

REPORT OF GUIDELINES USED BY  
THE PUBLIC UTILITIES BOARD WHEN  
CHECKING THE EQUITY AND ADEQUACY OF  
WATER AND SEWER  
RATES SUBMITTED FOR APPROVAL

Adopted by the Board  
March 22, 1978

Secretary - G.O. Barron  
Phone: 945-2638

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FOREWORDTEMPLETON REPORT

In 1960 Templeton Engineering Company, Professional Engineers and Consultants to the Board, submitted to the Board a report on a method of establishing municipal water and sewer rates. This report was based largely on the AWWA Water Rates Manual published in 1954. The Templeton Report adapted its conclusions to conditions usually found in Manitoba Municipalities. The Board adopted this report as a guide.

Since that time, the Board has adopted certain variations in its guidelines, based on experience with changing requirements and more intimate knowledge of requirements.

The Board suggested that it would be of value to produce a report of up-dated guidelines for consideration of the Board.

GUIDELINES

IT IS EMPHASIZED THAT PRESENT GUIDELINES SET OUT HEREIN, AND ANY CHANGES WHICH MAY BE ADOPTED FROM TIME TO TIME, ARE ONLY GUIDELINES AND, IN CONSIDERING ANY APPLICATION BY A MUNICIPALITY, GUIDELINES MAY BE VARIED WHERE EVIDENCE INDICATES THAT VARIATION IS REASONABLE, SUBJECT TO THE RESPONSIBILITY OF THE BOARD TO ENSURE THAT THE RESULTING RATES ARE EQUITABLE TO ALL CUSTOMERS, AS FAR AS POSSIBLE, AND THAT THEY WILL PROVIDE SUFFICIENT REVENUE TO RECOVER ALL MAINTENANCE AND OPERATING COSTS.

- NOTE: 1. In this report, "Municipality" means also City, Town, Village, Rural Municipality, Local Improvement District or Local Government District.
2. Abbreviations used are as follows:
- W = Water; S = Sewer; M & O - Maintenance and Operation;  
G followed by a number = Guidelines item; M.G. = Thousand gallons; M. L. = Thousand litres; C = Contingency allowance;  
Incr. = Increment; Ratio = Group Capacity Ratio; Dom. = Domestic rate; Int. - Intermediate rate; Wh. = Wholesale rate;  
Spl. = Special rate; C. M. = Cubic meters.

GUIDELINESG 1. APPLICATION FOR APPROVAL OF RATES

THAT the letter of application be accompanied by:

Two copies of certified By-law, after first reading, Financial Statements of utility for past year, detailed utility budget for current year, rate study by consultant, accountant, or other qualified person, including all information and calculations set forth in applicable Example I, II, III, IV, V, VI or VII hereof.

Note: If insufficient information is provided with application to allow Board staff to determine that proposed rates are equitable, and sufficient to cover costs, hearing may be delayed until such information is received.

G 2. CONSUMER SERVICE CHARGE

THAT this charge be based on utility administration costs, including meter reading (where system is metered), customer billings and collection, and a proportion of other General Administration costs, including office salaries, office expenses, auditing and similar costs. State what percentage of the General Administration cost of the office is charged to the utility.

Since these costs vary largely with the number of customers, rather than with the volume of water sold, total of these costs is divided by total number of customers connected to the system (whether they use water service, sewer service, or both), to derive the annual Service Charge.

G 3. METER SERVICE CHARGE, discontinued

Note: Meter maintenance and contingency costs are now included with other Water Distribution costs. This is a minor cost item. It is considered that basing this cost on cost of meters plus maintenance, instead of on volume of water used, results in no significant improvement in accuracy, while it adds an unnecessary calculation.

G 4. DEBENTURE COSTS

THAT annual debenture costs are essentially recovery of Capital costs, and that greater equity can be achieved by recovering such costs through taxes, and operating and contingency costs through utility rates.

THAT, where water is purchased from The Water Services Board, the Municipality finds out from that Board the annual debenture cost included in the price of water, and recover that amount through taxes, instead of rates.

GUIDELINESG 4. DEBENTURE COSTS (Continued)

Note: Some properties with high assessments and requiring high capital cost expenditures to ensure adequate fire protection may use little water. This practice of debenture cost recovery through taxes helps to distribute the total utility costs more equitable. It also assists customers with low income, who may then take advantage of the available tax rebates on their homes.

G.5 CONTINGENCY ALLOWANCE

THAT costs used as a base for commodity rates should generally include an allowance for unforeseen costs, such as small extensions, replacements and unusual maintenance. A yearly allowance equal to 1% of capital cost is considered adequate, except where it is evident that more costly outlays are required in the near future. Where the utility's cash surplus and reserves seem to be excessive, no contingency allowance may be justified. See G.6.

G.6 SURPLUS CASH AND RESERVES

THAT where surplus cash and reserves appear excessive, needs and possible use of such money be reviewed with the Municipality.

THAT where surplus cash and reserves exceed 10% of gross capital cost of utility property, requirements for the excess be reviewed with the Municipality; if the Utility has a deficit, recovery out of surplus or reserve be discussed with the Municipality; if Municipality applied for increased rates, consideration be given to excluding part or all of the usual contingency allowance in calculating rates, unless the excess can be shown to be required in the near future.

THAT where surplus cash and reserves exceed 20% of gross capital cost, unless a major part of the excess is shown to be needed in the near future, the Municipality be asked to consider addition of a 10% prompt payment discount to the rate schedule, subject to removal of the discount when surplus is no longer excessive.

Note: A utility reserve fund may be established by a By-law authorized by the Board, as set forth in Section 569 of The Municipal Act, which reserve may be used, subject to the Board's approval in each case, among other things, to recover deficits, unforeseen costs, and planned expenditures in excess of usual costs but not large enough to warrant a debenture issue.

GUIDELINESG.6 SURPLUS CASH AND RESERVES (Continued)

Note: The reserve By-law may: authorize transfer of part or all of a present utility cash surplus to reserve; provide that annual surpluses, up to a stated amount each year, may be transferred to reserve for a stated number of years; and provide that a stated amount will be transferred to the reserve each year for a stated number of years. This last compulsory clause is used to accumulate funds to cover some planned expenditure. In this case, the amount of the compulsory transfer is included in the utility budget for each year, and rates must be sufficient to cover this amount or a deficit occurs.

G.7 WATER INCLUDED IN COMMODITY RATES

THAT, the following amounts of water be charged at each rate in the schedule:

At 1 <sup>st</sup> step, Domestic rate	First 20,000 gals. per quarter
At 2 <sup>nd</sup> step, Intermediate rate	Next 80,000 gals. per quarter
At 3 <sup>rd</sup> step, Wholesale rate	Next 400,000 gals. per quarter
At 4 <sup>th</sup> step, Special rate	Over 500,000 gals. per quarter

Note: In a single step rate, all water is sold at 1<sup>st</sup> step. In a 2-step rate, all water over 20,000 gallons per quarter is sold at 2<sup>nd</sup> step rate, etc. (or 100,000 gallons, see G.12)

The 1<sup>st</sup> step is designed to include all water used by most Domestic and small commercial customers; the second step is designed to include water used by "Intermediate" customers which use up to five times as much water as Domestic customers; the third step is designed to include water used by Wholesale customers using up to five times as much water as used by the Intermediate customers; the fourth step is required only if there are one or more customers who use up to five times as much as the Wholesale customers.

The number of steps required in the rate schedule depends on the water used by various customers. The "break-point" between rates may be varied from the above according to requirements of the Municipality's customers. The rate schedule in some Municipalities includes up to 100,000 gallons per quarter in the 1<sup>st</sup> step, where there are few customers in the Intermediate range, but one or more customers using large amount of water, but the Municipality does not wish to go to a 3-step rate. In this case, the 1<sup>st</sup> step is a combined Domestic and Intermediate rate, and the 2nd step a Wholesale rate. G.12, page 8.

GUIDELINESG.8 WATER INCLUDED IN MINIMUM CHARGES

THAT some minimum charge be paid by all customers connected to the system, so all will make a fair contribution to the cost of operating the utility. It is deemed equitable if the minimum charge paid by customers with 5/8 inch meters include 3,000 gallons of water per quarter. The amount of water included for customers using larger meters is based on Group Capacity Ratios recognized by the American Water Works Association. See Minimum Charge tables included in Examples I to VII.

Note: The Templeton Report, 1960, suggested that 9,000 gallons per quarter be included for 5/8 inch meters in Morden. A study made in 1974 indicated that most Municipalities in Manitoba with less than 300 customers included approximately 5,000 gallons per quarter in Minimum Charges for Domestic customers. There is substantial evidence to indicate that a large percentage of customers with 5/8 inch meters, and 5,000 gallons included in their minimum charge, are paying for a great deal of water not used: very often these are the people who can least afford this. Evidence indicates also that this applies to many small customers in larger Municipalities.

G.9 CALCULATION OF COMMODITY RATES

THAT all operating and maintenance expenses, including contingency allowances, and any mandatory appropriations to utility reserve funds, be included in calculation of commodity rates, excluding administration costs recovered through customer service charge.

Revenue and expenses related to capital cost, such as charges for new connections and small extensions, do not enter into rate calculations. Such items as hydrant rentals and contributions from The Water Services Board to cover work done for them by utility employees, are deducted from the above costs.

The resulting net cost, water and sewer costs being shown separately, are divided by M. Gals. of total water sold, to derive the water commodity rates and the sewer commodity rates per M.G. Methods of calculating the commodity rates for each step in the schedule are set forth in G. 10 to 15.



GUIDELINESCALCULATION OF COMMODITY RATES BY STEPSG 10. FOUR-STEP RATE:Fourth step, or Special Rate:

THAT Water rate be based on variable water production costs, such costs to include cost of chemicals, power, heating, 25% of plant labour, plus half of water production contingency cost, but excluding any debenture costs. The resulting cost is divided by M. Gals. of total water sold, to derive the Water rate for this step.

THAT Sewer rate be based on sewage disposal costs, including cost for lift stations pumping effluent into the disposal system, and contingency allowance related to disposal system, excluding any debenture costs. The resulting cost to be divided by M. Gals. of water returned to the sewage disposal system, to derive the Sewer rate for this step.

Third Step, or Wholesale Price:

THAT all water production costs not included in calculating the special rate be divided by M.G. of total water sold, less the water sold at the special rate. This gives an incr. which when added to the Spl. W. rate, gives the wholesale W. rate per M.G.

THAT Sewer rate derived for the special rate applies to the wholesale rate also.

Second step, or Intermediate Rate:

THAT 1/2 (W. distribution costs less hydrant rentals) be divided by M.G. of total water sold, less water sold at Spl. & Wh. water rates. This gives an increment which, when added to the wholesale rate, gives the Intermediate Water rate per M.G.

THAT total sewage collection costs be divided by M.G. of water sold, less water sold at Spl. & Wh. Sewer rates, excluding any such water not returned to the sewer system. This gives an incr. which, when added to Wh. S. rate, gives the Intermediate Sewer rate per M.G.

GUIDELINES

CALCULATION OF COMMODITY RATES - FOUR-STEP RATE (Continued)

First step, or Domestic Rate:

THAT 1/2 (water distribution costs less hydrant rentals) be divided by M.G. of water sold at domestic and bulk rates. This gives an incr. which, when added to Int. W. rate, gives the domestic Water rate per M.G.

The sewer rate derived for the intermediate rate applied to the domestic Sewer rate also.

G 11. THREE-STEP RATE:

Third step, or Wholesale Rate:

THAT all water production costs be divided by M.G. of total water sold, to derive the wholesale Water rate per M.G.

THAT all sewage collection and disposal costs be divided by M.G. of total water returned to sewage system, to derive the wholesale Sewer rate per M.G.

Second step, or Intermediate Rate:

THAT 1/2 (water distribution costs less hydrant rentals) be divided by M.G. of water sold, less water sold at Wh. Water rates. This gives an increment which, when added to the wholesale water rate, gives the intermediate Water rate per M.G.

The sewer rate derived for the wholesale rate applies to the intermediate Sewer rate also.

First step, or Domestic Rate:

THAT 1/2 (water distribution costs less hydrant rentals) be divided by M.G. of water sold at domestic and bulk rates. This gives an increment which, when added to the Int. water rate, gives the domestic Water rate per M.G.

The sewer rate derived for the wholesale rate applies to the domestic Sewer rate also.

GUIDELINES

CALCULATION OF COMMODITY RATES (Continued)

G 12. TWO-STEP RATE - DOMESTIC AND WHOLESALE: (See G.7)

Second step, or Wholesale Rate:

THAT all water production costs be divided by M.G. of total water sold, to derive the wholesale Water rate per M.G.

THAT all sewage collection and disposal costs be divided by M.G. of total water returned to the sewage system, to derive the wholesale Sewer rate per M.G.

First Step, or Domestic rate:

THAT all water distribution costs, less hydrant rentals, be divided by M.G. of W. sold at Domestic and bulk rates, to derive an incr. which, when added to Wh. W. rate, gives the Dom. Water rate per M.G.

The sewer rate derived for the wholesale rate applies to the domestic Sewer rate also.

G 13. TWO-STEP RATE - DOMESTIC AND INTERMEDIATE:

Second step, or Intermediate Rate:

THAT all water production costs, plus 1/2 (water distribution costs less hydrant rentals), be divided by M.G. of total water sold, to derive the intermediate Water rate per M.G.

THAT all sewage collection and disposal costs be divided by total water returned to the sewage system, to derive the intermediate Sewer rate per M.G.

First Step, or Domestic Rate:

THAT 1/2 (water distribution costs less hydrant rentals) be divided by M.G. of water sold at domestic and bulk rates. This gives an increment which, when added to the intermediate water rate, gives the domestic Water rate per M.G.

The sewer rate derived for the intermediate rate applies to the domestic Sewer rate also.

GUIDELINESCALCULATION OF COMMODITY RATES (Continued)G 14. SINGLE RATE - METERED SERVICES:

THAT all costs entering into calculation of water commodity rates, less hydrant rentals, be divided by M.G. of total water sold, to derive the single water rate per M.G.

THAT all costs entering into calculation sewer commodity rates be divided by total M.G. of water returned to the sewage system, to derive the single sewer rate per M.G.

Note: If all customers use both water and sewer services, and if bulk water sales are not a large item, it may not be necessary to calculate water and sewer rates separately.

G. 14A. PARTLY METERED AND PARTLY UNMETERED SERVICES:

THAT such systems, which are usually metered except in single family residences, be encouraged to consider the advantages of metered services:

If water is scarce, or expensive to treat, metered services tend to use less water.

Metered service is more equitable as customers who use more water pay the cost of excess water used.

THAT estimated volume of water used by unmetered services be calculated as follows:

Total water produced or purchased yearly	_____	gals.
Deduct:		
Water unaccounted for which seems appropriate for system	_____	
Gallons sold to metered customers	_____	
Bulk sales	_____	
Sales through hydrants (fires, etc.)	_____	
Total deductions	_____	gals.
Balance = sales to unmetered customers	_____	gals.

The volume of water sold to each unmetered customer per year is derived by dividing gallons of water sold to unmetered customers, as shown above, by total residential equivalent units. G.16.

GUIDELINESCALCULATION OF COMMODITY RATES (Continued)

## G 14A. (Continued)

Quarterly charge per unit is derived by multiplying the quarterly water used per unit by the domestic rates calculated as set forth in Guideline 10 to 14, whichever applies to the Municipality's metered customers, and adding the customer service charge.

THAT where a service is unmetered, and the customer desires to have a meter installed, this be allowed after the customer completes an application which provides:

that meter will be installed, the cost being borne by the Municipality or the customer whichever is the practice with other metered customers;

that if, after the meter has been in service for at least one year, the customer wishes to return to unmetered service, he shall be allowed to do so after he has paid all costs of supplying, installing and removing the meter.

G 15. SINGLE RATE - UNMETERED

THAT all costs entering into calculation of water commodity rates, less hydrant rentals, be divided by the total number of residential equivalent units allocated to water customers, to derive the annual rate per water unit.

THAT all costs entering into calculation of sewer commodity rates be divided by total units allocated to sewer customers, to derive the annual rate per sewer unit. See G.16.

Note: If all customers use both water and sewer services, it may not be necessary to calculate water and sewer units separately.

G.16 RESIDENTIAL EQUIVALENT UNITS

Where a system has no meters, including systems with sewer service only, M.G. of water used and volume of effluent returned to the sewer system are based on residential equivalent units, one unit being the volume of water estimated to be used by the average single family residence. Units allocated to other customers are based on estimated water they will use, as compared with a residence. For calculation of rates per unit, see G.15.

Note: A study made in 1972 is used as a general guide in allocating units. The study was based on completed questionnaires of 30 small metered systems. See Appendix A. (Pages 15 & 16).

GUIDELINESCALCULATION OF COMMODITY RATES (Continued)G 17. HYDRANT RENTALS

THAT the Municipality pay to the Utility an annual rental sufficient to cover cost of maintaining and replacing all hydrants connected to the system. The Municipality is to pay also for any water used for fire-fighting, since this is not a Utility responsibility and should be recovered through taxes.

Since hydrant costs are part of Water Distribution cost, revenue from hydrant rentals is deducted from Distribution costs when calculating rates.

THAT the hydrant rental charged be \$30.00 to \$50.00 per year depending on costs, plus cost of water for fire-fighting. Where cost of water used is included in the rental rate, the charge may vary from \$50.00 to \$75.00 in southern Manitoba, and up to \$150.00 in some Northern Manitoba Municipalities with heated and circulated water.

G 18. INTERIM RATES FOR NEW SYSTEMS

THAT each Municipality which has received authority from the Municipal Budget and Finance Department to construct a new Water System be advised of the requirement that water rates be approved by the Board, and be urged to submit necessary information to the Board as early as possible, so rates may be approved, if possible, before the customers are connected to the system. Arrangements have been made with the Municipal Budget and Finance Department to send a letter to each such Municipality. See Appendix B (Page 17).

The Board Secretary will keep in touch with such Municipalities to obtain such information and By-law. If it appears that full information may not be available before customers are connected, the Board may consider authorization of interim rates, subject to a hearing to authorize regular rates to be held within a stated period.

Note: In a number of cases, rates have not been set until some customers have been using water for some months. Often resulting deficits have been recovered through taxes, instead of through Utility rates which would have been more equitable.

G 19. SEWER SURCHARGE

THAT by Special Resolution of Council there may be levied annually, in addition to rates set forth in prior clauses hereof, a special sewer surcharge, on sewage having a Biochemical Oxygen Demand in excess of 300 parts per million, in an amount sufficient to cover the cost of extra chemicals required to treat the excess B.O.D. and all costs related to such treatment.

GUIDELINESCALCULATION OF COMMODITY RATES (Continued)G 20. WATER NOT RETURNED TO SEWAGE SYSTEM

THAT if it can be clearly shown to the satisfaction of the Board that a substantial amount of water used by a customer consuming in excess of 100,000 gals/quarter which does not return to the sewer system (approximately 10% of the water sold to such customer), the Municipality may be authorized to deduct such water in calculating the Sewer charge to such customer. This authorization shall be applied for by By-law to amend the general rate By-law. Such water would also be deducted in calculating Sewer rates. See G. 10 - 16.

G 21. SERVICE TO CUSTOMERS OUTSIDE MUNICIPALITY, OR L.I.D., LIMITS

The Council of the Municipality may sign agreements with customers for provision of water and sewer services to properties located outside the legal boundaries of the Municipality, or Local Improvement District. Such agreements shall provide for payment of the appropriate rates set out in paragraphs and of this schedule, as well as a surcharge set by resolution of Council, which shall be equivalent to the frontage levy, general taxes and special taxes for utility purposes in effect at the time, or which may be in effect from time to time, and which would be levied on the property concerned if it were within these boundaries. In addition, all costs of connecting to the utility mains and installing and maintaining service connections will be paid by such customers.

G 22. BULK WATER SALES

THAT all bulk water be charged at a rate which includes:

1. The appropriate commodity water rate.
2. A surcharge equivalent to their fair share of taxes for recovery of debenture costs relating to the water system paid by customers in the Municipality.
3. Any additional costs incurred in serving bulk customers.

Note: 1) Where bulk water sales make up a substantial part of water sales, and particularly where water is purchased by the Utility, the appropriate commodity rate set forth in item 1 of this guideline may be The Wholesale (or lowest) commodity rate in the schedule.

Where bulk water is sold through a coin meter the rate is expressed as: \_\_\_\_\_gallons for 25 cents.

THE BULK WATER RATE MAY BE CALCULATED AS FOLLOWS:

All costs included in calculating the water commodity rates and administration service charges (A) plus the water only portion of the utility system annual debenture debt charges (B) All costs included in calculating the water commodity rates and administration service charges (A) multiplied by the "appropriate" (as in (1) above) water rate (C)  
 or  $\frac{A + B}{A} \times C$

Add to the above an allowance for any costs incurred in item 3 above.

GUIDELINESCALCULATION OF COMMODITY RATES (Continued)G 23. BILLING PERIOD

THAT accounts be billed quarterly; accounts based on Residential Equivalent Units, or minimum charges for metered service may be billed quarterly in advance. Excess charges for water and sewer service for the preceding quarter for metered services shall be included with bill for advance minimum charges.

Note: Several small Municipalities with sewer service only bill semi-yearly: in some cases annual bills are simply transferred to Tax Roll. A few Municipalities still bill monthly, but quarterly billings saves two-thirds of the cost of meter reading, billing and collecting.

G 24. BILLING, DUE DATE & PENALTIES

THAT bills be due at least 14 days after the mailing of the bills, and that a penalty of 1¼% shall be charged on the dollar amount owing after the billing due date.

The following clause is recommended:

"A late payment charge of 1¼% shall be charged on the dollar amount owing after the billing due date. The due date will be at least fourteen days after the mailing of the bills."

G 25. DISCONNECTION AND RECONNECTION OF SERVICE FOR NON-PAYMENT

THAT services may be disconnected without further notice if the account has not been paid within 30 days of due date. THAT, before service is reconnected, payment shall be made of all arrears and penalties, plus a reconnection charge of \$5.00

Note: Some Municipalities do not include a disconnection clause, nor a reconnection fee, relying on their right to add any past-due bills to the Tax Roll. In effect, the customer who pay bills promptly are carrying the cost of customers who may defer their payments for up to a year.

G 26. OUTSTANDING UTILITY CHARGES ARE A LIEN ON LAND

Pursuant to Section 252(2) of The Municipal Act, the amount of all outstanding charges for water or sewer service are a lien and charge upon that land, and shall be collected in the same manner in which ordinary taxes upon the land are collectable, and with like remedies. Where a tenant is in arrears the property owner should be notified in all cases.

G 27. APPLICATION FOR APPROVAL OF UTILITY DEFICIT

WHERE a public utility incurs a deficit in its operations in any year, it is required to apply to the Board for approval of the deficit, to explain the cause in detail, and advise how it wishes to recover the deficit, e.g. through taxes on assessment in one to three years, from cash surplus or Reserve fund, by adding the deficit to the following year's budget, or a combination of these methods.



GUIDELINESCALCULATION OF COMMODITY RATES (Continued)G 27. APPLICATION FOR APPROVAL OF UTILITY DEFICIT (Continued)

Note: Before the Board considers the application, the matter is discussed with Municipal Finance Department, and a check is made on deficits for the past 5 years. A check is also made on cash surplus and reserve balances. If it appears that rates need revision, an application for amended rates may be suggested.

G.28 METRIC CONVERSION

In the establishment of new water systems, some Municipalities are considering using meters based on consumption in cubic meters or thousand litres instead of gallons. The conversion factors are:

1 Imp. gallon	=	4.54609 litres
1 Cu. meter	=	1000 litres
1 Cu. meter	=	219.969248 gallons

A GUIDE FOR ASSIGNING RESIDENTIAL EQUIVALENT UNITS FOR  
UNMETERED SYSTEMS.

A STUDY OF WATER USED IN 1971 BY SELECTED CUSTOMERS,  
COMPARED WITH USE BY AN AVERAGE RESIDENTIAL CUSTOMER,  
IN MUNICIPALITIES AND VILLAGES EQUIPPED WITH METERS  
AND HAVING POPULATIONS UP TO 1,000

Of 38 questionnaires distributed, 30 replies were received, 10 from municipalities with populations between 200 and 450, 10 between 470 and 640, and 10 between 800 and 1,000. Except as shown below, there did not appear to be significant differences in use, compared with residences, between customers in smaller or larger towns. Since municipalities without meters generally have under 1,000 residents, no municipalities larger than that were included.

Indicated results are shown below. In some cases more than one customer in a class was shown by a municipality, so customers shown may exceed replies. To eliminate wide variations due to exceptional circumstances, only the middle half of each sample is shown, as well as the average.

<u>Number of Municipalities</u>	<u>Customer</u>	<u>Residential Equivalent Units</u>		
		<u>Average</u> *	<u>Middle Half</u>	<u>Remarks</u>
37	Garages - no wash rack	1.2	.6 to 1.3	
9	- with one wash rack	2.0	1.8 to 3.0	large municipalities
	School (per classroom)			
25	- elementary	.9	.6 to 1.1	
22	- secondary	1.2	.8 to 1.2	
	(each shower - an additional 1/2 unit)			
34	Churches	.6	.3 to .7	
31	Restaurants & Cafes (1 unit for each 20 seats)	1.0	.5 to 1.0	
32	Hotels & Motels (1 unit for - 2 rooms) - 20 restaurant seats) - 15 beverage room seats	1.0	.6 to 1.3	(average in small and medium municipalities .9; large municipalities 1.2)
25	Halls (1 unit for 230 seats)	1.0	.6 to 1.2	
27	Rinks - any size or use	2.4	1.2 to 3.5	(average large municipalities 3.7)
16	Hospitals - per bed	1.5	1.1 to 1.7	(most in large municipalities)
15	Senior Citizens Homes (1/2 unit-single room; 1 unit-double room)	1.1	1.1 to 1.3	
7	Laundromats (per washing machine)	1.1	.7 to 1.4	(most in large Municipalities)



Annual Residential use: Average - 19,400 gals. Middle half - 16,000 to 22,000 gals.

Note: 1. While these averages provide a reasonable guide for municipalities without meters, the sample is comparatively small, and exceptional circumstances should be taken into consideration.

2. Personal Care Homes were not surveyed but may be regarded as a facility falling between a Senior Citizens Home and a Hospital, depending on services provided.

\* Total assessed units are calculated to the closest half unit. One unit being a minimum for any customer.

THE PUBLIC UTILITIES BOARD  
400 - 330 Portage Avenue  
Winnipeg - R3C 0C4  
Phone 945-2638

TO TOWNS AND OTHER MUNICIPAL BODIES  
CONSTRUCTING NEW WATER SYSTEMS:

When new water systems are constructed, in many cases applications for approval of Utility rates by The Public Utilities Board are not received until some customers have been using water for some months. It may take several months for the Board to obtain all the information it needs to assure that rates applied for are equitable and will produce sufficient revenue to pay all maintenance, operating and administrative costs. Since the Board does not consider that it is good practice to authorize rates covering water used before the date of the order, the utility often incurs a deficit, which may have to be recovered through taxes, rather than by charging customers for water used before the date of the Order.

We understand that you are arranging to construct a new water system. To assure that rates may be approved by the Board before water is available to customers, we suggest that, as soon as possible and well before the system is operating, you provide the Board with the following information:

Approximate date construction will start -  
Approximate date first customers will be connected -  
Will you produce and treat water, or will you buy water from the  
Water Services Board -  
If water purchased, estimated initial price -  
Estimated gross cost of facilities -  
If available show Water Production, Water Distribution  
and Sewage Collection and Disposal costs separately  
Number of customers likely to be connected -  
If metered, number using each size of meter -  
Estimated gallons of water to be purchased -  
" " sold, first year of operation -  
Estimated yearly operating expenses -  
If possible show Administration cost (including meter reading),  
Water purchased (or production cost), Water Distribution,  
Sewage Collection and Disposal costs separately.

If rates to be applied for have been calculated, please include this information, along with any rate study or calculations. If you have prepared a rate By-law, please send 2 copies, certified, after first reading. Second reading and passing follow Board approval.

Please phone Mr. Gerry Barron, Secretary to the Board, if you have any questions. If you are not likely to be able to file most of the above information, please contact Mr. Barron, to see if sufficient information is available to allow the Board to consider authorization of Interim Rates, subject to authorization of regular rates after a hearing by the Board to be held by a date to be set as soon as possible.

Secretary

EXAMPLE NO. 1

LARGE MUNICIPALITIES WITH ALL SERVICES METERED, A 4-STEP RATE SCHEDULE, AND ONE OR MORE VERY LARGE CUSTOMERS.

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ABBREVIATIONS: C = Contingency Allowance; Dom. = Domestic Rate; G, followed by a number - Guideline Item; Incr. = Increment; Int. = Intermediate rate; M & O = Maintenance & Operation; M.G. = Thousand Gallons; Q = Quarter year; Ratio = Group Capacity Ratio; S = Sewer; Spl. = Special rate; W = Water; Wh. = Wholesale rate.

USE SPACES ( ) TO INSERT YOUR OWN DATA.

Data for preceding year should be projected for 2 years, e.g.: Assured new customers should be added, as well as additional water sales. Cost increases should be added.

CUSTOMERS:	W & S	1,197	( )	If any customers are located
	W only	3	( )	outside Municipality or L.I.D.
	S only	-	( )	limits, (see G.21) these are
				also to be included in the
				number of customers indicated
	Total	1,200	( )	here.

METERS: Services are all metered. Water used through hydrants for fire-fighting, building construction, etc. should be estimated and charged at the appropriate rate.

Meters connected:	5/8 inch	1,159	( )
	3/4 "	8	( )
	1 "	11	( )
	1½ "	12	( )
	2 "	5	( )
	3 "	1	( )
	4 "	2	( )
	6 "	2	( )
	Total	1,200	

Note: Compound meters should be taken at the highest rating:  
e.g., a 4" & 6" compound meter is rated as 6".

EXAMPLE NO. 1 - Page 2

CAPITAL COST OF SYSTEM: (Total original cost, including cost paid by Government grants, plus cost of additions.) G.5.

	<u>Capital Cost</u>	<u>Contingency Allowance G.5.</u>
Water Production System	\$ 400,000 ( )	\$4,000 ( )
Water Distribution System	300,000 ( )	3,000 ( )
Sewage Collection System	200,000 ( )	2,000 ( )
Sewage Disposal System	<u>100,000</u> ( )	<u>1,000</u> ( )
Total	\$1,000,000 ( )	\$10,000 ( )

UTILITY CASH SURPLUS, accumulated to end of previous year ...\$15,000 ( ) G.6.

UTILITY RESERVE FUND, balance end of previous year . . . . . \$30,000 ( )

WATER:	Produced or purchased	122,000 M.G.	( )
	Sold:		
	4th step - Spl	33,000	( )
	3rd step - Wh.	15,000	( )
	2nd step - Int.	20,600	( )
	1st step - Dom.	42,900	( )
	*Sales through hydrants	-	( )
	Bulk sales	<u>700</u>	( )
	Total sales	<u>112,200</u>	( )
	Unaccounted for	9,800	( )
	= 8% of water produced.		( )

\*Note: Water used through hydrants for fire-fighting, building construction, etc., should be estimated and charged at the appropriate rate, usually the Domestic rate. Water unaccounted for includes water used for flushing sewers, which is a Utility expense.

If it can be clearly shown that a customer uses a substantial amount of water which is not returned to the sewer system (at least 10% of the water sold to such customer), the Municipality may be authorized to deduct such water in calculating the sewer charge to such customer. This authorization shall be applied for by By-law. Such water would also be deducted in calculating sewer rates. See page 4 of this example.

ANNUAL WATER CONSUMPTION (PER QUARTER) NOTE: This data to be filed as additional information

- (a) No. of 5/8" meters and total quarterly consumption through all 5/8" meters.
- (b) Quarterly consumption data for each customer with a meter size larger than 5/8", listing in each case the customer description and meter size.

EXAMPLE NO. 1 - Page 3

## RATE CALCULATIONS:

Based on operating cost and contingency allowance. (G.9) If any debenture costs are to be recovered through rates, these should be included as an expense also. (See G.4). Hydrant rentals are charged to recover cost of maintaining and replacing hydrants, which are part of the Water Distribution system, and are deducted from Water Distribution costs in calculating rates.

<u>Annual Costs</u>	<u>Calculation of rates</u>	<u>Rates Derived</u>
\$30,000 ( )	ADMINISTRATION COSTS: G.2. <u>Costs \$30,000 ( )</u> customers 1,200 ( ) by 4 Q.	<u>Per Quarter</u>
	= <u>Customer Service Charge</u>	= \$6.25 ( )
\$63,000 ( )	VARIABLE WATER PRODUCTION COSTS: G.10. M & O \$61,000 ( ) + C \$2,000 ( ) = \$63,000 ( ) <u>Total Water sales 112,200 M.G. ( )</u>	<u>Per M.G.</u>
	= <u>Spl. Water Rate</u>	= \$0.55 ( )
\$30,000 ( )	WATER PRODUCTION COST NOT INCLUDED ABOVE: M & O \$28,000 ( ) + c \$2,000 ( ) <u>Total sales 112,200 M.G. ( )</u> Less Spl. Sales 33,000 M.G. ( )  Wh. Incr. \$0.40 per M.G. ( ) = Spl. W. rate \$0.55 ( )	
	= <u>Wh. Water rate</u>	= \$0.95 ( )
\$32,700 ( )	WATER DISTRIBUTION COSTS: M & O \$29,700 ( ) + C \$3,000 ( ) less hydrant rental \$7,000 ( ) = Net cost \$25,700  <u>Half net W. Distribution cost \$12,850 ( )</u> Water sold 112,200 ( ), less sales at Sp. & Wh. 48,000 M.G. ( ) = Int. Incr. \$0.20 per M.G. ( ) + Wh. W. rate \$0.95 ( )	
	= <u>Int. W. Rate</u>	= \$1.15 ( )
	<u>Half net W. Distribution cost \$12,850 ( )</u> Water sales - bulk 700 M.G. ( ) + Dom. 42,900 M.G. ( ) = 43,600 M.G. ( ) = Dom. Inc. \$0.30 ( ) + Int. W. rate \$1.15 ( )	= \$1.45 ( )
	= <u>Dom. W. rate</u>	



EXAMPLE NO. 1 - Page 4.

\$14,300                    SEWAGE DISPOSAL COSTS:

(            )            M & O \$13,300 (            ) + c \$1,000 (            )

Total water sold 112,200 M.G. (            )

Less: water only customer    2,000 M.G. (            )

                                 Water not returned

                                        to sewers (G.20)    2,450 M.G., (            )

                                        and bulk sales                       700 M.G. (            )

                                        Total deductions                     5,150 M.G. (            )

                                 Net returned to sewers       107,050 M.G. (            )

                                 Spl. + Wh. S. rate =  $\frac{\$14,300 (            )}{107,050 (            )}$  = \$0.15 (            )

\$18,900                    SEWAGE COLLECTION COSTS:

(            )            M & O \$16,900 (            ) +

C \$2,000 (            ) = \$18,900 (            )

                                 Water returned to sewers, less sold

                                 at Int. & Dom. Rates 63,000 M.G. (            )

                                 = Int. & Dom. S. Incr. \$0.30 (            )

                                 + Spl. + Wh. S. rate \$0.25 (            )

                                 \_\_\_\_\_ = Int. + Dom. S. rate = \$0.45 (            )

\$193,600 - Total expenses for rate calculation.  
(            )

SCHEDULE OF QUARTERLY RATES:

<u>1. Commodity Rates per M.G. - G.7.</u>		<u>Water</u>	<u>Sewer</u>	<u>Water &amp; Sewer</u>
Domestic First	20,000 (            ) gallons per quarter	\$1.45 (            )	\$0.45 (            )	\$1.90 (            )
Intermediate-Next	80,000 (            ) gallons per quarter	1.15 (            )	.45 (            )	1.60 (            )
Wholesale- Next	400,000 (            ) gallons per quarter	.95 (            )	.15 (            )	1.10 (            )
Special- Over	500,000 (            ) gallons per quarter	.55 (            )	.15 (            )	.70 (            )

2. Minimum charges per quarter G.8.

Notwithstanding the commodity rates set forth in paragraph 1 hereof, all customers will pay the applicable minimum charges set out below, which will include the water allowance indicated:

Meter Size	Group Capacity Ratio	Water Included, Gallons	Customer Service Charge	Commodity Charges		Total Quarterly Minimum
				Water	Sewer	
<u>Water &amp; Sewer Customers</u>						
5/8"	1	3,000 ( )	\$6.25 ( )	\$ 4.35 ( )	\$ 1.35 ( )	\$ 11.95 ( )
3/4"	2	6,000 ( )	6.25 ( )	8.70 ( )	2.70 ( )	17.65 ( )
1"	4	12,000 ( )	6.25 ( )	17.40 ( )	5.40 ( )	29.05 ( )
1 1/2"	10	30,000 ( )	6.25 ( )	40.50 ( )	13.50 ( )	60.25 ( )
2"	25	75,000 ( )	6.25 ( )	92.25 ( )	33.75 ( )	132.25 ( )
3"	45	135,000 ( )	6.25 ( )	154.25 ( )	50.25 ( )	210.75 ( )
4"	90	270,000 ( )	6.25 ( )	282.50 ( )	70.50 ( )	359.25 ( )
6"	170	510,000 ( )	6.25 ( )	506.50 ( )	106.50 ( )	619.25 ( )

Water only customers

Quarterly minimum charge is the same for each meter size as shown in table above, except that the Sewer Commodity charge is excluded.

Sewer only residential customers

The average quarterly consumption in gallons of water used for residential customers at the domestic sewer rate plus the quarterly service charge.

3. Bulk Sales Rate G 22

See pae 12 for method of calculation and insert the rate here.

4. Service to customers outside Municipality, or L.I.D., limits

The council of the Municipality may sign agreements with customers for provision of water and sewer services to properties located outside the legal boundaries of the Municipality, or Local Improvement District. Such agreements shall provide for payment of the appropriate rates set out in paragraphs 1 and 2 of this schedule, as well as a surcharge set by resolution of Council, which shall be equivalent to the frontage levy, general taxes and special taxes for utility purposes in effect at the time, or which may be in effect from time to time, and which would be levied on the property concerned if it were within these boundaries. In addition, all costs of connecting to the utility mains and installing and maintaining service connections will be paid by such customers.

For: Hydrant rentals, see G. 17.  
 Billing clause, see G. 23 & 24.  
 Disconnection & Reconnection of Service, See G. 25.

EXAMPLE NO. 1 - Page 6.

RATE CALCULATIONS (continued)

BULK SALES: G.22

Bulk sales rate established as follows:

Total expense for rate calculation (\$193,600) (            ),  
 plus Annual Debenture cost recovered through  
 taxes (\$102,400) (            )

Total of above \$296,000 (            )  
 TOTAL EXP. above (\$193,600) (            ) by Dom. W. rate (\$1.45) (            )

= Bulk water rate (\$2.25 per M.G.) (            )

ESTIMATED ANNUAL REVENUE:

<u>Service charges</u> - No. of customers (1200) (            )			
@ \$25.00 (            ) (4 times \$6.25)		\$30,000	(            )
 <u>Commodity Charges</u>			
<u>W &amp; S:</u> Dom. 42,660 M.G. (            )			
@ \$1.90 per M.G. (            )		81,054	(            )
Int. 19,880 M.G. (            )			
@ \$1.60 per M.G. (            )		31,808	(            )
Wh. 13,960 M.G. (            )			
@ \$1.10 per M.G. (            )		16,356	(            )
Spl. 33,000 M.G. (            )			
@ \$0.70 per M.G. (            )		23,100	(            )
 <u>W.only:</u> Dom. 240 M.G. (            )			
@ \$1.45 per M.G. (            )		348	(            )
Int. 720 M.G. (            )			
@ \$1.15 per M.G. (            )		828	(            )
Wh. 1040 M.G. (            )			
@ \$0.95 per M.G. (            )		988	(            )
Spl. M.G. (            )			
@ \$0.55 per M.G. (            )		-	(            )
 <u>Bulk sales:</u> 700 M.G. (            )			
@ \$2.25 per M.G. (            )		1,575	(            )

EXAMPLE NO. 1 - Page 7

Surcharge on customers located outside Municipality	-	(	)
Hydrant rentals 140 ( )			
@ \$50 ( )			
	<u>7,000</u>	(	)
TOTAL REVENUE	<u>\$ 193,057</u>	(	)
TOTAL EXPENSE RECOVERED THROUGH RATES	193,600	(	)
ESTIMATED surplus (deficit)	\$ (543)	(	)

Note: Estimated revenue should exceed estimated expenses.

EXAMPLE NO. II

MUNICIPALITY WITH ALL SERVICES METERED, 3-STEP SCHEDULE.

ABBREVIATIONS: C = Contingency Allowance; Dom. = Domestic Rate; G, followed by a number = Guideline Item; Incr. = Increment; Int. = Intermediate; M & O = Maintenance & Operation; M.G. = Thousand Gallons; Q = Quarter year; Ratio = Group Capacity Ratio; S = Sewer; W = Water; Wh. = Wholesale rate.

USE SPACES BELOW ( ) TO INSERT YOUR OWN DATA.

Data for preceding year should be projected for 2 years so rates will not have to be changed too often, e.g., estimate increases in costs, number of likely new customers, additional water sales.

CUSTOMERS:	W & S	718	( )	If any customers are located outside
	W only	1	( )	Municipality, or L.I.D., limits, (see
	S only	-	( )	G. 21) these are also to be included
				in the number of customers indicated
	Total	<u>719</u>	( )	here.

METERS:	Connected to system.	5/8 inch	685	( )
		3/4 "	10	( )
		1 "	20	( )
		1 1/2 "	2	( )
		2 "	<u>2</u>	( )
	Total		719	( )

CAPITAL COST OF SYSTEM, ANNUAL DEBENTURE COST & CONTINGENCY ALLOWANCE:

	<u>Capital Cost</u>	<u>Contingency Allowance G.5.</u>
Water Production System	\$210,000 ( )	\$2,100 ( )
Water Distribution System	250,000 ( )	2,500 ( )
Sewage Collection System	175,000 ( )	1,750 ( )
Sewage Disposal System	<u>75,000</u> ( )	<u>750</u> ( )
Total	\$710,000 ( )	\$7,100 ( )

Annual debenture costs - \$40,000 ( )

Recovered by:

Frontage charges	\$15,000	( )
Taxes on assessment	\$25,000	( )
Rates	-	( )

EXAMPLE NO. II - Page 2.

UTILITY CASH SURPLUS, accumulated to end of previous year	\$10,000	( )	G.6
UTILITY RESERVE FUND, balance end of previous year	\$20,000	( )	
WATER: Produced or purchased	55,000 M.G.	( )	
Sold:			
3rd step - Wholesale	1,600	( )	
2nd step - Intermediate	11,830	( )	
1st step - Domestic	36,040	( )	
* Sales through hydrants	-	( )	
Bulk sales	<u>800</u>	( )	
Total Sales	<u>50,270</u>	( )	
Unaccounted for	4,730	( )	
percentage of water produced or purchased	8.6%	( )	

Note: Water used through hydrants for fire-fighting, building construction, etc., should be estimated and charged at the appropriate rate, usually the Domestic rate. Water unaccounted for includes water used for flushing sewers, which is a Utility expense.

ANNUAL WATER CONSUMPTION (PER QUARTER) NOTE: This data to be filed as additional information

- (a) No. of 5/8" meters and total consumption through all 5/8" meters.
- (b) Quarterly consumption data for each customer with a meter size larger than 5/8", listing in each case the customer description and meter size.

RATE CALCULATIONS:

Based on operating expenses and contingency allowances. G. 9. If any debenture costs are to be recovered through rates, these should be included as an expense also. (See G.4). Hydrant rentals are charged to recover cost of maintaining and replacing hydrants, which are part of the W. Distribution system: these rentals should be deducted from W. Distribution costs in calculating rates, as shown below.

<u>Annual Costs</u>	<u>Calculation of rates</u>	<u>Rates Derived Per Quarter</u>
\$ 7,200 ( )	ADMINISTRATION COSTS: G.2. Cost \$7,200 ( ) Customers 719 ( ) X 4 Q.	
	= <u>Customer Service Charge</u>	= \$2.50 ( )
\$35,800 ( )	WATER PRODUCTION COSTS, OR W. PURCHASED: G. 11 <u>M &amp; O \$33,700 ( )</u> + C \$2,100 ( ) Total W. sales - 50,270 M.G. ( )	<u>Per M.G.</u>
	= <u>Wholesale W. rate</u>	= \$0.70 ( )

EXAMPLE NO. II - Page 3

Per M.G.

\$16,760  
( ) WATER DISTRIBUTION COSTS:  
M & O \$14,260 ( ) ( + C \$2,500 ( ) ),  
less Hydrant rentals \$1,200 ( )  
= Net cost - \$15,560 ( ) .

Half net W. Dist. Cost \$7,780 ( )  
Total W. sales 50,270 M.G. ( ) ,  
less Wh. W. 1,600 M.G. ( ) = 48,670 M.G. ( )  
= Intermediate increment \$0.15 ( )  
+ Wholesale W. rate \$0.70 ( )  
= Intermediate W. rate = \$0.85 ( )

Half net W. Dist. Cost \$7,780 ( )  
Dom. W. sales 36,040 M.G. ( )  
+ Bulk sales 800 M.G. ( ) = 36,840 M.G. ( )  
= Domestic increment \$0.25 ( )  
+ Intermediate W. rate of \$0.85 ( )  
= Domestic W. rate = \$1.10 ( )

\$19,000  
( ) SEWAGE COLLECTION & DISPOSAL COSTS:  
M & O \$16,500 ( ) + C \$2,500 ( )  
Total W. sales 50,270 M.G. ( ) ,  
less W. customers only 1,000 M.G. ( ) ,  
& less Bulk sales 800 M.G. ( )  
= 48,470 M.G. ( )  
= Sewer rate for all steps = \$0.40 ( )

\$78,760  
( ) Total expenses for rate calculation, excluding debenture charges which are collected through taxes.

BULK SALES RATE: G.22

M & O & C costs \$78,760 ( ) + Debenture  
Costs \$40,000 ( ) = \$118,760 ( )  
M & O & C costs \$78,760 ( )  
multiplied by Dom W. rate \$1.10 ( )  
= Bulk sales rate = \$1.70 ( )

SCHEDULE OF QUARTERLY RATES:

1. <u>Commodity Rates per M.G.</u>	<u>Water</u>	<u>Sewer</u>	<u>Water &amp; Sewer</u>
Domestic - First 20,000 ( ) gallons per quarter	\$1.10 ( )	\$0.40 ( )	\$1.50 ( )
Intermediate-Next 80,000 ( ) gallons per quarter	0.85 ( )	.40 ( )	1.25 ( )
Wholesale -Over 100,000 ( ) gallons per quarter	.70 ( )	.40 ( )	1.10 ( )

EXAMPLE NO. II - Page 4.

2. Minimum Quarterly Charges G.8.

Notwithstanding the Commodity Rates set forth in paragraph 1 hereof, all customers will pay the applicable minimum charges set out below, which will include water allowances indicated:

Meter Size	Group Capacity Ratio	Water Included, Gallons	Customer Service Charge	Commodity Charges		Total Quarterly Minimum
				Water	Sewer	
<u>Water &amp; Sewer Customers</u>						
5/8"	1	3,000( )	\$2.50( )	\$3.30( )	\$1.20( )	\$ 7.00( )
3/4"	2	6,000( )	2.50( )	6.60( )	2.40( )	11.50( )
1"	4	12,000( )	2.50( )	13.20( )	4.80( )	20.50( )
1 1/2"	10	30,000( )	2.50( )	30.50( )	12.00( )	45.00( )
2"	25	75,000( )	2.50( )	68.75( )	30.00( )	101.25( )

Water only customers

Minimum Charge will be the same as shown above for each meter size, but Sewer Commodity Charge will be excluded.

Sewer only residential customers

The average quarterly consumption in gallons of water used for residential customer at the domestic sewer rate plus the quarterly service charge.

3. Bulk Sales Rate G 22

See page 12 for method of calculation and insert the rate here.

4. Service to customers outside Municipality, or L.I.D., limits.

The Council of the Municipality may sign agreements with customers for the provision of water and sewer services to properties located outside the legal boundaries of the Municipality. Such agreements shall provide for payment of the appropriate rates as set forth in paragraphs 1 and 2 of this schedule, as well as a surcharge set by resolution of Council, which shall be equivalent to the frontage levy, and general and special taxes for Utility purposes in effect at the time, or may be in effect from time to time, and which would be levied on the property concerned if it were within these boundaries. In addition, all costs of connecting to the Utility's mains, and installing and maintaining service connections will be paid by the customer.

5. Reconnection Fee G.25.

A customer who has had his service disconnected for any reason, shall not be reconnected until all regulations have been complied with, and all arrears paid, as well as any penalties and a reconnection fee of \$5.00. (This fee is set by the Municipality to cover costs of connection and disconnection).





EXAMPLE NO. III

TOWN WITH ALL SERVICES METERED, 2-STEP SCHEDULE, WITH FEW CUSTOMERS USING MUCH MORE WATER THAN RESIDENCES, BUT WITH ONE OR MORE FAIRLY LARGE CUSTOMERS.

ABBREVIATIONS: C = Contingency Allowance; Dom. = Domestic Rate; G, followed by a number = Guideline Item; Incr. = Increment; M & O = Maintenance & Operation; M.G. = Thousand Gallons; Q = Quarter year; Ratio = Group Capacity Ratio; S = Sewer; W = Water; Wh. = Wholesale rate.

USE SPACES BELOW ( ) TO INSERT YOUR OWN DATA.

Data for preceding year should be projected for 2 years to allow for increases, e.g., estimate increases in costs, number of likely new customers, additional water sales, or decreases where likely.

CUSTOMERS:	W & S	500	( )	If any customers are located outside Municipality or L.I.D. limits, (see G.21) these are also to be included in the number of customers indicated here.
	W only	10	( )	
	S only	-	( )	
	Total	510	( )	

METERS:	Connected to system.	5/8 inch	477	( )
		3/4 "	20	( )
		1 "	10	( )
		1½ "	-	( )
		2 "	3	( )
	Total		510	( )

## CAPITAL COST OF SYSTEM, ANNUAL DEBENTURE COST &amp; CONTINGENCY ALLOWANCE:

	<u>Capital Cost</u>	<u>Contingency Allowance G.5.</u>
Water Production System	\$ 150,000 ( )	\$1,500 ( )
Water Distribution System	200,000 ( )	2,000 ( )
Sewer Collection & disposal	<u>180,000</u> ( )	<u>1,800</u> ( )
Total	530,000 ( )	\$ 5,300 ( )

Annual Debenture cost - \$30,000 ( )

Recovered by:

Frontage charges -	\$10,000 ( )
Taxes on assessment -	20,000 ( )
Rates	- ( )

EXAMPLE NO. III - Page 2.

UTILITY CASH SURPLUS, accumulated to end of previous year	\$ 8,000	( )	G.6
UTILITY RESERVE FUND, balance end of previous year	\$16,000	( )	
WATER: Produced or purchased	45,000 M.G.	( )	
Sold:			
Wholesales step	11,700	( )	
Domestic step	28,900	( )	
Bulk sales	400	( )	
*Sales through hydrants	<u>        -</u>	( )	
Total Sales	<u>41,000</u>	( )	
Unaccounted for	4,000	( )	
Percentage of water produced or purchased	8.9%	( )	

\*Note: Water used through hydrants for fire-fighting, building construction, etc., should be estimated and charged at the appropriate rate, usually the Domestic rate. Water unaccounted for includes water used for flushing sewers, which is a Utility expense.

ANNUAL WATER CONSUMPTION (PER QUARTER)      NOTE: This data to be filed as additional Information

---

(a) No. of 5/8" meters and total consumption through all 5/8" meters.  
 (b) Quarterly consumption data for each customer with a meter size larger than 5/8", listing in each case the customer description and meter size.

RATE CALCULATIONS:

Based on operating expenses and contingency allowances. (G.9) If any debenture costs are to be recovered through rates, these should be included as an expense also. (See G.4). Hydrant rentals are charged to recover cost of maintaining and replacing hydrants, which are part of the W. Distribution system: these rentals should be deducted from W. Distribution costs in calculating rates, as shown below.

<u>Annual Costs</u>	<u>Calculation of rates</u>	<u>Rates Derived</u>
\$ 4,900	ADMINISTRATION COSTS: G.2.	<u>Per Quarter</u>
( )	Costs - \$4,900 ( ) Customers 510 ( ) by 4 Q. = <u>Customer Service Charge</u>	= \$2.50 ( )
\$26,500	WATER PRODUCTION COST, OR WATER PURCHASED: G.12.	<u>Per M.G.</u>
( )	M & O \$25,000 ( ) + C \$1,500 ( ) Total W. sales - 41,000 M.G. ( ) = <u>Wholesale W. Rate</u>	= \$0.65 ( )

\$14,000  
( )

WATER DISTRIBUTION COSTS:  
M & O \$12,000 ( ) + C \$2,000 ( ),  
Less hydrant rentals \$1,000 ( )  
= net cost \$13,000 ( )

---

Total sales 41,000 M.G., ( )  
Less Wh. W. 11,700 M.G. ( )

= Domestic W. Incr.  
= \$0.45 ( )  
+ Wh. Rate \$0.65 ( )  
= Domestic W. rate = \$1.10 ( )

\$13,800  
( )

SEWAGE COLLECTION & DISPOSAL COSTS:  
M & O \$12,000 ( ) + C \$1,800 ( )  
Total sales 41,000 M.G. ( ), less  
Bulk sales 400 M.G. ( ) and  
Sales to water only cust. 500 M.G. ( )  
= net 40,100 M.G. ( )

= Sewer rate for both steps = \$0.35 ( )

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\$59,200 Total expenses for rate calculation, excluding  
debenture charges, collected through taxes.

BULK SALES RATE: G. 22.

M & O & C costs \$59,200 ( ) + debenture  
Costs \$30,000 ( ) = \$89,200 ( ) multiplied by  
M & O & C \$59,200 ( )

Dom. W. rate \$1.10 per M.G. ( )

= Bulk Sales Rate = \$1.70 ( )

SCHEDULE OF QUARTERLY RATES:

1. <u>Commodity Rates per M.G.</u>		<u>Water</u>	<u>Sewer</u>	<u>Water &amp; Sewer</u>
First	100,000 ( ) gallons per quarter	\$1.10 ( )	\$0.35 ( )	\$1.45 ( )
Over	100,000 ( ) gallons per quarter	0.65 ( )	.35 ( )	1.00 ( )

EXAMPLE NO. III - Page 4.2. Minimum Quarterly Charges G. 8.

Notwithstanding the Commodity Rates set forth in paragraph 1 hereof, all customers will pay the applicable minimum charges set out below, which will include water allowances indicated:

Meter Size	Group Capacity Included, Ratio	Water Included, Gallons	Customer Service Charge	Commodity Charges		Total Quarterly Minimum
				Water	Sewer	
<u>Water &amp; Sewer Customers</u>						
5/8"	1	3,000( )	\$2.50( )	\$3.30( )	\$1.05( )	\$ 6.85( )
3/4"	2	6,000( )	2.50( )	6.60( )	2.10( )	11.20( )
1"	4	12,000( )	2.50( )	13.20( )	4.20( )	19.90( )
1 1/2"	10	30,000( )	2.50( )	26.40( )	8.40( )	37.30( )
2"	25	75,000( )	2.50( )	82.50( )	26.25( )	111.25( )

Water only Customers

Minimum Charge will be the same for each meter size as shown above, but Sewer Commodity Charge will be excluded.

Sewer only residential customers

The average quarterly consumption in gallons of water used for residential customers at the domestic sewer rate plus the quarterly service charge. (See Page 19 for calculation and insert the rate).

3. Bulk Sales Rate G 22

See page 12 for method of calculation and insert the rate here.

4. Service to customers outside Municipality, or L.I.D., limits.

The Council of the Municipality may sign agreements with customers for the provision of water and sewer services to properties located outside the legal boundaries of the Municipality. Such agreements shall provide for payment of the appropriate rates as set forth in paragraphs 1 and 2 of this schedule, as well as a surcharge, set by resolution of Council, which shall be equivalent to the frontage levy, and general and special taxes for Utility purposes in effect at the time, or as may be in effect from time to time, and would be levied on the property concerned if it were within these boundaries. In addition, all costs of connecting to the Utility's mains, and installing and maintaining service connections will be paid by the customer.

EXAMPLE NO. III - Page 5

## SCHEDULE OF QUARTERLY RATES: (continued)

5. Reconnection Fee G. 25.

A customer who has had his service disconnected for any reason shall not be reconnected until all regulations have been complied with, and all arrears paid, as well as any penalties and a reconnection fee of \$5.00. (This fee is set by the Municipality to cover costs of connection and disconnection.)

6. Billing and penalties. See G. 23 & 24.7. Hydrant rentals. See G. 17.

## ESTIMATED ANNUAL REVENUES AND EXPENSES:

## REVENUE:

Service Charges - 510 ( ) customers			
@ \$2.50 times 4 Q.		\$ 5,100	( )

## Commodity Charges:

<u>W &amp; S:</u>	Dom. Rate -	28,400 M.G. ( )		
		@ \$1.45 ( ) per M.G.	41,180	( )

	Wh. Rate -	11,700 M.G. ( )		
		@ \$1.00 ( ) per M.G.	11,700	( )

<u>W. only:</u>	Dom. Rate -	500 M.G. ( )		
		@ \$1.10 ( ) per M.G.	550	( )

Bulk Sales:	400 M.G. ( ) @ \$1.70 ( ) per M.G.	680	( )
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Hydrant rentals:	25 ( ) hydrants @ \$40.00 ( )	<u>1,000</u>	( )
------------------	-------------------------------	--------------	-----

Total revenue		\$60,210	( )
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Total expenses (See page 3 of this example)		<u>59,200</u>	( )
---	--	---------------	-----

Estimated surplus		\$ 1,010	( )
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Note: Estimated revenue should exceed estimated expenses.

EXAMPLE NO. IV

MUNICIPALITY WITH ALL SERVICES METERED, 2-STEP SCHEDULE, WITH NO LARGE CUSTOMERS, BUT SOME IN THE INTERMEDIATE RANGE.

ABBREVIATIONS: C = Contingency Allowance; Dom. = Domestic Rate; G, followed by a number = Guideline Item; Incr. = Increment; M & O = Maintenance & Operation; M.G. = Thousand Gallons; Q = Quarter year; Ratio = Group Capacity Ratio; S = Sewer; W = Water; Wh. = Wholesale rate.

USE SPACES BELOW ( ) TO INSERT YOUR OWN DATA.

Data for preceding year should be projected for 2 years to allow for increases, e.g., estimate increases in costs, number of likely new customers, additional water sales, or decreases where likely.

CUSTOMERS:	W & S	430	( )	If any customers are located outside Municipality or L.I.D. limits, (see G.21) these are also to be included in the number of customers indicated here.
	W only	10	( )	
	S only	10	( )	
		450	( )	
	Total	450	( )	

METERS:	Connected to system.	5/8 inch	427	( )
		3/4 "	20	( )
		1 "	3	( )
		1½ "	-	( )
		2 "	-	( )
		Total	450	( )

CAPITAL COST OF SYSTEM, ANNUAL DEBENTURE COST & CONTINGENCY ALLOWANCE:

	<u>Capital Cost</u>	<u>Contingency Allowance G.5.</u>
Water Production System	\$ 150,000 ( )	\$1,500 ( )
Water Distribution System	175,000 ( )	1,750 ( )
Sewer Collection & Disposal	<u>175,000</u> ( )	<u>1,750</u> ( )
Total	500,000 ( )	\$ 5,000 ( )

Annual Debenture cost - \$30,000 ( )

Recovered by:

Frontage charges -	\$10,000 ( )
Tax on assessment -	20,000 ( )
Rates	- ( )

EXAMPLE NO. IV - Page 2.

UTILITY CASH SURPLUS, accumulated to end of previous year \$ 7,000 ( ) G.6.

UTILITY RESERVE FUND, balance end of previous year \$14,000 ( )

WATER:	Produced or purchased	40,000 M.G.	( )
	Sold:		
	Intermediate step	10,000	( )
	Domestic step	27,000	( )
	Bulk Sales	350	( )
	*Sales through hydrants	<u>        -</u>	( )
	Total sales	<u>37,350</u>	( )
	Unaccounted for	2,650	( )
	Percentage of water		
	Produced or purchased	6.6%	( )

\*Note: Water used through hydrants for fire-fighting, building construction, etc., should be estimated and charged at the appropriate rate, usually the Domestic rate. Water unaccounted for includes water used for flushing sewers, which is a Utility expense.

ANNUAL WATER CONSUMPTION (PER QUARTER) NOTE: This data to be filed as  
additional information

- (a) No. of 5/8" meters and total consumption through all 5/8" meters.  
(b) Quarterly consumption data for each customer with a meter size larger than 5/8", listing in each case the customer description and meter size.

## RATE CALCULATIONS:

Based on operating expenses and contingency allowances. G.9 If any debenture costs are to be recovered through rates, these should be included as an expense also. (See G.4). Hydrant rentals are charged to recover cost of maintaining and replacing hydrants, which are part of the W. Distribution system: these rentals should be deducted from W. Distribution costs in calculating rates, as shown below.

<u>Annual Costs</u>	<u>Calculation of rates</u>	<u>Rates Derived</u> <u>Per Quarter</u>
\$ 4,950 ( )	ADMINISTRATION COSTS: G.2.  <u>Costs - \$ 4,950 ( )</u> customers 450 ( ) by 4 Q. = <u>Customer Service Charge</u>	= \$2.75 ( )
\$26,500 ( )	WATER PRODUCTION COST, OR WATER PURCHASED:G 13 <u>M &amp; O \$25,000 ( ) + C \$1,500 ( )</u> Total W. sales 37,350 M.G. ( )	
\$18,750 ( )	WATER DISTRIBUTION COSTS: M & O \$17,000 ( ) + C \$1,750 ( ) less hydrant rentals \$800 ( ) = \$17,950( )	



EXAMPLE NO. IV - page 3

Per M.G.

To derive Int. rate, or 2nd step:

Take W. Production cost	\$26,500	( )	,
Add 1/2 net W. Distr. Cost	8,975	( )	
<hr/>			
Total cost	\$35,475	( )	
Total W. sales	37,350 M.G.	( )	
<hr/>			
			= Intermediate W. rate = \$1.00 ( )

To derive Dom. Increment:

Take 1/2 net W. Dist. cost	\$8,975	( )	
Total W. sales	37,350 M.G.	( )	
less Sales, Int.	10,000 M.G.	( )	
<hr/>			
			= Domestic W. Incr. = \$0.35 ( )

Domestic W. rate is Int. W. rate	\$1.00	( )	
plus Dom. W. Incr.	\$0.35	( )	
<hr/>			
			= \$1.35 ( )

\$12,750 SEWAGE COLLECTION & DISPOSAL COSTS:

( )	M & O \$11,000	( )	+ C \$1,750	( )	
<hr/>					
Total sales 37,350 M.G. ( )					
less Sales, W. cust. only 600 M.G. ( )					
And less Bulk sales 350 M.G. ( )					
<hr/>					
					= Sewer rate for both steps = \$0.35 ( )

\$62,950 Total expenses for rate calculation, excluding debenture charges through taxes.  
( )

BULK SALES RATE: G 22.

M & O & C costs	\$62,950	( )	, plus	
debenture cost	\$30,000	( )		
<hr/>				
M & O & C costs	\$62,950	( )		
Multiplied by Dom. W. rate	\$1.35	( )		
<hr/>				
				= Bulk sales rate = \$2.00 ( )

SCHEDULE OF QUARTERLY RATES:

1. Commodity Rates per M.G.	Water	Sewer	Water & Sewer
First 20,000 ( ) gallons per quarter	\$1.35 ( )	\$0.35 ( )	\$1.70 ( )
Over 20,000 ( ) gallons per quarter	1.00 ( )	0.35 ( )	1.35 ( )

EXAMPLE NO. IV - page 4

2. Minimum Charges Quarterly G. 8.

Notwithstanding the Commodity Rates set forth in paragraph 1 hereof, all customers will pay the applicable minimum charges set out below, which will include water allowances indicated:

<u>Meter Size</u>	<u>Group Capacity Ratio</u>	<u>Water Included, Gallons</u>	<u>Customer Service Charge</u>	<u>Commodity Charges</u>		<u>Total Quarterly Minimum</u>
				<u>Water</u>	<u>Sewer</u>	
<u>Water &amp; Sewer Customers</u>						
5/8"	1	3,000( )	\$2.75( )	\$4.05( )	\$1.05( )	\$ 7.85( )
3/4"	2	6,000( )	2.75( )	8.10( )	2.10( )	12.95( )
1"	4	12,000( )	2.75( )	16.20( )	4.20( )	23.15( )
1 1/2"	10	30,000( )	2.75( )	37.00( )	10.50( )	50.25( )
2"	25	75,000( )	2.75( )	82.00( )	26.25( )	111.00( )

Water only customers

Minimum Charge will be the same for each meter size as shown above, but Sewer Commodity Charge will be excluded.

3. Bulk Sales Rate G 22

See page 12 for method of calculation and insert the rate here.

4. Service to customers outside Municipality, or L.I.D., limits

The Council of the Municipality may sign agreements with customers for the provision of water & sewer services to properties located outside the legal boundaries of the Municipality. Such agreements shall provide for payment of the appropriate rates as set forth in paragraphs 1 and 2 of this schedule, as well as a surcharge, set by resolution of Council, which shall be equivalent to the frontage levy, and general and special taxes for Utility purposes in effect at the time, or as may be in effect from time to time, and would be levied on the property concerned if it were within these boundaries. In addition, all costs of connecting to the Utility's mains, and installing and maintaining service connections will be paid by the customer.

EXAMPLE IV - Page 5.

5. Reconnection Fee G. 25.

A customer who has had his service disconnected for any reason shall not be reconnected until all regulations have been complied with, and all arrears paid, as well as any penalties and a reconnection fee of \$5.00. (This fee is set by the Municipality to cover costs of connection and disconnection).

6. Billing and Penalties. See G. 23 & 24.

7. Hydrant Rentals. See G. 17.

ESTIMATED ANNUAL REVENUES AND EXPENSES:

REVENUE:

Service Charges - 450 ( ) customers,			
@ \$2.75 ( ) by 4 Q.		\$4,950	( )
Commodity Charges:			
<u>W &amp; S:</u>	Dom. Rate -	26,500 M.G. ( ),	
		@ \$1.70 ( ) per M.G.	45,050 ( )
	Int. Rate -	10,000 M.G. ( ),	
		@ \$1.35 ( ) per M.G.	13,500 ( )
<u>W. only:</u>	Dom. Rate -	500 M.G. ( ),	
		@ \$1.35 ( ) per M.G.	675 ( )
<u>S. only:</u>	Dom. Rate -	500 M.G. ( ),	
		@ \$0.35 ( ) per M.G.	175 ( )
Bulk Sales:	350 M.G. ( ) @ \$2.00 per M.G.		700 ( )
Hydrant rentals:	20 ( ) @ \$40.00 per year ( )		<u>800</u> ( )
	Total Revenue		\$65,850 ( )
	Total Expenses - page 3		<u>62,950</u> ( )
	Estimated Surplus		\$ 2,900 ( )

Note: Estimated revenue should exceed estimated expenses.

EXAMPLE NO. V

MUNICIPALITY WITH ALL SERVICES METERED, SINGLE RATE SCHEDULE, WITH NO LARGE CUSTOMERS.

ABBREVIATIONS: C = Contingency Allowance; Dom. = Domestic Rate; G, followed by a number = Guideline Item; Incr. = Increment; M & O = Maintenance & Operation; M.G. = Thousand Gallons; Q = Quarter year; Ratio = Group Capacity Ratio; S = Sewer; W = Water; Wh. = Wholesale rate.

USE SPACE BELOW ( ) TO INSERT YOUR OWN DATA.

Data for preceding year should be projected for 2 years to allow for increases, e.g., estimate increases in costs, number of likely new customers, additional water sales, or decreases anticipated.

CUSTOMERS:	W & S	340	( )	If any customers are located outside Municipality or L.I.D. limits, (see G.21) these are also to be included in the number of customers indicated here.
	W only	5	( )	
	S only	5	( )	
	<hr/>			
	Total	350	( )	

METERS:

Connected to system	5/8 inch	344	( )
	3/4 "	4	( )
	1 "	2	( )
	1½ "	-	( )
	2 "	-	( )
	Total	<hr/> 350	( )

CAPITAL COST OF SYSTEM, ANNUAL DEBENTURE COST & CONTINGENCY ALLOWANCE:

	<u>Capital Cost</u>	<u>Contingency Allowance G.5.</u>
W. Production & distribution	\$ 225,000 ( )	\$2,250 ( )
S. Collection & Disposal	<u>160,000</u> ( )	<u>1,600</u> ( )
Total	\$ 385,000 ( )	\$ 3,850 ( )

Annual Debenture cost - \$25,000 ( )

Recovered by:

Frontage charges	8,000	( )
Tax on assessment	17,000	( )
Rates	-	( )

EXAMPLE NO. V - Page 2

UTILITY CASH SURPLUS, accumulated to end of previous year	\$ 5,000	( )	G.6.
UTILITY RESERVE FUND, balance end of previous year	\$10,000	( )	
WATER: Produced or Purchased	30,000 M.G.	( )	
Sold:			
Connected customers	27,000	( )	
Bulk Sales	300	( )	
Sales through hydrants	<u>        -</u>	( )	
Total sales	<u>27,300</u>	( )	
Unaccounted for	2,700	( )	
Unaccounted percentage of water produced or purchased	9%	( )	

Note: Water used through hydrants for fire-fighting, building construction, etc., should be estimated and charged at the appropriate rate, usually the Dom rate. Water unaccounted for includes water used for flushing sewers, which is a Utility expense.

ANNUAL WATER CONSUMPTION (PER QUARTER)

NOTE: This data to be filed as additional  
information

- (a) No. of 5/8" meters and total consumption through all 5/8" meters.  
 (b) Quarterly consumption data for each customer with a meter size larger than 5/8", listing in each case the customer description and meter size.

## RATE CALCULATIONS:

Based on operating expenses and contingency allowances. G.9. If any debenture costs are to be recovered through rates, these should be included as an expense also. (See G.4). Hydrant rentals are charged to recover cost of maintaining and replacing hydrants, which are part of the W. Distribution system: these rentals should be deducted from W. costs in calculating rates, as shown below.

<u>Annual Costs</u>	<u>Calculation of rates</u>	<u>Rates Derived Per Quarter</u>
\$3,500 ( )	ADMINISTRATION COSTS: G.2. <u>Costs \$3,500 ( )</u> customers 350 ( ) by 4 Q.	
	= <u>Customer Service Charge</u>	= \$2.50 ( )
\$35,000 ( )	WATER PRODUCTION & DISTRIBUTION COSTS: G.14. M & O \$32,750 ( ) + C \$2,250 ( ), less hydrant rental \$680 ( ) <u>Net cost \$34,320 ( )</u> Total W. sales 27,300 M.G. ( )	<u>Per M.G.</u>
	= <u>Water Commodity Rate</u>	= \$1.30 ( )

\$ 13,600 SEWER COLLECTION & DISPOSAL COSTS:  
 ( ) M & O \$12,000 ( ) + C \$1,600 ( )  
 Total sales 27,300 M.G. ( ), less  
 W. only sales 370 M.G. ( ) & less  
 Bulk sales 300 M.G. ( ) = 26,630 M.G. ( )  
 = Sewer Commodity rate = \$0.50 ( )

\$52,100 Total expenses for rate calculation, excluding  
 Debenture charges collected through taxes.

BULK SALES RATE: G. 22.

M & O + C Costs \$52,100 ( ) plus  
 debenture costs paid through taxes

\$25,000 ( ) = \$77,100 ( ), multiply  
 M & O + C costs \$52,100 ( )

by W. Commodity rate \$1.30 per M.G. ( )

= Bulk Water rate = \$2.00 ( )

SCHEDULE OF QUARTERLY RATES:

1. Commodity rates per M.G.

	<u>Water</u>	<u>Sewer</u>	<u>Water &amp; Sewer</u>
All water consumption	\$1.30 ( )	\$0.50 ( )	\$1.80 ( )

2. MINIMUM CHARGES, Quarterly G.8.

Notwithstanding the Commodity rates set forth in paragraph 1 hereof, all customers will pay the applicable minimum charges set out below, which will include water allowances indicated:

Meter Size	Group Capacity Ratio	Water Included, Gallons	Customer Service Charge	<u>Commodity Charges</u>		Total Quarterly Minimum
				<u>Water</u>	<u>Sewer</u>	
<u>Water &amp; Sewer Customers</u>						
5/8"	1	3,000 ( )	\$2.50 ( )	\$ 3.90 ( )	\$ 1.50 ( )	\$ 7.90 ( )
3/4"	2	6,000 ( )	2.50 ( )	7.80 ( )	3.00 ( )	13.30 ( )
1"	4	12,000 ( )	2.50 ( )	15.60 ( )	6.00 ( )	24.10 ( )
1 1/2"	10	30,000 ( )	2.50 ( )	39.00 ( )	15.00 ( )	56.50 ( )
2"	25	75,000 ( )	2.50 ( )	97.50 ( )	37.50 ( )	137.50 ( )

EXAMPLE NO. V - Page 4.

SCHEDULE OF QUARTERLY RATES: (continued)

2. Minimum Charges, quarterly (continued)

Water only customers

Minimum Charge will be the same for each meter size as shown above, but the Sewer Commodity Charge will be excluded.

Sewer only customers

Since these customers are all single family residences, without meters, and the average quarterly consumption of water by residential customers was 18,500 gallons, the Flat Rate Charge per quarter for these customers will be:

Customer Service Charge	\$2.50 ( )
Commodity Charge 18.5 M.G. @ \$0.50 =	<u>9.25</u> ( )
Total quarterly charge	11.75 ( )

3. Bulk Sales Rate G 22

See page 12 for method of calculation and insert the rate here.

4. Service to customers outside Municipality, or L.I.D., limits

The Council of the Municipality may sign agreements with customers for the provision of water and sewer services to properties located outside the legal boundaries of the Municipality. Such agreements shall provide for payment of the appropriate rates as set forth in paragraphs 1 and 2 of this schedule, as well as a surcharge, set by resolution of Council, which shall be equivalent to the frontage levy, and general and special taxes for Utility purposes in effect at the time, or as may be in effect from time to time, and would be levied on the property concerned if it were within these boundaries. In addition, all costs of connecting to the Utility's mains, and installing and maintaining service connections will be paid by the customer.

5. Reconnection Fee G. 25.

A customer who has had his service disconnected for any reason shall not be reconnected until all regulations have been complied with, and all arrears paid, as well as any penalties and a reconnection fee of \$5.00. (This fee is set by the Municipality to cover costs of connection and disconnection.)

EXAMPLE NO. V - Page 5.

6. Billing & Penalties. See G. 23 & 24.

7. Hydrant Rentals. See G. 17.

ESTIMATED ANNUAL REVENUES AND EXPENSES:

REVENUE:

Service Charges - 350 ( ) customers		
@ \$2.50 ( ) by 4 Q.	\$3,500 ( )	
Commodity Charges:		
W & S 26,600 M.G. ( ) @ \$1.80 ( )	47,880 ( )	
W. only - 370 M.G. ( ) @ \$1.30 ( )	481 ( )	
S. only - 5 customers ( ) @ \$11.75 for 4 Q.	235 ( )	
Bulk sales 300 ( ) M.G.@ \$ 2.00 ( )	600 ( )	
Hydrant rentals 17 ( ) @ \$40.00 ( )	<u>680</u> ( )	
Total Revenue	53,376 ( )	
Total Expenses - page 2 & 3	<u>52,100</u> ( )	
Estimated surplus	\$1,276 ( )	

Note: Estimated revenue should exceed estimated expenses.



EXAMPLE NO. VI

THIS MAY BE A SMALL OR LARGE MUNICIPALITY, WITH SOME SERVICES NOT METERED, USUALLY RESIDENTIAL CUSTOMERS, AND OTHER SERVICES METERED. RATE SCHEDULE FOR METERED CUSTOMERS MAY VARY FROM SINGLE RATE IF THERE ARE NO LARGE CUSTOMERS, UP TO 4-STEP RATE IF THERE ARE ONE OR MORE VERY LARGE CUSTOMERS. G. 14.A.

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Rates for metered customers are to be calculated by using EXAMPLE NO. I, II, III, IV, OR V. depending on the rate schedule used for metered customers.

Estimated volume of water used by unmetered customers is calculated as follows:

Total water produced or purchased yearly \_\_\_\_\_ gals.

Deduct:

Water unaccounted for which seems appropriate for the system (see note below)	_____
Water sold to metered customers	_____
Bulk sales	_____
Flushing of sewers	_____
Sales through hydrants (fires, building construction and sales to the Municipality for municipal purposes)	_____
Total deductions	_____
Balance = sales to unmetered customers	_____

Note: It may be possible to establish the water unaccounted for by monitoring the water being used by the System during an early morning period - say for 1 hour or more between 3:00 A.M. to 4:00 A.M. and extending this amount to obtain annual water unaccounted for. Then by adding to this, all known or estimated water consumed, a figure may be arrived at, which will represent annual water sold to unmetered customers. Finally, by establishing the total number of residential equivalent units for these unmetered customers, a figure may be arrived at to represent the water consumption per unit per quarter or whatever term is required.

The volume of water estimated to be sold to each unmetered customer is derived by dividing the gallons of water sold to unmetered customers, as shown above, by total Residential Equivalent Units. G.16.

Quarterly charge per Unit is derived by multiplying the quarterly gallons of water used by each Unit by the Domestic Commodity rate calculated as set forth in the Example which applies, and adding the Customer Service Charge.

Note: In calculating total sales, of course, you will add water sold to unmetered customers, as calculated above, to other water sales set forth in the Example.

EXAMPLE NO. VI - Page 2ANNUAL WATER CONSUMPTION (PER QUARTER)

- (a) No. of 5/8" meters and total consumption through all 5/8" meters.
- (b) Quarterly consumption data for each customer with a meter size larger than 5/8", listing in each case the customer description and meter size.

Note: Estimated revenue should exceed estimated expenses.

EXAMPLE NO. VII

MUNICIPALITY WITH NO METERS. COMMODITY CHARGES ARE BASED ON RESIDENTIAL EQUIVALENT UNITS. SEE EQUIVALENT UNITS. SEE APPENDIX A, PAGE 14.

If the system includes both water and sewer services, and some customers have only one service, or where there is a large volume of bulk sales, Water and sewer commodity rates should be calculated separately. Otherwise only one commodity rate is necessary.

ABBREVIATIONS: C = Contingency Allowance; G, followed by a number = Guideline Item; M.G. = Thousand Gallons; M & O = Maintenance & Operation costs; S = Sewer; Units = Residential Equivalent Units; W = Water.

USE SPACES BELOW ( ) to insert your own data.  
Data for preceding year should be projected for 2 years to allow for increases, e.g., estimate increases in costs, number of likely new customers, and number of additional Units, taking into consideration extra Units chargeable to customers who will use more water than residences. See Appendix A.

CAPITAL COST OF SYSTEM, GROSS; ANNUAL DEBENTURE COST & CONTINGENCY ALLOWANCE.  
G. 4 & G. 5.

	<u>Capital cost</u>		<u>Contingency Allowance</u>	
Water Production & Distribution	\$ 250,000	( )	\$ 2,500	( )
Sewage collection & disposal	<u>200,000</u>	( )	<u>2,000</u>	( )
Total	450,000	( )	4,500	( )
Annual Debenture costs	\$ 36,000	( )		
Recovered by:				
Frontage charges	12,000	( )		
Tax on assessment	24,000	( )		
Rates	-	( )		

UTILITY CASH SURPLUS, accumulated to end of previous year \$4,000 ( )  
" RESERVE FUND, balance at end of previous year \$8,000 ( )

WATER: Produced or purchased 25,000 M.G. ( )  
Less unaccounted for, normally say 10% 2,500 M.G. ( )  
Estimated sales 22,500 M.G. ( )

Note: Percentage of water produced which is unaccounted for should be estimated taking into consideration condition of distribution system.

CUSTOMERS: W & S	265 ( )	Note: If any customers are located outside of Municipality, or L.I.D., show number of customers and Units charged to each. G. 21.
W only	15 ( )	
S only	<u>5 ( )</u>	
Total	285 ( )	

EXAMPLE NO. VII - Page 2.

RESIDENTIAL EQUIVALENT UNITS: (Including as many Units as required)

Units charged To customer	Number of customers	Units charged to all customers		
		Total Units	Units for Water service	Units for Sewer service
* 1	250 ( )	250 ( )	245 ( )	235 ( )
1 1/2	10 ( )	15 ( )	15 ( )	15 ( )
2	8 ( )	16 ( )	16 ( )	16 ( )
3	6 ( )	18 ( )	18 ( )	18 ( )
4	1 ( )	4 ( )	4 ( )	4 ( )
5	1 ( )	5 ( )	5 ( )	5 ( )
6	1 ( )	6 ( )	6 ( )	6 ( )
7	1 ( )	7 ( )	7 ( )	7 ( )
8	1 ( )	8 ( )	8 ( )	8 ( )
9	1 ( )	9 ( )	9 ( )	9 ( )
10	2 ( )	20 ( )	20 ( )	20 ( )
11	1 ( )	11 ( )	11 ( )	11 ( )
12	1 ( )	12 ( )	12 ( )	12 ( )
13	Nil ( )	- ( )	- ( )	- ( )
14	Nil ( )	- ( )	- ( )	- ( )
15	<u>1</u> ( )	15 ( )	<u>15</u> ( )	<u>15</u> ( )
Total	285 ( )	( )	391 ( )	381 ( )

\* Note: Of customers charged 1 Unit, 15 customers use water only, and 5 sewer only. See "customers", page 1 of this example.

In determining number of Units to be charged to each customer, use Appendix A, pages 15 and 16, as a guide, subject to any exceptional circumstances which may exist.

RATE CALCULATIONS:

Based on Operating Expenses and Contingency Allowances. See G. 9. If any debenture costs, or any mandatory appropriations to Utility reserve funds, are to be recovered through rates, these should be included as an expense also. (See G. 4) Hydrant rentals are charged to recover costs of maintaining and replacing hydrants, which are part of the Water Distribution system: these rentals should be deducted from Water costs in calculating rates, as shown below:

Annual Costs	Calculation of Rates	Rates Derived
\$5,000	ADMINISTRATION COSTS. G.2.	Per Quarter
( )	<u>Cost - \$5,000 ( )</u> Customers 285 ( ) by 4 Q.	
	<u>= Customer Service Charge</u>	= \$4.40 ( )

EXAMPLE NO. VII - Page 3.

RATE CALCULATIONS: (Continued)

<u>Annual Costs</u>	<u>Calculation of Rates</u>	<u>Rates Derived</u>
\$27,500 ( )	WATER PRODUCTION & DISTRIBUTION COSTS: G.15.  M & O \$25,000 ( ) + C \$2,500 ( ), Less Hydrant Rentals \$660 ( ) = Net Cost \$26,840 ( ) W. Units 391 ( ) by 4 Q.	
	<u>= W. Rate per Unit per Q.</u>	= \$17.20 ( )
\$10,500 ( )	SEWAGE COLLECTION & DISPOSAL COSTS:  M & O \$8,500 ( ) + C \$2,000 ( ) S. Units 381 ( ) by 4 Q.	
	<u>= S. Rate per Unit per Q.</u>	= \$ 7.00 ( )
\$43,000	Total expenses for rate calculation, excluding debenture charges recovered through taxes.	

BULK SALES RATE:

Calculate cost of W. & S. service per M.G. to connected customers, as follows:

<u>Expenses for rate calculation (above) \$43,000 ( )</u>		
M.G. of Water sold (page 1 of Example) 22,500 ( )		
	= W. & S. rate per M.G.	= \$ 1.90 ( )

Calculate cost of Water service per M.G. as follows:

<u>M &amp; O + C cost: W. \$27,500 ( )</u>		
M & O + C cost: W. \$27,500 + S. \$10,500 ( )		
	= Water rate per M.G.	= \$ 1.40 ( )

Calculate Bulk Rate per M.G. as follows:

Cost for rate calculation \$43,000 ( ),		
Plus debenture cost \$36,000 ( ),	multiply	
<u>Cost for rate calculation \$43,000 ( )</u>		
this result by W. rate per M.G. \$1.40 ( )		
to derive <u>Bulk Sales Rate per M.G.</u>		= \$ 2.60 ( )

ESTIMATED ANNUAL REVENUES & EXPENSES

REVENUE

Service Charges - 285 ( ) customers @ \$4.40 ( ) by 4 Q.	= \$ 5,016	( )
Commodity Charges:		
391 ( ) W. Units @ \$17.20 ( ) by 4 Q.	= \$27,101	( )
381 ( ) S. Units @ \$ 7.00 ( ) by 4 Q.	= 10,668	( )
Bulk water sales - Nil M.G. ( ) @ \$2.60 per M.G.	Nil	( )
Hydrant Rentals: 22 ( ) hydrants @ \$30 ( )	= 660	( )
Total Revenue	43,445	( )
Total Expenses (above)	<u>43,000</u>	( )
Estimated Surplus	445	( )

Note: Estimated revenue should exceed estimated expenses.

SCHEDULE OF QUARTERLY RATES:

This information marked [ ] below gives an indication of the number of Units which may be chargeable to various customer, using the "average" Units set forth in the study shown in Appendix A, pages 15 and 16. This does not take into account any adjustments which may be considered under exceptional circumstances.

1. Flat rates, quarterly, based on Units charged to each customer:

A. Water & Sewer Note: Each customer other than residences should be described by no.

Units	Customer	Service Charge	Commodity Rates		Quarterly Bill
			Water	Sewer	
1	Single family residence; Church; Garage, no wash rack:[Hall up to 250 seats, infrequent use]; Small commercial;	\$4.40 ( )	\$17.20 ( )	\$ 7.00 ( )	\$28.60 ( )
1 1/2	Small store, with 1 ste; Beauty Shop;	4.40 ( )	25.80 ( )	10.50 ( )	\$40.70 ( )
2	Garage, with 1 wash rack; Rink; Bakery, Small; Grocery & Butcher shop: Café, 30 to 50 seats;	4.40 ( )	34.40 ( )	14.00 ( )	52.80 ( )
3	Apt. Bldg., 3 stes;	4.40 ( )	51.60 ( )	21.00 ( )	77.00 ( )
4	Laundromat, with 4 washing machines;	4.40 ( )	68.80 ( )	28.00 ( )	101.20 ( )
5	Hotel or Motel, 10 rooms, no dining or beverage room; Sr. Citizens Home, [8 single rooms, 1 double room];	4.40 ( )	86.80 ( )	35.00 ( )	125.40 ( )
6	Elem. School [6 rooms, 1 shower, 150 to 180 students];	4.40 ( )	103.20 ( )	42.00 ( )	149.60 ( )
7	Laundromat, with 7 washing machines;	4.40 ( )	120.40 ( )	49.00 ( )	173.80 ( )
8	Hotel [8 modern rooms, restaurant, up to 30 seats, beverage room, 40 to 50 seats];	4.40 ( )	137.60 ( )	56.00 ( )	198.00 ( )
9	Sr. Citizens Home, [12 single rooms, 2 double rooms];	4.40 ( )	154.80 ( )	63.00 ( )	222.20 ( )
10	Apt. block, [10 suites];	4.40 ( )	172.00 ( )	70.00 ( )	246.40 ( )

1. Flat rates, quarterly, based on Units charged to each customer:

A. Water & Sewer (continued)

<u>Units</u>	<u>Customer</u>	<u>Service Charge</u>	<u>Commodity Rates</u>		<u>Quarterly Bill</u>
			<u>Water</u>	<u>Sewer</u>	
11	Hotel [10 rooms, 40 restaurant seats, 60 beverage room seats];	4.40 ( )	189.20 ( )	77.00 ( )	270.60 ( )
12	Collegiate [8 rooms, 4 showers, 175 to 225 students];	4.40 ( )	206.40 ( )	84.00 ( )	294.80 ( )
13	No example	4.40 ( )	223.60 ( )	91.00 ( )	319.00 ( )
14	No example	4.40 ( )	240.80 ( )	98.00 ( )	343.20 ( )
15	Hospital [Full service, 10 beds];	4.40 ( )	258.00 ( )	105.00 ( )	367.40 ( )

B. Water only

Quarterly Charge will be the same as in A. above, for customers with the same number of Units allocated, except that the Sewer Commodity charge will be excluded.

C. Sewer only

Quarterly Charge will be the same as in A. above, for customers with the same number of Units allocated, except that the Water Commodity charge will be excluded.

2. Bulk Sales

All water sold in bulk by the Utility will be charged at \$2.60 per M.G. (See Bulk Sales Rate, page 3 of this example), with a minimum charge of \$1.50 per load.

3. Service to customers outside Municipality, or L.I.D., limits

The Council of the Municipality may sign agreements with customers for the provision of water and sewer services to properties located outside the legal boundaries for the Municipality, or Local Improvement District. Such agreements shall provide for payment of the appropriate rates set out in paragraphs 1 of this schedule, as well as a surcharge, set by resolution of Council, which shall be equivalent to the frontage levy and general and special taxes in effect at the time, or as may be in effect from time to time, and would be levied on property concerned if it were within these boundaries. In addition, all costs of connecting to the Utility's mains, and installing and maintaining service connections will be paid by the customer.

4. Reconnection fee. See G. 25

5. Billing and penalties. See G. 23 & 24.

6. Hydrant rentals. See G. 17.

