
Appendix

Water Rate Structure Review

Impact Analysis of Options

Public Workshops
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Options & Variables for Consideration in New Pricing Structure

- I. Background – How fixed/over-head costs are currently allocated
- II. Alternative allocation of fixed/over-head costs - Separation of fixed/OH costs from volume basis by:
 - Account
 - Meter size
- III. Rate Structure Options
 - Single rate
 - Rates by volume blocks
 - Rates by customer class
 - Others?
- IV. Comparison of options with guiding principles

I. Background How key fixed/overhead costs are currently allocated - Example

	<u>Budget</u>	<u>Water Rate</u> <u>(\$ per M3)</u>	<u>%</u>
Total '06 Budget	\$ 610.0 M	1.4541 /m3	100%
as follows:			
Basic Production Cost	<u>\$ 524.5</u>	<u>1.2503</u>	<u>86.0%</u>
1. Wet Weather Flow Mgmt. Prg. (at full roll out)	\$ 50.0	0.1192	8.2%
2. Corporate Overhead (Facilities, legal, etc.)	\$ 22.4	0.0534	3.7%
3. Meter Reading & Billing	<u>\$ 13.1</u>	<u>0.0312</u>	<u>2.1%</u>
Subtotal of 1,2,3	<u>\$ 85.5</u>	<u>0.2038</u>	<u>14.0%</u>
	\$ 610.0 M	1.4541 /m3	100%

Current Contribution to key fixed/overhead Costs (from example)

	Average Household (@ <u>315 m3/y</u>)	Medium Consumer (<u>@250,000 m3/y</u>)	Large Consumer (<u>@1,000,000 m3/y</u>)
Average Bill	\$455.00	\$365,200	\$1,400,000
as follows:			
Basic Production Cost	<u>\$391.23</u>	<u>\$314,012</u>	<u>\$1,203,770</u>
1. Wet Weather Flow Mgmt. Prg. (at full roll out)	\$37.30	\$29,934	\$114,754
2. Corporate Overhead (Facilities, legal, etc.)	\$16.71	\$13,411	\$51,410
3. Meter Reading & Billing	<u>\$9.77</u>	<u>\$7,843</u>	<u>\$30,066</u>
subtotal 1, 2, and 3	<u>\$63.77</u>	<u>\$51,188</u>	<u>\$196,230</u>
	\$455.00	\$365,200	\$1,400,000

II. Alternative allocation of fixed/overhead costs

- a) Apply to all accounts equally
- b) Related to service size
- c) Utility Charge - WWFMP

a) Apply to all account equally (from example)

- 458,505 accounts
- Allocate Corp. OH, meter reading/billing and WWFMP separate from rate
- Results in lower water-only rate
- But, overall higher cost and impact on residential water users
- With resulting lower costs to large water users

Impact on Average Water Bill Residential (from example)

	Current contribution	Fixed overhead contribution	Impact on Water bill	
Basic Production Cost	<u>\$391.23</u>	<u>\$388.14</u>	<u>(\$3.09)</u>	<u>-0.7%</u>
1. Wet Weather Flow Mgmt. Prg. (at full roll out)	\$37.30	\$109.05	\$71.75	16%
2. Corporate Overhead (Facilities, legal, etc.)	\$16.71	\$48.85	\$32.15	7%
3. Meter Reading & Billing	<u>\$9.77</u>	<u>\$28.57</u>	<u>\$18.80</u>	<u>4%</u>
subtotal 1, 2, and 3	<u>\$63.77</u>	<u>\$186.48</u>	<u>\$122.70</u>	<u>27%</u>
	\$455.00	\$574.61	\$119.61	26%

Impact on Average Water Bill Large Consumer (1,000,000 m³/y)

	Current contribution	Fixed overhead contribution	Impact on Water bill	
Basic Production Cost	<u>\$1,203,770</u>	<u>\$1,199,798</u>	<u>(\$3,973)</u>	<u>-0.3%</u>
1. Wet Weather Flow Mgmt. Prg. (at full roll out)	\$114,754	\$109	(\$114,645)	-8.2%
2. Corporate Overhead (Facilities, legal, etc.)	\$51,410	\$49	(\$51,361)	-3.7%
3. Meter Reading & Billing	<u>\$30,066</u>	<u>\$29</u>	<u>(\$30,037)</u>	<u>-2.1%</u>
subtotal 1, 2 and 3	<u>\$196,230</u>	<u>\$186</u>	<u>(\$196,043)</u>	<u>-14%</u>
	\$1,400,000	\$1,199,984	(\$200,016)	-14%

b) Apply to Accounts based on Service Size

- By connection size – avg. residential connection 5/8” up to large consumers with 4” to 10” connections
- Allocate Corp. OH, meter reading/billing and WWFMP separate from rate
- Results in lower water-only rate
- But, overall small increases in cost and impact on residential water users
- With resulting lower costs to large water users

b) Related to Service Size

(One Example of Methodology Only)

Allocation of Charges (based on avg. consump)

Serv. Size	No. Acts.	Average consumption	Meter Reading	Corporate Overhead	WWFMP	Possible Total Fixed Charge
5/8"	334,725	319	\$ 11	\$ 19	\$ 42	\$ 73
3/4"	23,052	538	\$ 19	\$ 32	\$ 72	\$ 122
1"	14,302	1,116	\$ 39	\$ 67	\$ 149	\$ 254
1 1/4"	258	2,343	\$ 82	\$ 140	\$ 312	\$ 533
1 1/2"	5,020	3,892	\$ 136	\$ 232	\$ 518	\$ 886
2"	6,508	8,674	\$ 303	\$ 517	\$ 1,155	\$ 1,975
3"	2,272	32,339	\$ 1,128	\$ 1,929	\$ 4,305	\$ 7,362
4"	1,110	47,275	\$ 1,649	\$ 2,819	\$ 6,293	\$ 10,762
6"	383	68,758	\$ 2,398	\$ 4,101	\$ 9,153	\$ 15,652
8"	83	105,924	\$ 3,694	\$ 6,317	\$ 14,101	\$ 24,113
10"	23	120,395	\$ 4,199	\$ 7,180	\$ 16,027	\$ 27,407
		Total Recovery	\$13.1M ¹⁰	\$22.4 M	\$50 M	\$85.5 M

Impact on Average Water Bill Residential – Using Service Size

(From example)

	Current contribution	Service Size contribution	Impact on Water bill	
Basic Production Cost	<u>\$391.23</u>	<u>\$388.14</u>	<u>(\$3.09)</u>	<u>-0.7%</u>
1. Wet Weather Flow Mgmt. Prg. (at full roll out)	<u>\$37.30</u>	<u>\$42.48</u>	<u>\$5.18</u>	<u>1.1%</u>
2. Corporate Overhead (Facilities, legal, etc.)	\$16.71	\$19.03	\$2.32	0.5
3. Meter Reading & Billing	<u>\$9.77</u>	<u>\$11.13</u>	<u>\$1.36</u>	<u>0.3%</u>
subtotal 1, 2, and 3	<u>\$63.77</u>	<u>\$72.63</u>	<u>\$8.86</u>	<u>1.9%</u>
	\$455.00	\$460.77	\$5.77	1.3%

Impact on Average Water Bill Large Consumer (1,000,000 m³/y)

(From example)

	Current contribution	Service Size contribution	Impact on Water bill	
Basic Production Cost	<u>\$1,203,770</u>	<u>\$1,199,798</u>	<u>(\$3,973)</u>	<u>-0.3%</u>
1. Wet Weather Flow Mgmt. Prg. (at full roll out)	\$114,754	\$16,027	(\$98,727)	-7.1%
2. Corporate Overhead (Facilities, legal, etc.)	\$51,410	\$7,180	(\$44,230)	-3.2%
3. Meter Reading & Billing	<u>\$30,066</u>	<u>\$4,199</u>	<u>(\$25,866)</u>	<u>-1.8%</u>
subtotal 1, 2 and 3	<u>\$196,230</u>	<u>\$27,407</u>	<u>(\$168,823)</u>	<u>-12.1%</u>
	\$1,400,000	\$1,227,204	(\$172,796)	-12.3%

III. Rate Structure Options for Consideration

Option	Fixed/OH cost in rate	Option	Separated Fixed/OH costs
1a	One volume rate - All classes	1b	One volume rate - All classes
2a	Three block volume rate – all classes	2b	Three block volume rate – all classes
3a	One volume rate - All classes - 2 nd block (lower) for Industrial process users	3b	One volume rate - All classes - 2 nd block (lower) for Industrial process users

Option 1a – One Volume Rate

Example of Impacts to various users

- \$1.4541/m³ rate would apply to all consumption

	Current 7 Block <u>Structure</u>	<u>One Rate</u>	<u>Impact</u>	
Avg. Residential (315 m ³)	\$454.01	\$460.95	\$6.94	1.5%
Medium Consumer (250,000 m ³)	\$365,236	\$363,525	\$(1,711)	-0.5%
Large Consumer (1,000,000 m ³)	\$1,403,611	\$1,454,100	\$50,489	3.6%

- Advantage – Simplicity, equity, transparency
- Disadvantage – no recognition of process needs and industrial economic competitiveness

Option 1b – One Volume Rate + Fixed Charge (example of impacts)

➤ \$1.2503/m³ + fixed charge based on service size

	Current 7 Block Structure	One Rate + Fixed Charge		Impact
Avg. Residential (315 m ³)	\$454.01	\$463.24	\$9.23	2.0%
Medium Consumer (250,000 m ³)	\$365,236	\$323,994	\$(41,242)	-11.3%
Large Consumer (1,000,000 m ³)	\$1,403,611	\$1,277,694	\$(125,917)	-9.0%

- Advantage – fairer means of allocating admin/wwfmp costs
- Disadvantage – no recognition of process needs and industrial economic competitiveness

Option 2a – Three-Block Volume Rate Structure

- Lower rate at low volume block (eg. seniors/lone persons)
- Lower rate at high volume block (eg. to help high volume consumers?)
- High rate at middle block

Option 2a – Three-Block Volume Rate Structure (example of one variation)

<u>Block</u>	<u>Rate</u>	<u>Comment</u>
<240 m3	1.4206	Current low volume rate
240-240,000 m3	1.4705	required middle rate
>240,000 m3	1.3845	current high volume rate

	Current 7 Block <u>Structure</u>	<u>Three Blocks</u>	<u>Impact</u>	
Avg. Residential (315 m3)	\$454.01	\$454.17	\$0.16	0.0%
Medium Consumer (250,000 m3)	\$365,236	\$367,110	\$1,874	0.5%
Large Consumer (1,000,000 m3)	\$1,403,611	\$1,405,485	\$1,874	0.1%

Option 2b – Three-Block Volume Rate Structure + Fixed Charge (example of one variation)

Block	Rev'd Rate	
<240 m3	1.1918	+ Fixed Charge based on Service size
240-240,000 m3	1.2417	
>240,000 m3	1.1557	

	Current 7 Block Structure	Three Blocks	Fixed Charge	Total	Impact	
Avg. Residential (315 m3)	\$ 454.01	\$ 381.64	\$ 72.63	\$ 454.27	\$ 0.26	0.1%
Small Consumer (1,000 m3)	\$1,457	\$1,230	\$254	\$1,484	\$26.73	1.8%
Medium Consumer (100,000 m3)	\$ 146,241	\$ 124,159	\$ 24,113	\$ 148,271	\$ 2,030	1.4%
Large Consumer (1,000,000 m3)	\$1,403,611	\$ 1,176,618	\$ 27,407	\$ 1,204,025	\$ (199,586)	-14.2%

Option 2a & 2b

Advantages – Simplification of current structure

Disadvantages

- perpetuates horizontal and vertical inequity between properties
- No clear focus as to who is benefiting

Option 3a – Single Rate all users + 2nd lower block for process water use

- All consumers pay basic volume rate
- 2nd lower block rate available for industrial tax class where water consumption > 6,000 m³/y (500 m³/mo)
- Intent is volume discount targeting industrial manufacturing/process uses, not domestic use (ie. small consumption would likely be domestic uses)

Option 3a – Single Rate all users + 2nd lower block for process water use

Advantages:

- Fair and equitable for all consumers for domestic uses of water (eg. com, ind, MR, and Res)
- Simplicity, transparency
- Encourages/supports water efficiency initiatives
- Promotes economic competitiveness for industrial sector where water is significant cost input
- Focused approach does not result in significant impact on other users (approx. 1-3 cents/m³), while allowing 10-30% reduction for eligible process users

Option 3a – Single Rate all users + 2nd lower block for process water use

Approach:

- Current average water rate \$1.4541 m3

	Block 1	Block 2
Eligibility	All Consumers	Industrial Tax Class, block 2 applies to volumes above 6,000 m3
% reduction for block 2		
If 10%	\$1.4642	\$1.3087
If 20%	\$1.4744	\$1.1633
If 30%	\$1.4845	\$1.0179

Option 3a – Single Rate all users + 2nd lower block for process water use

Example of Impacts

- Impacts at a 20% reduction for industrial process use > 6,000 m3:

	Current 7 Block Structure	Option 3a	Impact	
Avg. Residential (315 m3)	\$454.02	\$467.38	\$13.36	2.9%
Small Retail 1,000 m3	\$1,457	\$1,474	\$17.40	1.2%
Com. Or MR. 100,000m3	\$146,241	\$147,440	\$1,199	0.8%
Industrial 100,000m3	\$146,241	\$118,195	(\$28,046)	-19.2%
Large Commercial 250,000 m3	\$365,236	\$368,597	\$3,361	0.9%
Industrial 250,000m3	\$365,236	\$292,688	(\$72,548)	-19.9%
Large Industrial 1,000,000m3	\$1,403,611	\$1,165,152	(\$238,459)	-17.0%

Option 3b – Single Rate all users + 2nd lower block for process water use + Fixed Charge, Example of Impacts

- Impacts at a 20% reduction for industrial process use > 6,000 m3, +Fixed charge based on service size, block 1 @ \$1.2447, block 2 @ \$0.9820 :

	Current 7 Block Structure	Option 3b	Fixed Charge	Impact	
Avg. Residential (315 m3)	\$454.02	\$394.56	\$73.00	\$13.54	3.0%
Small Retail 1,000 m3	\$1,457	\$1,245	\$254	\$42	2.9%
Com. Or MR. 10,000m2	\$14,721	\$12,447	\$1,975	(\$299)	-2.0%
Com. Or MR. 100,000m3	\$146,241	\$124,467	\$10,762	(\$11,012)	-7.5%
Industrial 100,000m3	\$146,241	\$124,467	\$10,762	(\$11,012)	-7.5%
Large Commercial 250,000 m3	\$365,236	\$311,168	\$15,652	(\$38,416)	-10.5%
Industrial 250,000m3	\$365,236	\$247,086	\$15,652	(\$102,498)	-28.1%
Large Industrial 1,000,000m3	\$1,403,611	\$983,618	\$27,407	(\$392,586)	-28.0%

IV. Comparison of Options with Guiding Principles

Guiding Principles to evaluate against:

- 1. rates should be fair and equitable across customer classes, and**
- 2. rates should position the City competitively with the surrounding regions/other jurisdictions in regards to various customer classes, and**
- 3. rates should encourage water use efficiency, and**
- 4. Simplicity & transparency**

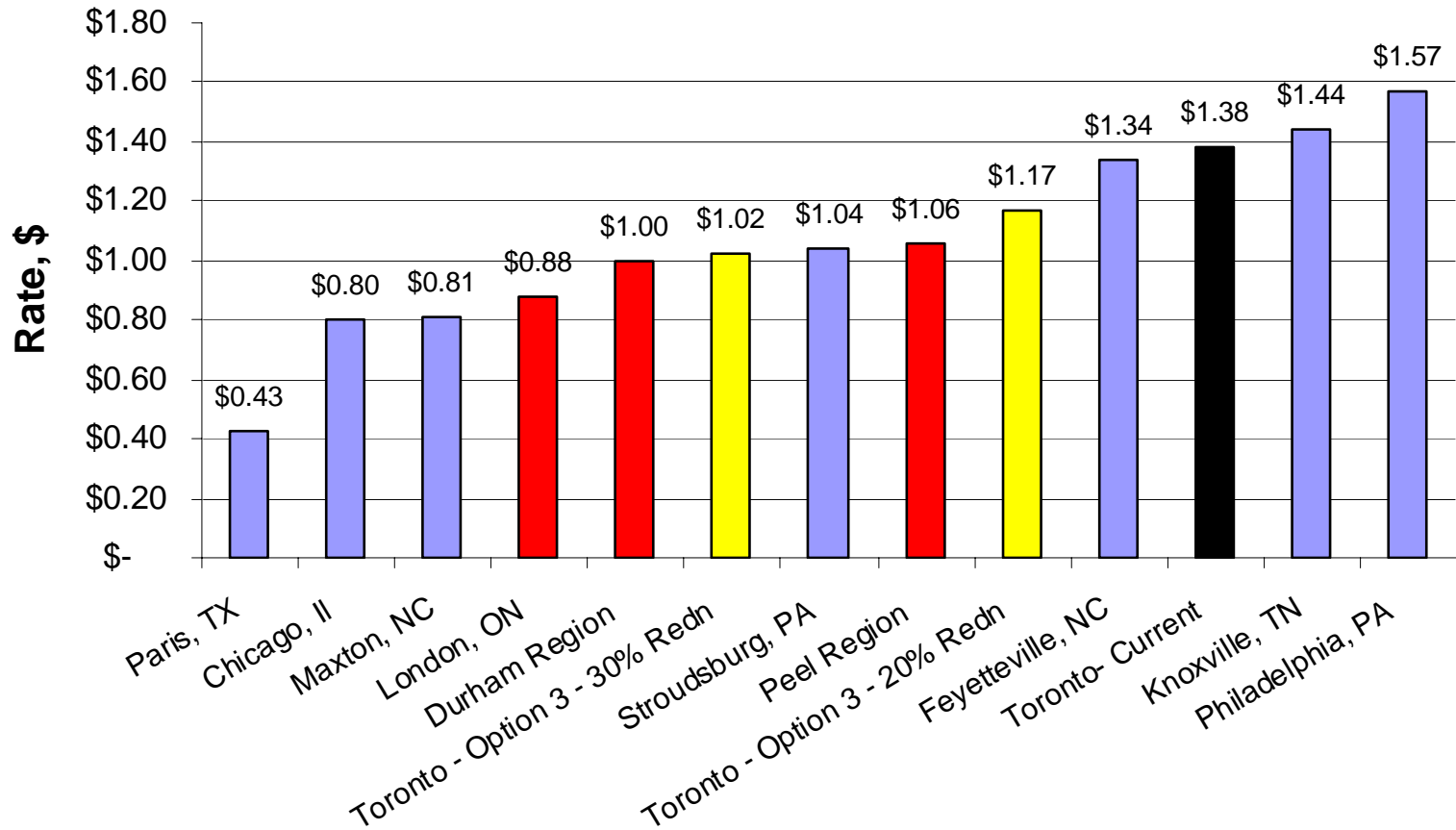
Following Guiding Principles already inherent to all options:

- Rates must ensure sustainability over long-run, and,
- meet regulatory requirements

Summary of Options and Comparison with Guiding Principles :

	Description	Compliant with guiding principles
Option 1	One Volume Rate, all Classes	Yes – simple, transparent, equitable No – Not competitive for high volume users
Option 2	3 Volume Rate Blocks, all Classes	No – simple, transparent, equitable Yes – Not competitive for high volume users
Option 3	One Volume Rate, all Classes; 2 nd available rate for Industrial process uses over 6,000 m ³	Yes – simple, transparent, equitable, competitive for process uses of water

Water Rate Comparison, 2006 With Option 3



\$CDN equivalent cost, \$US converted at \$1.15 CDN

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