

ORDINANCE NO. 90-2

CITY OF ORR, MINNESOTA

AN ORDINANCE ESTABLISHING A SEWER SERVICE CHARGE
SYSTEM FOR THE CITY OF ORR, MINNESOTA

An Ordinance providing for Sewer Service Charges to recover costs associated with:

- 1) Operation, maintenance, and replacement to ensure effective functioning of the City's Wastewater Treatment System.
- 2) Local capital costs incurred in the construction of the City's Wastewater Treatment System.

ARTICLE I
Definitions

Unless the context specifically indicates otherwise, the meaning of the terms used in this ordinance shall be as hereafter designated:

- Sec. 1 "Administration" - Those fixed costs attributable to administration of the wastewater treatment works (i.e., billing and associated bookkeeping and accounting costs).
- Sec. 2 "Biochemical Oxygen Demand or BOD₅" - The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20° C, expressed in milligrams per liter.
- Sec. 3 "City" - The area within the corporate boundaries of the City of Orr, as presently established or as amended by Ordinance or other legal actions at a future time. When used herein the term City may also refer to the City Council or its authorized representative.
- Sec. 4 "Commercial User" - Any place of business which discharges sanitary waste as distinct from industrial wastewater.
- Sec. 5 "Commercial Wastewaters" - Domestic wastewater emanating from a place of business as distinct from industrial wastewater.
- Sec. 6 "Debt Service Charge" - A charge levied on users of wastewater treatment facilities for the cost of repaying money bonded to construct said facilities.

- Sec. 7 "Normal Domestic Strength Wastewater" - that is primarily produced by residential users, with BOD₅ concentrations not greater than 200 mg/l and suspended solids concentrations not greater than 230 mg/l.
- Sec. 8 "Equivalent Residential Unit (ERU)" - A unit of wastewater volume of 210 gallons per day at a strength not greater than 200 mg/l of BOD₅ and 230 mg/l of Total Suspended Solids.
- Sec. 9 "Extra Strength Waste" - Wastewater having a BOD and/or TSS greater than domestic waste as defined in Article I, Section 7 above and not otherwise classified as an incompatible waste.
- Sec. 10 "Governmental User" - Users which are units, agencies or instrumentalities of federal, state, or local government discharging Normal Domestic Strength wastewater.
- Sec. 11 "Incompatible Waste" - Waste that either singly or by interaction with other wastes interferes with any waste treatment process, constitutes a hazard to humans or animals, creates a public nuisance or creates any hazard in the receiving waters of the wastewater treatment works.
- Sec. 12 Industrial Users or "Industries" are:

- a. Entities that discharge into a publicly owned wastewater treatment works, liquid wastes resulting from the processes employed in industrial or manufacturing processes, or from the development of any natural resources. These are identified in the Standard Industrial Classification Manual, 1972, Office of Management and Budget, as amended and supplemented under one of the following divisions:

Division A.	Agriculture, Forestry and Fishing
Division B.	Mining
Division D.	Manufacturing
Division E.	Transportation, Communications, Electric, Gas, and Sanitary Sewers
Division I.	Services

For the purpose of this definition, domestic waste shall be considered to have the following characteristics:

BOD ₅	less than	<u>186</u> mg/l
Suspended Solids	less than	<u>170</u> mg/l

- b. Any nongovernmental user of a publicly owned treatment works which discharges wastewater to the treatment works which contains toxic pollutants or poisonous solids, liquids, or gases in sufficient quantity either singly or by interaction with other wastes, to contaminate the sludge of any municipal systems, or to injure or to interfere with any sewage treatment process, or which constitutes a hazard to humans or animals, creates a public nuisance, or creates any hazard in or has an adverse effect on the waters receiving any discharge from the treatment works.

- Sec. 13 "Industrial Wastewater" - The liquid processing wastes from an industrial manufacturing process, trade, or business including but not limited to all Standard Industrial Classification Manual Divisions A, B, D, E and I manufacturers as distinct from domestic wastewater.
- Sec. 14 "Institutional User" - Users other than commercial, governmental, industrial or residential users, discharging primarily Normal Domestic Strength wastewater (e.g. Non-profit organizations).
- Sec. 15 "Operation and Maintenance" - Activities required to provide for the dependable and economical functioning of the treatment works, throughout the design or useful life, whichever is longer of the treatment works, and at the level of performance for which the treatment works were constructed. Operation and Maintenance includes replacement.
- Sec. 16 "Operation and Maintenance Costs" - Expenditures for operation and maintenance, including replacement.
- Sec. 17 "Public Wastewater Collection System" - A system of sanitary sewers owned, maintained, operated and controlled by the City.
- Sec. 18 "Replacement" - Obtaining and installing of equipment, accessories, or appurtenances which are necessary during the design life or useful life, whichever is longer, of the treatment works to maintain the capacity and performance for which such works were designed and constructed.
- Sec. 19 "Replacement Costs" - Expenditures for replacement.
- Sec. 20 "Residential User" - A user of the treatment facilities whose premises or building is used primarily as a residence for one or more persons, including dwelling units such as detached and semi-detached housing, apartments, and mobile homes; and which discharges primarily normal domestic strength sanitary wastes.
- Sec. 21 "Sanitary Sewer" - A sewer intended to carry only liquid and water carried wastes from residences, commercial buildings, industrial plants, and institutions, together with minor quantities of ground, storm, and surface waters which are not admitted intentionally.
- Sec. 22 "Sewer Service Charge" - The aggregate of all charges, including charges for operation, maintenance, replacement, debt service, and other sewer related charges that are billed periodically to users of the City's wastewater treatment facilities.
- Sec. 23 "Sewer Service Fund" - A fund into which income from Sewer Service Charges is deposited along with other income, including taxes intended to retire debt incurred through capital expenditure for wastewater treatment. Expenditure of the Sewer Service Fund will be for operation, maintenance and replacement costs; and to retire debt incurred through capital expenditure for wastewater treatment.

- Sec. 24 "Shall" is mandatory; "May" is permissive.
- Sec. 25 "Slug" - Any discharge of water or wastewater which in concentration of any given constituent or in quantity of flow exceeds for any period of duration longer than 15 minutes more than five times the average 24 hour concentration or flows during normal operation and shall adversely affect the collection system and/or performance of the wastewater treatment works.
- Sec. 26 "Standard Industrial Classification Manual" - Office of Management and Budget, 1972.
- Sec. 27 "Suspended Solids (SS) or Total Suspended Solids (TSS)" - The total suspended matter that either floats on the surface or is in suspension in water, wastewater or other liquids, and is removable by laboratory filtering as prescribed in "Standard Methods for the Examination of Water and Wastewater", latest edition, and referred to as non-filterable residue.
- Sec. 28 "Toxic Pollutant" - The concentration of any pollutant or combination of pollutants as defined in standards issued pursuant to Section 307(a) of the Act, which upon exposure to or assimilation into any organism will cause adverse effects.
- Sec. 29 "User Charge" - A charge levied on users of a treatment works for the user's proportionate share of the cost of operation and maintenance, including replacement.
- Sec. 30 "Users" - Those residential, commercial, governmental, institutional and industrial establishments which are connected to the public sewer collection system.
- Sec. 31 "Wastewater" - The spent water of a community, also referred to as sewage. From the standpoint of source it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions together with any ground water, surface water and storm water that may be present.
- Sec. 32 "Wastewater Treatment Works or Treatment Works" - An arrangement of any devices, facilities, structures, equipment, or processes owned or used by the City for the purpose of the transmission, storage, treatment, recycling, and reclamation of municipal sewage, domestic sewage or industrial wastewater, or structures necessary to recycle or reuse water including interceptor sewers, outfall sewers, collection sewers, pumping, power, and other equipment and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled water supply such as standby treatment units and clear well facilities; and any works including land which is an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.

ARTICLE II

ESTABLISHMENT OF A SEWER SERVICE CHARGE SYSTEM

- Sec. 1 The City of Orr hereby establishes a Sewer Service Charge System whereby all revenue collected from users of the wastewater treatment facilities will be used to affect all expenditures incurred for annual operation, maintenance, and replacement and for debt service on capital expenditure incurred in constructing the wastewater treatment works.
- Sec. 2 Each user shall pay its proportionate share of operation maintenance and replacement costs of the treatment works, based on the users proportionate contribution to the total wastewater loading from all users.
- Sec. 3 Each user shall pay debt service charges to retire local capital costs as determined by the City Council.
- Sec. 4 Sewer Service rates and charges to users of the wastewater treatment facility shall be determined and fixed in a "Sewer Service Charge System" developed according to the provisions of this Ordinance. The Sewer Service Charge System developed with the assistance of John Baker Engineering, Inc. shall be adopted by resolution upon enactment of this Ordinance, shall be published in the local newspaper, and shall be effective upon publication. Subsequent changes in Sewer Service rates and charges shall be adopted by Council resolution and shall be published in the local newspaper.
- Sec. 5 Revenues collected for Sewer Service shall be deposited in a separate fund known as "The Sewer Service Fund". Income from revenues collected will be expended to offset the cost of Operation, Maintenance and equipment replacement for the facility and to retire the debt for capital expenditure.
- Sec. 6 Sewer Service Charges and the Sewer Service Fund will be administrated in accordance with the provisions of Article V of this Ordinance.

ARTICLE III

Determination of Sewer Service Charges

Sec. 1 Users of the City of Orr's wastewater treatment works shall be identified as belonging to one of the following user classes:

- 1) Residential
- 2) Commercial
- 3) Industrial
- 4) Institutional
- 5) Governmental

The allocation of users to these categories for the purpose of assessing User Charges and Debt Service Charges shall be the responsibility of the City Clerk. Allocation of users to user classes shall be based on the substantive intent of the definitions of these classes contained herein.

Sec. 2 Each user shall pay Operation, Maintenance, and Replacement costs in proportion to the user's proportionate contribution of wastewater flows and loadings to the treatment plant, with the minimum rate for loadings of BOD and TSS being the rate established for concentrations of 186 mg/l BOD and 170 mg/l TSS (i.e. Normal Domestic Strength Wastewater).

Those "Industrial Users" discharging segregated 'Normal Domestic Strength Wastewater' only, can be classified as 'Commercial Users' for the purpose of rate determination.

Sec. 3 DETERMINATION OF USER CHARGES FOR METERED USERS

A. CALCULATING BILLABLE FLOWS AND LOADINGS FOR NORMAL DOMESTIC STRENGTH DISCHARGERS

1. Measurement of Wastewater Volume:

The charges assessed residential users and those users of other classes discharging "Normal Domestic Strength Wastewater" shall be established proportionately according to billable wastewater volume.

Billable wastewater volume shall be calculated as follows:

a) Residential Users:

Billable wastewater volume for residential users shall be calculated on the basis of metered water usage. The per quarter billable wastewater volume shall be equal to quarterly metered water usage as averaged between the first and last quarters of the calendar year.

The City may require residential users to install water meters for the purpose of determining billable wastewater volume.

b) Non-Residential Users:

The billable wastewater volume of non-residential users may be determined in the same manner as for residential users. Except that if the City determines that there are significant seasonal variations in the metered water usage of non-residential users resulting in a proportionate increase or decrease in wastewater volume; then billable wastewater volume shall be: 1) calculated on the basis of quarterly metered water usage as recorded throughout the year, or 2) calculated on the basis of wastewater flow meters.

The City may, at its discretion, require non-residential users to install such additional water meters or wastewater flow meters as may be necessary to determine billable wastewater volume.

2. Determination of Loadings from Metered Water Usage:

The billable amounts of BOD and TSS will be calculated from the volume of metered water usage, as determined above; where the billable quantities will be those attributable to wastewater at a concentration of 186 mg/l BOD and 170 mg/l TSS (i.e. "Normal Domestic Strength Wastewater").

B. DETERMINATION OF USER CHARGES FOR NORMAL DOMESTIC STRENGTH USERS:

User Charges for Normal Domestic Strength users shall be determined as follows:

1. Calculation of Unit Costs for Treatment of Normal Domestic Strength Wastewater:

$$Un = \frac{Comr}{Tbwv}$$

Where: Un = Unit cost for Operation, Maintenance and Replacement to treat Normal Domestic Strength, in \$/kgal.
Comr = (Total annual OM&R costs attributable to metered users) - (Charges collected to treat concentrations greater than Normal Domestic Strength; in accordance with Article III; Section 3C and 3D.
Tbwv = Total annual billable wastewater volume in kgal.

2. Calculation of User Charge for Normal Domestic Strength Wastewater

$$U_c = U_n \times bwv$$

Where:

- Uc = User Charge
- Un = Unit cost for Operation, Maintenance and Replacement to treat Normal Domestic Strength, in \$/kgal
- bwv = Billable wastewater volume of a particular user in kgal.

C. CALCULATING BILLABLE FLOW AND LOADINGS FOR USERS DISCHARGING WASTES WITH CONCENTRATIONS GREATER THAN NORMAL DOMESTIC STRENGTH:

Billable flow and loadings shall be determined as follows:

1. Calculation of Billable Flows

The billable amount of flow will be calculated from the volume of metered water usage, or at the discretion of the City, from the measurement of effluent flow at user's point of discharge. Measurements shall be according to a regular program prescribed by the City.

2. Calculation of Billable Loadings

The billable amounts of BOD and TSS will be calculated by the measurement of these wastes according to a program prescribed by the City in keeping with the latest edition of Standard Methods for the Examination of Water and Wastewater and in accordance with Ordinance No. _____, "An Ordinance Establishing Sewer Use Regulations."

To insure compliance with Article II, Section 3 of this Ordinance, the following procedures shall be followed in determining average loadings per billing period for industrial users:

When a particular reading indicates concentrations greater than or equal to Normal Domestic Strength, the actual reading shall be entered into the average for billing purposes.

When a particular reading indicates concentrations less than Normal Domestic Strength, Normal Domestic Strength concentrations shall be entered into the average for billing purposes.

D. DETERMINATION OF USER CHARGES FOR GREATER THAN NORMAL DOMESTIC STRENGTH WASTE DISCHARGERS

1. Calculation of Unit Costs for Treatment of FLOW, BOD, TSS.

For purposes of determining proportionate surcharges, unit costs for treatment of Flow, BOD, and TSS shall be determined and fixed annually in the Sewer Service Charge System (SSCS) according to the following procedure:

- a) Determine the Annual OM&R budget.
- b) Allocate total Annual OM&R costs to Flow, BOD, and TSS proportionately; according to the costs of collection and treatment of Flow, BOD, and TSS.
- c) Divide the OM&R costs attributable to Flow, BOD, and TSS respectively, by the total annual billable volume and loadings of Flow, BOD, and TSS (including flow and loadings attributable to non-metered users) to arrive at unit costs.

Unit costs for 1990 are provided in Table 7 of the Sewer Service Charge System developed with the assistance of John Baker Engineering Inc. Subsequent calculations of unit costs shall be according to the substantive intent of the SSCS.

2. Calculation of User Charges for Greater than Normal Domestic Strength Dischargers

$$Uc = [Un \times bwv] + [Ubod \times K \times bwv(Cbod - Nbod)] + [Utss \times K \times bwv(Ctss - Ntss)]$$

where:

Uc = User Charge
Un = Unit cost for the treatment of Normal Domestic Strength Wastewater
bwv = Billable wastewater volume of a particular user in kgal.
Ubod = Unit cost for treatment of BOD in \$/lb.
K = .00834
Cbod = User's concentration of BOD, in mg/l.
Nbod = 177 mg/l [Concentration of BOD in Normal Domestic Strength Wastes]
Utss = Unit cost for treatment of TSS in \$/lb.
Ctss = Users Concentration of TSS, in mg/l.
Ntss = 220 mg/l [Concentration of TSS in Normal Domestic Strength Wastes]

Sec. 4 DETERMINATION OF USER CHARGES FOR NON-METERED USERS

A. CALCULATION OF WASTEWATER VOLUME FOR NON-METERED NORMAL DOMESTIC STRENGTH DISCHARGES

For non-metered users who discharge "Normal Domestic Strength Wastewater" wastewater volume will be calculated on the basis of "Equivalent Residential Unit's (ERU's). Equivalent Residential Unit's, at a volume of 210 gallons per day will be assigned to connections according to Tables I and II of the Appendix A (attached).

Determination of the number of ERU's assigned to a particular connection in accordance with Tables I and II shall be the responsibility of the City Council or its authorized representative.

B. CALCULATION OF USER CHARGES FOR NON-METERED USERS

1. User Charge Rate Per Equivalent Residential Unit

$$UC \text{ PER ERU} = \frac{COMR}{\text{Total ERU's}}$$

Where:

UC = Annual User Charge

ERU = Equivalent Residential Unit

COMR = Total Annual OM&R Costs Attributable to Non-Metered Users

Total ERU's = The Total Number of ERU's Assigned for Non-Metered Users

2. Determination of User Charges to a Particular Connection

The annual user charge to a connection will be determined as follows:

$$UC = UC \text{ PER ERU} \times \#ERU's$$

Where:

UC = User Charge

ERU = Equivalent Residential Unit

#ERU's = Number of ERU's assigned that Particular Connection

Sec. 5 RECOVERY OF LOCAL CONSTRUCTION COSTS

Local construction costs for the Wastewater Treatment Facility will be recovered through a charge based on the total annual debt service and the total flow from each user in the same manner as the O, M, and R Costs.

Metered Users will be charged on the basis of the following formula:

Debt Service Charge for Metered Users = Yearly Debt Service Charge ÷ Yearly Billable Flow.

Non-metered Users will be charged on the basis of the following formula:

Debt Service Charge for Non-Metered Users = % of Billable Flow from
Non-Metered Users x Yearly Debt Service Cost ÷ Total E.R.U.

Sec. 6 DETERMINATION OF SEWER SERVICE CHARGES

The Sewer Service Charge for a particular connection shall be determined as follows:

$$SSC = UC + DC$$

Where:

SSC = Sewer Service Charge.

DC = User Charge.

DC = Debt Service Charge