

## **3 Rivers Wet Weather Demonstration Program Sewer Rate Survey Update – 2006**

### **Background Information**

#### **Focus of Survey of ALCOSAN Municipalities**

The initial 2004 survey focused on the total rate charged to a user of the sewage system. That rate included a monthly or quarterly service charge, if any, and a base dollar charge for each unit of water used (usually 1000 gallons). The total charge included both the amount owed to ALCOSAN and the amount which was realized by the local agency.

This 2006 update survey focuses on **only the local share** of the total billing rate by excluding the ALCOSAN charges from both the service charge (if any) and the base dollar charge. As such, the income from these rates represents the funds available to the local agency for sewer operation and maintenance.

#### **ALCOSAN Billings**

##### **2004 Original Sewer Rate Survey**

ALCOSAN quarterly billings included a per bill charge of \$5.25 and a base rate of \$2.50/1000 gallons. Total quarterly billing for 15,000 gallons = \$42.75 or an average of \$2.85/1000 gallons.

##### **2006 Sewer Rate Survey Update**

ALCOSAN quarterly rates were increased to include a per bill charge of \$5.78 and a base rate of \$2.75/1000 gallons. Total quarterly billing for 15,000 gallons = \$47.03 or an average of \$3.14/1000 gallons.

The 2006 Sewer Rate Survey Update contains:

- 1) An explanation of the method used to calculate the local share of the total billing rate.
- 2) Tables showing the local billing rates for municipalities in each of the 3 basin groupings (North, East and South). City of Pittsburgh figures are included in each of the basin groupings. These tables include the monthly or quarterly local service charge, if any, the local base rate, any tiered rate structures reported, the total local charge for 15,000 gallons per quarter and the average local rate for 15,000 gallons.
- 3) Tables showing the high, low, average and median values for the average rate charged for 15,000 gallons for each of the 3 basin groupings and for the overall ALCOSAN region.

## Local Share of Total Billing Rate

Types of billing methods have not changed since the 2004 survey was completed. They are sent out on either monthly or quarterly cycles, they may or may not include a service charge for that cycle, and they do include a base rate applied to the amount of gallonage used during that cycle.

### Quarterly Municipal Billings

- 1) Only a Base Rate (BR) is applied and includes the local share as well as the ALCOSAN share:
  - i. Local Share for 15,000 gallons used =  $[(BR - \$2.75) \times 15] - \$5.78$
  - ii. Example – Base Rate of \$7.00/1000 gallons
  - iii. Local charge for 15000 gallons =  $[(\$7.00 - \$2.75) \times 15] - \$5.78 = \$57.97$
  - iv. Average local rate/1000 gallons =  $\$57.95 \div 15 = \$3.86$
  
- 2) Quarterly Service Fee (SF) (no usage amount included) and a base rate (BR) are applied and includes the local share as well as the ALCOSAN share:
  - i. Local Share for 15,000 gallons used =  $[(SF - \$5.78) + (BR - \$2.75) \times 15]$
  - ii. Example – Service Fee of \$10.00 per quarter and Base Rate of \$7.00/1000 gallons
  - iii. Local charge for 15000 gallons =  $(\$10.00 - \$5.78) + [(BR - \$2.75) \times 15] = \$67.97$
  - iv. Average local rate/1000 gallons = \$4.53
  
- 3) Quarterly Service Fee (SF) including a maximum amount of Usage (U) and a base rate (BR) are applied and includes the local share as well as the ALCOSAN share:
  - i. Local Share for 15,000 gallons used =  $[(SF - \$5.78) - (\$2.75 \times U)] + [(15 - U) \times (BR - \$2.75)]$
  - ii. Example – Service Fee of \$30.00 per quarter including 5000 gallons and Base Rate of \$7.00/1000 gallons
  - iii. Local charge for 15000 gallons =
    1.  $[(\$30.00 - \$5.78) - (\$2.75 \times 5)] + [(15 - 5) \times (BR - \$2.75)] = \$52.97$
  - iv. Average local rate/1000 gallons = \$3.53
  
- 4) Quarterly charge = specified percentage of ALCOSAN charges
  - i. Example – specified percentage = 50%
  - ii. Local charge for 15000 gallons =  $(0.50 \times \$5.78) + [(0.50 \times 2.75) \times 15] = \$23.52$
  - iii. Average local rate/1000 gallons = \$1.57

### Monthly Billings

Using  $\frac{1}{3}$  of the ALCOSAN per bill charge of \$5.78, calculate a monthly billing for 5000 gallons using the same formulas as for quarterly billings and multiply that amount by 3.

Note that Type 4 above applies only to quarterly billings

To determine the full amount of a billing, on the Rate Comparison sheets:

- 1) Add \$5.78 to a Quarterly Service Charge or \$1.93 to a Monthly Service Charge
- 2) Add \$2.75 to all rates for gallonage

- 3) Add \$47.03 to the billing for 15000 gallons
- 4) Add \$3.14 to the average rate per 1000 gallons

**Rate Comparisons**

As can be seen from the various methods used to bill for sewage services, the agencies responsible for operation and maintenance of sewage systems in the ALCOSAN service area use various combinations of billing cycles, service fees and usage rates. However, regardless of the method used, the true measure of an agency’s revenue potential is the average rate charged for 1000 gallons of water.

Table 1 shows the high, low, average and median value of the Average Rate per 1000 gallons for each basin and for the ALCOSAN region as a whole.

**Table 1**  
Average Rate per 1000 gallons  
Exclusive of Municipalities not Charging for Sewage Service

Basin	High	Low	Average	Median
East	\$5.77	\$0.37	\$2.33	\$4.04
North	\$11.60	\$0.47	\$2.89	\$6.03
South	\$10.29	\$1.50	\$3.21	\$5.90
Region	\$9.22	\$0.78	\$2.81	\$5.32

It should be noted that average and median values may be somewhat skewed because of the few relatively high rates in each of the basins. A second means to compare average rates is to determine the spread of rates from the lowest to the highest. Table 2 presents that comparison.

**Table 2**  
Spread of Average Sewer Rates  
\$ per 1000 gallons

Basin	0.00 to 0.49	0.50 to 0.99	1.00 to 1.49	1.50 to 1.99	2.00 to 2.49	2.50 to 2.99	3.00 to 3.49	3.50 to 3.99	Over 4.00
East	2	2	4	3	6	2	1	0	6
North	3	4	3	3	6	2	1	0	6
South	1	0	1	5	7	4	1	7	9
Total	6	6	8	11	19	8	3	7	21

## **Conclusions Drawn from Sewer Rate Survey**

The simplest method for billing for sewage service is the one that uses the fewest number of elements to calculate the amount owed. Thus, the three simplest methods used in the ALCOSAN region are:

- 1) use of a single base rate applied to each 1000 gallons used, or
- 2) addition to the ALCOSAN charges of a single base rate applied to each 1000 gallons used
- 3) use of a multiplier of the ALCOSAN charges

One disadvantage of using only a single base rate is that a raise in the ALCOSAN rate decreases the local share of the total billing unless a change in the rate structure is formally adopted. With regard to the addition of a base rate to the ALCOSAN charges, the local share of the total billing would remain the same regardless of any change in ALCOSAN rates. With the use of a multiplier, however, any change in ALCOSAN rates would automatically result in a similar percentage change in the local portion of the total billing.

Should regionalization efforts continue to expand, a single billing system for a particular region would be necessary in order to eliminate or at least minimize administrative problems related to multiple billing systems. The use of a multiplier would appear to be the least objectionable method to be employed. As shown in Table 2 (Spread of Sewer Rates per 1000 Gallons, most of those rates fall between \$1.50 and \$4.00. The equivalent percentage for rates in that range would fall between 50% and 110%.