ORDINANCE 1847

RECOMMENDATIONS FOR CHANGES IN THE SANITARY SEWER RATE STRUCTURE FOR THE CITY OF GRAND JUNCTION, COLORADO

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INTRODUCTION

Section 204 (b)(1) of the Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, provides that after March 1, 1973, Federal grant applicants shall be awarded grants only after the Regional Administrator has determined that the applicant has adopted or will adopt a system of charges to assure that each recipient of waste treatment services will pay its proportionate share of the costs of operation and maintenance, including replacement. The intent of the Act with respect to user charges is to distribute the cost of operation and maintenance of publicly owned treatment works to the pollutant source and to promote self-sufficiency of treatment works with respect to operation and maintenance costs.

It is suggested by the Environmental Protection Agency (EPA) that the rate structure be reviewed annually and ajusted if necessary so that each user continues to pay its proportionate share of the costs of operation and maintenance.

It is anticipated that Mesa County will issue approximately $6 million in revenue bonds in the very near future to finance the 25% local share of the cost of building a new sewage treatment plant and several interceptor lines. It is important that prior to issuing those bonds and during the pay-off period of those bonds that sufficient revenue be generated to meet the costs of operation and maintenance as well as debt retirement.

It was determined by the Grand Junction City Council in response to a vote of the people in 1975 that revenue would be contributed to the then joint Water-Sewer Fund from an additional 1% sales tax which was established in 1976.

This report shows the costs of operation and maintenance, as well as replacement costs and debt retirement costs for the years 1976 through 1979. The sources of revenue for 1979 are shown. The present rate structure is reviewed and a new rate structure is recommended.

Rate (8) was established to cover the costs of providing a service to those who pump out septic tanks. This service is no longer provided. Septic tanks pumpings are now disposed at the county landfill.

In addition to the obvious arguments that could be made against the philosophies involved in establishing the above rates, the Environmental Protection Agency has determined that these types of rate structures are not necessarily fair and equitable to the users of the system. Where federal grant funds (which come from all users and potential users) are used to construct a sewage treatment works, it is required that a fair and equitable user charge system be established and maintained.

In 1976 the City altered the philosophies used to establish the above listed rates with the decision to use sales tax revenue to subsidize the Water-Sewer Fund. A portion of the operating costs is now provided by citizens, based on the amount of their taxable purchases rather than the amount of sewage produced. Also, a portion of the operating costs is being provided by non-residents who are not served by the City sewer system.

Each year the City budget identifies certain expenditures which are classified as capital expenditures. These types of expenditures occur annaually and include items like specialized tools, electrical repairs, major equipment replacement, purchase of operation and maintenance equipment, major repairs to the collection system, and minor extensions to the collection system. In this report these expenditures are referred to as replacement costs. Capital improvements referred to in this report are major projects such as a new sewage treatment plant or sewer interceptor lines and sewage pumping stations. The replacement costs over the last four years are as follows: 1976-$284,631, 1977-$204,235, 1978-$189,001, and 1979-$132,900. During these four years the cost of operating and maintaining the sewage treatment plant has risen 44% and the cost of maintaining the collection system has risen 74%. If the philosophy of the cost of operation and maintenance being borne by the user is to be maintained, then some adjustment to the rates must be made.

There are two main ways the costs of capital improvements can be covered:

1. Tap fees (including the plant investment fee) - If the major cost of capital improvements is attributable to facilities needed to serve additional taps and if enough additional taps can be made so that the tap fee can be a reasonable amount, then the capital improvement costs should be recovered from tap fees. In the case of Grand Junction, a large capital expenditure is needed

Monthly Sewer Rates

The cost of operation and maintenance of the sewage treatment works for 1979 is $583,604. Debt retirement costs for 1979 are $106,802. It is estimated that 1,900,000,000 gallons of sewage will be treated in 1979. While the cost of operation and maintenance will rise in 1980, so will the amount of sewage treated. This should result in the unit cost of treatment remaining about the same from 1979 to 1980. Because of the anticipated issuing of about $6 million in revenue bonds, however, it is expected that there will be a large increase in debt retirement costs. For these reasons, in computing the recommended rate structure, the 1979 operating and maintenance costs per 1,000 gallons of sewage treated will be used while the new debt retirement cost per 1,000 gallons of sewage treated resulting from the issuing of $6 million in revenue bonds will be used.

The unit costs are computed as follows:

Operation and maintenance (including replacement costs) = $583,604

$$\frac{\$583,604}{1,900,000} = \$0.31 \text{ per } 1,000 \text{ gal. per year}$$

$$\text{debt retirement} = \frac{\$550,355}{1,900,000} = \$0.29 \text{ per } 1,000 \text{ gal per year}$$

A single family residence produces about 7,000 gallons of sewage per month based on averaging the winter months water consumption of 547 single family accounts in Grand Junction.

7,000 gal. per month x 12 months = 84,000 gal. per year

O & M = 84 x .31 = $26.04 per year ÷ 12 = $2.17 per month

Debt = 84 x .29 = $24.36 per year ÷ 12 = $2.03 per month

Total cost of operation and maintenance and debt retirement for a single family residence per month. $4.20

Thus it is recommended that a base charge of $4.20 per month be established for all single family resident users of the sewage treatment works.

In 1978 a rate structure was developed for plant investment fees using EPA guidelines that provide for a charge to each user based on the amount of pollutants produced by that user. A fee was determined for a single family residence which is a base fee and is referred to as an Equivalent Residential Unit (EQU).

A rate structure was developed basing all other rates on the base rate. A factor

and multiples of that factor are used to determine individual fees. Under that structure the number of base units or EQU are calculated as follows:

A. Single family dwelling = 1.00 EQU

B. Multiple family dwellings = 0.72 x no. of single family units

C. Hotels and motels:
   1. No restaurant or kitchen = 0.36 x no. of rooms
   2. With kitchenettes = 0.43 x no. of rooms
   3. With restaurants = use (1) then add rates from (D) below

D. Restaurants:
   1. 24 hr. operation = 0.21 x no. of seats
   2. 12 hr. or less operation = 0.14 x no. of seats
   3. Bar, no food = 0.04 x no. of seats

E. Schools:
   1. No food or showers = 0.04 x no. of student capacity
   2. For cafeterias = add to (1) 0.02 x no. of student capacity
   3. For showers = add to (1) 0.02 x no. of student capacity
   4. Boarding schools = 0.27 x no. of student capacity

F. Service stations
   1. Without wash rack - 1.00 EQU
   2. With wash rack = 2.3 x no. wash racks

G. Shopping centers and Stores = 0.35 x no. of thousands of square feet of store space

H. Travel Trailer Parks and Courts = 0.45 x no. of trailer parking spaces

I. Churches, assembly halls, theatres, and arenas=0.01 x no. of seating capacity

J. Drive In Theatre = 0.02 x no. of car spaces

K. Factory, warehouses, SHOPS and offices (not including industrial waste) = 0.05 x no. of employees

L. Hospitals = 0.89 x no. bed spaces

M. Institutions - Nursing Home - 0.36 x no. residences

N. Laundry - coin operated = 1.34 x no. washing machines

O. Mobile Home Parks = 0.67 x no. lots or spaces

P. Car Wash = 2.3 x no. of bays

Q. Fast Food Take Out (walk-up or drive-up)
   1. Open 12 or more hrs. = 0.10 x no. of employees
   2. Open less than 12 hrs. = 0.06 x no. of employees

To determine the monthly sewer service charge the number of EQU is multiplied by the base unit rate of $4.20. The monthly service charge can be computed for the non-residential user which does not apply to the above by computing the hydraulic flow expected (or from records) from the establishment. The EQU can be computed by dividing the expected flows by 280 gallons per day, or by dividing the expected organic load in pounds of BOD per day by 0.47 pounds of BOD. The higher EQU obtained by the two methods shall be used in computing the monthly service charge by multiplying the number of EQU obtained by $4.20.

For industrial wastes or for any other wastes that have a strength greater than 200 milligrams per liter of Biochemical Oxygen Demand (BOD) or greater than 250 milligrams per liter of Suspended Solids (SS), a monthly surcharge shall be computed and added to the monthly service charge as computed in the rate schedule listed above. The formula for computing the surcharge is as follows:

$$C_s = \{Bc(B) + Sc(S) + Pc(P)\} V_u$$

where: C_s = a surcharge for wastewaters of excessive strength

B_c = O & M cost for treatment of a unit of biochemical oxygen demand (BOD)

B = Concentration of BOD from a user above 200 milligrams per liter

S_c = O & M cost for treatment of a unit of suspended solids (SS)

S = Concentration of Ss from a user above 250 milligrams per liter

P_c = O & M cost for treatment of a unit of any pollutant

P = Concentration of any pollutant from a user above a base level

V_u = Volume contribution from a user per unit of time

Listed below are some Grand Junction customers and their present sewer charges compared to the proposed rate structure.

Customer	Monthly Service Charge Under Present Rates	Monthly Service Charge Under Proposed Rates
Single Family Residence (outside City)	$ 4.10	$ 4.20
Single Family Residence	$ 2.05	$ 4.20
Duplex	$ 4.10	$ 6.05
Triplex	$ 6.15	$ 9.07
Fourplex	$ 7.15	$12.10
Tiffany Apts. 15 units	$18.15 1.21 per unit	$45.36
Hazelett Apts 30 units	$33.15 1.10 per unit	$90.72
Wellington Gardens 50 units	$53.15 1.06 per unit	$151.20
Loft Apts. 46 units	$49.15 1.07 per unit	$278.21
Garden Village Apts. 91 units	$ 94.15 1.03 per unit	$550.37
Osteopathic Hospital 78 beds	$49.44 0.63 per bed	$291.56
V.A. Hospital 157 beds	$198.02 1.26 per bed	$586.87

Customer	Monthly Service Charge Under Present Rates	Monthly Service Charge Under Proposed Rates
Parkview Motel 21 rooms	$ 15.36 0.73 per room	$ 31.75
The Timbers 29 rooms	$ 20.04 0.69 per room	$ 73.25
La Court 47 Rooms	$ 16.44 0.35 per room	$ 71.06
Bar X 78 rooms	$ 36.12 0.46 per room	$147.34
Guest Houe 22 rooms	$ 6.60 0.30 per room	$ 33.26
St. Regis 44 rooms	$ 25.32 0.58 per room	$ 66.53

As shown, there is no uniform percentage increase for all customers. Since the rate structure itself is recommended for change some customers will have as little as a 2% increase and others will increase by several times the current average bill. The inequities of the present system must be pointed out. It is these inequities that need to be corrected and must be corrected under conditions of the EPA grant. An apartment with 92 units can pay as little as $1.07 per month for each family unit compared to $2.05 the single family unit pays for sewage treatment. Under the proposed rate structure each apartment living unit will be charged the same ($3.02). The more units in an apartment complex the more the total monthly service charge will be.