
| 1. Administration | 2% | \$0.47 | \$0.11 | \$0.08 | 2% | \$0.49 | \$0.11 | \$0.08 |
| 2. Capital Improvement and Replacement Reserve | 11% | \$2.19 | \$0.49 | \$0.36 | 11% | \$2.25 | \$0.50 | \$0.37 |
| 3. Sewer O,M&R | 19% | \$3.64 | \$0.81 | \$0.61 | 19% | \$3.75 | \$0.83 | \$0.62 |
| 4. Sew age Treatment | 60% | \$11.68 | \$2.60 | \$1.94 | 61% | \$12.22 | \$2.72 | \$2.03 |
| 5. Debt Service | 7% | \$1.39 | \$0.31 | \$0.23 | 7% | \$1.39 | \$0.31 | \$0.23 |
| Total/month | 100% | \$19.37 | \$4.30 | \$3.22 | 100% | \$20.10 | \$4.47 | \$3.34 |
| % of Increase | | 3.75% | | | | 3.77% | | |

7.3 SURCHARGE RATES

Wastewater discharges having characteristic strengths greater than that of normal domestic wastewater should be charged a surcharge to cover the additional cost of treatment.

7.3.1 Flow Surcharge

The surcharge rate for excess flow shall be the same as flat rate per 1,000 gallons, or per 100 cu.ft.

7.3.2 BOD and TSS Surcharge

These BOD and TSS surcharge rates are applied to the industrial/commercial users, communities, and sewer districts for wastewater strength of BOD in excess of concentration 200 mg/L and TSS in excess of concentration 250 mg/L.

The Granite City Regional Wastewater Treatment Board presents the unit cost of BOD and TSS treatment in its annual report. The unit costs in last eight (8) fiscal years based on the treatment cost of actual BOD and TSS loading were reported as in Table 7-4.

Table 7-4 Regional WWTP BOD and TSS Treatment Cost

| | Per lb of BOD | % of Increase | Per lb of TSS | % of Increase |
|----------------|-----------------|---------------|-----------------|---------------|
| FY2006 | \$0.1883 | | \$0.2364 | |
| FY2007 | \$0.1799 | -4.46% | \$0.2190 | -7.36% |
| FY2008 | \$0.2003 | 11.34% | \$0.2116 | -3.38% |
| FY2009 | \$0.1586 | -20.82% | \$0.2348 | 10.96% |
| FY2010 | \$0.1792 | 12.99% | \$0.2035 | -13.33% |
| FY2011 | \$0.2033 | 13.45% | \$0.1969 | -3.24% |
| FY2012 | \$0.2532 | 24.55% | \$0.2639 | 34.03% |
| FY2013 | \$0.2491 | -1.62% | \$0.3073 | 16.45% |
| FY2014 | \$0.2139 | -14.13% | \$0.2424 | -21.12% |
| <i>Average</i> | <i>\$0.2029</i> | <i>2.66%</i> | <i>\$0.2351</i> | <i>1.63%</i> |

Over the last nine (9) fiscal years the treatment costs of BOD and TSS at the WWTP fluctuated with low \$0.1586 and high \$0.2532 per lb. of BOD, and low \$0.1969 and high \$0.3073 per lb. of TSS. The average costs to treat BOD was \$0.2139/lb., and to treat TSS was \$0.2351/lb.

Currently the BOD surcharge rate is \$0.18/lb which is about 89% of the average cost of \$0.2039/lb for BOD treatment. The TSS surcharge rate is \$0.19/lb which is about 81% of the average cost of \$0.2351/lb for TSS treatment.

The surcharge for excess BOD and TSS of industrial/commercial users should be increased to cover the treatment costs.

It is recommended that the BOD surcharge rate be increased as follows:

Table 7-5 Proposed BOD and TSS Surcharge Rate

| | Current per lb. | Proposed Rate Per lb | | | |
|---------------------------|-----------------|----------------------|--------------------|--------------------|--------------------|
| | 8/1/2012-on | 8/1/2015-7/31/2016 | 8/1/2016-7/31/2017 | 8/1/2015-7/31/2016 | 8/1/2016-7/31/2017 |
| BOD in excess of 200 mg/L | \$0.18 | \$0.23 | \$0.24 | \$0.25 | \$0.26 |
| % of Increase | | 27.78% | 4.35% | 4.17% | 4.00% |
| TSS in excess of 250 mg/L | \$0.19 | \$0.22 | \$0.24 | \$0.26 | \$0.28 |
| % of Increase | | 15.79% | 9.09% | 8.33% | 7.69% |

7.4 PRETREATMENT CHARGE RATE

The City has a pretreatment program for Significant Industrial Users (SIU). The Ordinance No. 8401 (December 2013) amended the Ordinance 3878 (March 1982) to set \$0.10/100 cu.ft. as the Administrative Charge for the pretreatment program.

7.5 PROJECTION OF REVENUE TO MEET COST REQUIREMENT

Table 7-6 Projection of Revenues Based on New Rate, FY2016

| | | Users | Water Usage Per Year | Rate | Revenue/year |
|---|-----------|--------|-------------------------|----------------|--------------------|
| Existing Fixed Rate/mo., Residential Users | Ord. 8250 | | | \$14.20 | |
| Existing Rate/1000 gal., over 4500 gal./mo. | Ord. 8250 | | | \$3.15 | |
| | | | | | |
| Proposed Fixed Charge/mo. | Table 7-3 | | | \$18.00 | |
| Proposed Rate/1000 gal., over 4500 gal./mo. | Table 7-3 | | | \$4.00 | |
| | | | | | |
| Projected Revenue From Residential Users | Table 7-1 | 10,390 | 578,000,000 | | |
| Min. Charge | | | | | \$2,244,240 |
| | | | | | |
| Projected Revenue From Commercial Users | Table 7-1 | 686 | 232,000,000 | | |
| Min. Charge | | | | | \$148,176 |
| Charge for Over 4500 gal./mo. | | | | | \$915,652 |
| | | | | | |
| Projected Revenue From Industrial Users | Table 7-1 | 35 | 462,000,000 | | |
| Min. Charge | | | | | \$7,560 |
| Charge for Over 4500 gal./mo. | | | | | \$1,847,370 |
| | | | | | |
| Estimate of SIU Pretreatment Program Income | Table 6-1 | | | | \$100,335 |
| | | | | | |
| Projected Revenue Based on New Rate, Total | | | | | \$5,263,333 |
| | | | | | |
| Projected O,M&R Cost | Table 6-5 | | | | \$5,234,716 |
| | | | | | |
| Projected Revenue Over/(Under) Cost | | | | | \$28,617 |

Table 7-7 Projection of Revenues Based on New Rate, FY2017

| | | Users | Water Usage Per Year | Rate | Revenue/year |
|---|-----------|--------|-------------------------|----------------|--------------------|
| Existing Fixed Rate/mo., Residential Users | Ord. 8250 | | | \$14.20 | |
| Existing Rate/1000 gal., over 4500 gal./mo. | Ord. 8250 | | | \$3.15 | |
| | | | | | |
| Proposed Fixed Charge/mo. | Table 7-3 | | | \$18.67 | |
| Proposed Rate/1000 gal., over 4500 gal./mo. | Table 7-3 | | | \$4.15 | |
| | | | | | |
| Projected Revenue From Residential Users | Table 7-1 | 10,390 | 578,000,000 | | |
| Min. Charge | | | | | \$2,327,776 |
| | | | | | |
| Projected Revenue From Commercial Users | Table 7-1 | 686 | 232,000,000 | | |
| Min. Charge | | | | | \$153,691 |
| Charge for Over 4500 gal./mo. | | | | | \$949,735 |
| | | | | | |
| Projected Revenue From Industrial Users | Table 7-1 | 35 | 462,000,000 | | |
| Min. Charge | | | | | \$7,841 |
| Charge for Over 4500 gal./mo. | | | | | \$1,916,133 |
| | | | | | |
| Estimate of SIU Pretreatment Program Income | Table 6-1 | | | | \$100,335 |
| | | | | | |
| Projected Revenue Based on New Rate, Total | | | | | \$5,455,511 |
| | | | | | |
| Projected O,M&R Cost | Table 6-5 | | | | \$5,432,240 |
| | | | | | |
| Projected Revenue Over/(Under) Cost | | | | | \$23,271 |

Table 7-8 Projection of Revenues Based on New Rate, FY2018

| | | Users | Water Usage Per Year | Rate | Revenue/year |
|---|-----------|--------|-------------------------|----------------|--------------------|
| Existing Fixed Rate/mo., Residential Users | Ord. 8250 | | | \$14.20 | |
| Existing Rate/1000 gal., over 4500 gal./mo. | Ord. 8250 | | | \$3.15 | |
| | | | | | |
| Proposed Fixed Charge/mo. | Table 7-3 | | | \$19.37 | |
| Proposed Rate/1000 gal., over 4500 gal./mo. | Table 7-3 | | | \$4.30 | |
| | | | | | |
| Projected Revenue From Residential Users | Table 7-1 | 10,390 | 578,000,000 | | |
| Min. Charge | | | | | \$2,415,052 |
| | | | | | |
| Projected Revenue From Commercial Users | Table 7-1 | 686 | 232,000,000 | | |
| Min. Charge | | | | | \$159,454 |
| Charge for Over 4500 gal./mo. | | | | | \$985,343 |
| | | | | | |
| Projected Revenue From Industrial Users | Table 7-1 | 35 | 462,000,000 | | |
| Min. Charge | | | | | \$8,135 |
| Charge for Over 4500 gal./mo. | | | | | \$1,987,975 |
| | | | | | |
| Estimate of SIU Pretreatment Program Income | Table 6-1 | | | | \$100,335 |
| | | | | | |
| Projected Revenue Based on New Rate, Total | | | | | \$5,656,295 |
| | | | | | |
| Projected O,M&R Cost | Table 6-5 | | | | \$5,638,603 |
| | | | | | |
| Projected Revenue Over/(Under) Cost | | | | | \$17,692 |

Table 7-9 Projection of Revenues Based on New Rate, FY2019

| | | Users | Water Usage Per Year | Rate | Revenue/year |
|---|-----------|--------|-------------------------|----------------|--------------------|
| Existing Fixed Rate/mo., Residential Users | Ord. 8250 | | | \$14.20 | |
| Existing Rate/1000 gal., over 4500 gal./mo. | Ord. 8250 | | | \$3.15 | |
| Proposed Fixed Charge/mo. | Table 7-3 | | | \$19.37 | |
| Proposed Rate/1000 gal., over 4500 gal./mo. | Table 7-3 | | | \$4.30 | |
| Projected Revenue From Residential Users | Table 7-1 | 10,390 | 578,000,000 | | |
| Min. Charge | | | | | \$2,415,052 |
| Projected Revenue From Commercial Users | Table 7-1 | 686 | 232,000,000 | | |
| Min. Charge | | | | | \$159,454 |
| Charge for Over 4500 gal./mo. | | | | | \$985,343 |
| Projected Revenue From Industrial Users | Table 7-1 | 35 | 462,000,000 | | |
| Min. Charge | | | | | \$8,135 |
| Charge for Over 4500 gal./mo. | | | | | \$1,987,975 |
| Estimate of SIU Pretreatment Program Income | Table 6-1 | | | | \$100,335 |
| Projected Revenue Based on New Rate, Total | | | | | \$5,656,295 |
| Projected O,M&R Cost | Table 6-5 | | | | \$5,638,603 |
| Projected Revenue Over/(Under) Cost | | | | | \$17,692 |

7.6 USER COST

A. TYPICAL RESIDENTIAL USERS

The residential user cost based on proposed sewer rate is calculated as follows:

Table 7-10 Projection of Commercial User Cost

| Existing Fixed Rate | \$14.20 | Proposed Rate and Cost per Month | | | |
|---|---------|----------------------------------|----------------------|----------------------|----------------------|
| Rate per 1,000 gal. | \$3.15 | 8/1/2015- 7/31/16 | 8/1/2016- 7/31/17 | 8/1/2017- 7/31/18 | 8/1/2018- 7/31/19 |
| Minimum Charge for first 4,500 gal. | | \$18.00 | \$18.67 | \$19.37 | \$20.10 |
| Rate per 1,000 gal. for over 4,500 gal. | | \$4.00 | \$4.15 | \$4.30 | \$4.47 |
| Total Cost for Usage 5,000 gal. | | \$20.00 | \$20.74 | \$21.52 | \$22.33 |
| % of Increase from Previous Year | | 26.76% | 3.72% | 3.75% | 3.77% |

B. EXAMPLES OF INDUSTRIAL USERS AND HOSPITAL

The estimate of industrial user cost based on proposed sewer rate for AMSTED, KRAFT, Prairie Farms, and Hospital is calculated as follows:

Table 7-11 Projection of Large User Cost

| | Typical Averaged Monthly Discharge | | | Charge per month | | | Charge per month (New Rate) | | | | | | | | | | | |
|----------------------------|------------------------------------|--------------------|--------|--------------------|-----------|--------------------|-----------------------------|--------------------|-----------------|--------------------|-----------|--------------------|---------------|-----------|-----------------|---------------|-----------|-----------------|
| | | | | (Existing. Rate) | | | 8/2015-7/2016 | | | 8/2016-7/2017 | | | 8/2017-7/2018 | | | 8/2018-7/2019 | | |
| | | | | Flow /100 cf. | \$2.36 | Flow /100 cf. | \$2.99 | Flow /100 cf. | \$3.10 | Flow /100 cf. | \$3.22 | Flow /100 cf. | \$3.34 | | | | | |
| | | | | Surcharge BOD /lb. | \$0.18 | Surcharge BOD /lb. | \$0.23 | Surcharge BOD /lb. | \$0.24 | Surcharge BOD /lb. | \$0.25 | Surcharge BOD /lb. | \$0.26 | | | | | |
| Surcharge TSS /lb. | \$0.19 | Surcharge TSS /lb. | \$0.22 | Surcharge TSS /lb. | \$0.24 | Surcharge TSS /lb. | \$0.26 | Surcharge TSS /lb. | \$0.28 | | | | | | | | | |
| | Flow /mo | BOD | TSS | Flow | Surcharge | Total per mo. | Flow | Surcharge | Total per mo. | Flow | Surcharge | Total per mo. | Flow | Surcharge | Total per mo. | Flow | Surcharge | Total per mo. |
| | (cu.ft.) | (mg/L) | (mg/L) | Charge | | | Charge | | | Charge | | | Charge | | | Charge | | |
| AMSTED | 406,964 | 0 | 0 | \$9,604 | \$0 | \$9,604 | \$12,178 | \$0 | \$12,178 | \$12,631 | \$0 | \$12,631 | \$13,105 | \$0 | \$13,105 | \$13,599 | \$0 | \$13,599 |
| (Avg. Jan. 2008-Jun. 2013) | | | | | | | | | 26.80% | | | 3.72% | | | 3.75% | | | 3.77% |
| KRAFT | 836,270 | 4,991 | 41 | \$19,736 | \$1,500 | \$21,236 | \$25,025 | \$1,916 | \$26,941 | \$25,956 | \$2,000 | \$27,956 | \$26,930 | \$2,083 | \$29,012 | \$27,944 | \$2,166 | \$30,111 |
| (Avg. Jan. 2008-Jun. 2013) | | | | | | | | | 26.87% | | | 3.77% | | | 3.78% | | | 3.79% |
| Prairie Frams | | | | | | | | | | | | | | | | | | |
| Benton St. | 256,708 | 3,094 | 783 | \$6,058 | \$567 | \$6,625 | \$7,682 | \$689 | \$8,371 | \$7,968 | \$735 | \$8,703 | \$8,267 | \$781 | \$9,047 | \$8,578 | \$827 | \$9,405 |
| (Avg. Jan. - Dec. 2009) | | | | | | | | | 26.36% | | | 3.96% | | | 3.96% | | | 3.95% |
| Adams St. | 243,192 | 6,346 | 747 | \$5,739 | \$1,145 | \$6,885 | \$7,277 | \$1,393 | \$8,670 | \$7,548 | \$1,486 | \$9,034 | \$7,831 | \$1,579 | \$9,410 | \$8,126 | \$1,671 | \$9,798 |
| (Avg. Jan. - Dec. 2009) | | | | | | | | | 25.94% | | | 4.19% | | | 4.16% | | | 4.12% |
| Hospital | 66,100 | 0 | 0 | \$1,560 | \$0 | \$1,560 | \$1,978 | \$0 | \$1,978 | \$2,052 | \$0 | \$2,052 | \$2,129 | \$0 | \$2,129 | \$2,209 | \$0 | \$2,209 |
| (Avg. Jan. - Dec. 2009) | | | | | | | | | 26.80% | | | 3.72% | | | 3.75% | | | 3.77% |

7.7 COMPARISON OF RATES WITH ADJACENT COMMUNITIES

Table 7-12 is a comparison of sewer user charge rate and water user charge rate of adjacent communities, and a calculation of the monthly household sewer and water fees. The sewer charge rate for Granite City is the proposed rate in Table 7-3.

Table 7-12 Comparison of User Charge Rate of Adjacent Communities

| | | Connection Fee | Min.Charge Per Month | | Sewer Rate (1,000 gal.) | Cost for 4,500 gal/Mo. |
|---------------------------|--|----------------|---|----------------|-------------------------|------------------------|
| Granite City | Proposed | | | | | |
| 8/1/2015-7/31/2016 | | | Residential fixed rate/mo. | \$18.00 | \$4.00 | \$18.00 |
| MESD (2015) | In Bndry. | \$750.00 | \$8.00 for first 200 cu.ft. (1,496 gal.) | | | |
| | Out Bndry. | \$1,500.00 | Over 200 cu.ft.: \$4.68 per 1000 gal. | | | \$22.06 |
| MCSSA#1 (2015) | In Bndry. | \$750.00 | \$32.40 PER USER/MO. | | \$32.40 | \$32.40 |
| | Out Bndry. | \$1,500.00 | | | | |
| Alton (2009) | | | Residential Service Charge /mo. Flat Rate | \$15.70 | | \$15.70 |
| Bethalto (2013) | | \$2,500.00 | min. 1,000 gal. /mo. | \$6.50 | \$4.30 | \$21.55 |
| Wood River (11/09) | | | Billing/Admin. Charge | \$3.28 | \$1.76 | \$11.20 |
| East Alton (11/09) | | | min. 0-2,000 gal. | \$12.36 | \$1.05 | \$14.99 |
| Roxana | No separate charge for sewer - paid through property taxes. | | | | | |
| American Bottom | | | Per 1,000 gal. | \$4.40 | | \$19.80 |
| Maryville (2013) | In-Town | \$500.00 | | | | |
| | Outside | \$500.00 | min. 2,000 gal. /mo. | \$9.60 | \$4.80 | \$21.60 |
| Glen Carbon (2015) | 1-10 PE | \$2,725.00 | In-Town Service Charge | \$5.50 | \$7.55 | \$39.48 |
| | | | Outside Service Charge | \$10.00 | \$8.70 | \$49.15 |
| Edwardsville (2013) | In-Town | \$4,480.00 | Usage Charge/System Process /bi-mo. | \$7.75 | \$4.55 | \$24.35 |
| | Outside | \$5,880.00 | Usage Charge/System Process /bi-mo. | \$7.75 | \$5.85 | \$30.20 |
| Collinsville (2013) | Residential | \$2,500.00 | | | | |
| | Commercial | \$3,000.00 | | | \$6.07 | \$27.32 |
| Troy (2013) | In-Town | \$4,100.00 | min. 2,000 gal. | \$9.34 | \$4.24 | \$19.94 |
| | Outside | \$5,600.00 | min. 2,000 gal. | \$16.39 | \$7.43 | \$34.97 |
| Highland (2014) | In-Town | | Service Charge | \$9.10 | \$5.70 | \$34.75 |
| | Outside | | Service Charge | \$13.30 | \$7.21 | \$45.75 |
| Hamel | | \$2,750.00 | min. 2,000 gal. | \$13.50 | \$5.00 | \$26.00 |
| Livingston | | \$325.00 | min. 1,000 gal. | \$22.00 | \$3.00 | \$32.50 |
| Ahambra | | \$1,300.00 | min. 1,000 gal. | \$12.50 | \$3.50 | \$24.75 |
| St. Jacob (2014) | Residential | \$3,500.00 | Min. 2,000 gal. | \$8.60 | \$3.55 | \$17.48 |
| | Multifamily | \$1500/tap | | | | |
| Grafton | | \$1,500.00 | min. 1,000 gal. | \$14.50 | \$6.90 | \$38.65 |
| Note: | MESD interceptor sewer and treatment cost only, not includes collector sewers. | | | | | |