

Control Number: 50788



Item Number: 126

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**PUC DOCKET NO. 50788**  
**SOAH DOCKET NO. NO. 73-20-4071.WS**

FILED  
2021 JUN -7 PM 3:19  
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<b>RATEPAYERS APPEAL OF THE</b>	<b>§</b>	<b>BEFORE THE STATE OFFICE</b>
<b>DECISION BY WINDERMERE</b>	<b>§</b>	
<b>OAKS WATER SUPPLY</b>	<b>§</b>	<b>OF</b>
<b>CORPORATION TO CHANGE</b>	<b>§</b>	
<b>WATER AND SEWER RATES</b>	<b>§</b>	<b>ADMINISTRATIVE HEARINGS</b>

**RATEPAYERS ANSWERS TO WINDERMERE OAKS WATER SUPPLY**  
**CORPORATION THIRD REQUEST FOR INFORMATION**

COMES NOW, the Ratepayers Representatives of the Windermere Oaks Water Supply Corporation ("Ratepayers") and files these answers to Windermere Oaks Water Supply Corporation (WOWSC) Third Request for Information which was received on May 19, 2021. Pursuant to 16 Tex. Admin. Code § 22.144(c), a "party upon whom a request is served shall serve a full written response within 20 days after receipt of the request." Twenty days after May 19, 2021 is Monday, June 7, 2021, therefore, the Ratepayers' responses the WOWSC Third Request for Information is timely filed.

Sincerely,

*Josie Fuller*

Josie Fuller  
Ratepayer Representative  
328 Coventry Road  
Spicewood, Texas 78669  
(512) 743-2553  
Ratepayers repjosiefuller@gmail.com

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*Patti Flunker*

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Patti Flunker  
Ratepayer Representative  
307 Coventry Road  
Spicewood, Texas 78669  
(512) 699-1082  
Ratepayers repjosiefuller@gmail.com

## CERTIFICATE OF SERVICE

I certify that, unless otherwise ordered by the presiding officer, notice of the filing of this document was provided to all parties of record via electronic email on June 7, 2021 in accordance with the Order Suspending Rules, issued in Project 50664.

Sincerely,

*Josie Fuller*

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Josie Fuller

*Patti Flunker*

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Patti Flunker

### WOWSC RFI 3.1

Refer to page 8, lines 6-12. Please provide all additional formulas Ms. Flunker alleges that WOWSC used to determine effective rates.

#### Ratepayers Answer

The 2020 TRWA Rate study produced a rate of \$116.68 as provided in WOWSC's answer to PUC Staff's RFI 1-16<sup>1</sup>. The WOWSC's official minutes from February 1, 2020 states;

*TRWA Employee James Smith's analysis supports a WOWSC rate increase of \$65.73 per month. In Mr. Smith's analysis, he only applied an increase to water services and not to both water and waste water services. The analysis shows Water min. charge increase from \$50.95 to \$116.68.<sup>2</sup>*

According to the WOWSC minutes, since James Smith's rate analysis only applied to an increase in a water rates they had to determine what the new wastewater rate would be and therefore would have to provide additional calculations to determine that new rate. But the 2020 rate study clearly shows that year end wastewater expenditures from 2019 was in fact included in the rate study. According to the General Manager for the WOWSC, 60% of the WOWSC service revenue is for water and 40% of the service revenue is for wastewater.<sup>3</sup> It appears the WOWSC then applies this 60/40 rule to the \$116.68 but not by taking 60% of \$116.68 as the new water rate and 40% of \$116.68 for the wastewater rate but applying different calculations to determine the new rates.

As stated in their own minutes from February 1, 2020 their methodology beyond the TRWA rate study subtracts \$116.68 from the old water rate and generates the amount of \$65.73. This is where they decided to apply the 60/40 rule in which they take 60% of \$65.73 and 40% of \$65.73. The WOWSC then take those differences and adds them to the old water and sewer rate to produce the new water and wastewater rates.<sup>4</sup> I do not know how to define this type of rate design.

Prepared by: Josie Fuller and Patti Flunker

Sponsoring Witness: Patti Flunker

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<sup>1</sup> [https://interchange.puc.texas.gov/Documents/50788\\_54\\_1094969.PDF](https://interchange.puc.texas.gov/Documents/50788_54_1094969.PDF) pg. 33

<sup>2</sup> [https://www.wowsc.org/documents/778/2020-02-01\\_WOWSC\\_Annual\\_Board\\_Meeting\\_Minutes\\_Approved.pdf](https://www.wowsc.org/documents/778/2020-02-01_WOWSC_Annual_Board_Meeting_Minutes_Approved.pdf) pg. 2

<sup>3</sup> Id h.ii

<sup>4</sup> [https://www.wowsc.org/documents/778/2020-02-01\\_WOWSC\\_Annual\\_Board\\_Meeting\\_Minutes\\_Approved.pdf](https://www.wowsc.org/documents/778/2020-02-01_WOWSC_Annual_Board_Meeting_Minutes_Approved.pdf) pg. 3

RFI 3.2 Refer to page 6, line 1. Please list WOWSC meetings, other than Executive Session/Closed Session, which were not open to the public.

Ratepayers Answer

See Exhibit A for detailed list

Windermere Oaks Water Supply Corporation is subject to the Texas Open Meetings Act *see* Texas Government Code 551.001 (K)<sup>5</sup>. Tex. Gov't Code, Sec. 551.001 defines a closed meeting as "a meeting to which the public does not have access." and defines an open meeting as "open to the public."<sup>6</sup> Exhibit A is a list of the locations of past WOWSC meetings since 2015 which were held within the gated community of Windermere Oaks. According to WOWSC's agendas most of these meetings were either held at the WOWSC Water Plant Office or at the Windermere Oaks Pavilion, both locations being within the gated community.

The gates to this community constantly remain closed unless they are being repaired. Without a gate code the general public cannot access the Pavilion or the WOWSC Water Plant Office. The gates are maintained by the Windermere Oaks Property Owners Association. Ms. Flunker is the previous president the Windermere Oaks Property Owners Association and does not recollect ever giving gate codes out to the WOWSC for the general public access to attend their board meetings. In fact, the WOWSC has ratepayers that live outside the gated community of Windermere Oaks, this includes at least fifty ratepayers in the Spicewood Airport. Pictures of the gates are attached as Exhibit B & C. In Tex. Att'y Gen. Op. No. JC-0053 (1999) page 5 the Texas Attorney General concluded in this opinion on public access to open board meetings "*We believe Section 551.002 requires that a meeting must be physically accessible to the public*"<sup>7</sup>

Prepared by: Josie Fuller and Patti Flunker

Sponsoring Witness: Patti Flunker

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<sup>5</sup> <https://statutes.capitol.texas.gov/Docs/GV/htm/GV.551.htm>

<sup>6</sup> *id*

<sup>7</sup> <https://www.texasattorneygeneral.gov/sites/default/files/opinion-files/opinion/1999/jc0053.pdf>

WOWSC RFI 3-3      Admit or deny that Patti Flunker has recommended the use of TRWA for assistance on several matters beyond the referenced Wastewater Circuit Rider, as referenced in Ms. Flunker's Testimony at page 5, lines 6-8.

Ratepayers Answer: Admit

Prepared by: Josie Fuller and Patti Flunker

Sponsoring Witness: Patti Flunker

WOWSC RFI 3-4      Question

Admit or deny that Patti Flunker is not a rate study expert.

Ratepayers Answer:    Deny

Prepared by: Patti Flunker

Sponsoring Witness: Patti Flunker



WOWSC RFI 3-5      Refer to page 9, lines 11-14. Ms. Flunker states that WOWSC did not use "rate making methodology." Please provide the definition of this term, and the basis for which an opinion is made relative to this term.

Ratepayer Answer:

To clarify the statement made by Patti Flunker in her testimony on page 9, lines 11-14 Ms. Flunker stated; "did not follow rate making methodology". Notwithstanding, Ms. Flunker as a former paralegal in the utility industry would frequently rely on the American Water Works Association (AWWA) Manuals as the industry standard on guidance related to the general acceptable principles in rate-making methodology. The AWWA Manuals M1, *Water Rates, Fees, and Charges* and Manual M54<sup>8</sup> *Developing Rates for Small Systems* discuss rate-making methods. Specifically, M1 outlines the methodologies and analyses that are used to establish cost-based rates and includes the generally accepted rate-setting methodology which include three analysis; revenue requirement analysis, a cost-of-service analysis and a the rate-design analysis.<sup>9</sup> Furthermore, according to M54 the fundamental steps in rate design analysis starts with tabulating the number of meter accounts and meter sizes by class so as to develop accurate rates.<sup>10</sup> It appears this step was not followed by the WOWSC when developing the water rates as Mr. Nelson's states in his direct testimony that the WOWSC used incorrect number of customers<sup>11</sup> for the rate study.

AWWA M54 also outlines that in a rate design analysis the Rate Affordability criteria to the ratepayers should be a consideration.<sup>12</sup> Ms. Flunker's belief is that this component of the rate design was not considered by the WOWSC when they voted to raise the rates by 71%. M54 states that "regardless of the method to review rate affordability, addressing affordability is one of the key criteria when evaluating the level of rates or the impact of a new rate design to customers."<sup>13</sup> Based on AWWA's manual M1 and M54 on typical practices used in rate making methodologies the WOWSC appears not to follow the standard practice of maintaining accurate records to use the correct number of meters in the rate study and address the impact of affordability to WOWSC ratepayers.

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<sup>8</sup> See Exhibit D, E and F

<sup>9</sup> See Exhibit D

<sup>10</sup> See Exhibit E

<sup>11</sup> [https://interchange.puc.texas.gov/Documents/50788\\_82\\_1115576.PDF](https://interchange.puc.texas.gov/Documents/50788_82_1115576.PDF) bottom of pg. 7 lines 21-23 and top of pg. 8 lines 1-4

<sup>12</sup> See exhibit F

<sup>13</sup> id

**Prepared by: Josie Fuller and Patti Flunker**

**Sponsoring Witness: Patti Flunker**

**Exhibit A**

	<b><u>Agenda and WOWSC Meeting Date</u></b>	<b><u>location of meeting</u></b>	<b><u>Community Gates Open to Gain Access to Meetings from the Public</u></b>
1	<a href="#">WOWSC Open Meeting Agenda 11.14.19 ( PDF / 764 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
2	<a href="#">WOWSC Open Meeting Agenda 10.9.2019 ( PDF / 121 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
3	<a href="#">WOWSC Special Meeting Agenda 09.18.2019 ( PDF / 359 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
4	<a href="#">WOWSC Open meeting agenda 9.4.2019 ( PDF / 357 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
5	<a href="#">WOWSC Open meeting agenda 08.21.2019 ( PDF / 365 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
6	<a href="#">WOWSC Open Meeting Agenda 7.10.2019 ( PDF / 361 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
7	<a href="#">WOWSC Open meeting agenda 6.12.2019 ( PDF / 361 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
8	<a href="#">WOWSC Open Meeting Agenda 5.20.19 ( PDF / 154 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
9	<a href="#">WOWSC Open meeting agenda 5.8.2019.pdf ( PDF / 160 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
10	<a href="#">WOWSC Open Meeting Agenda 4.15.2019 ( PDF / 150 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
11	<a href="#">WOWSC Open Meeting Agenda 03.29.2019 ( DOCX / 17 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
12	<a href="#">WOWSC Open Meeting Agenda 03.14.2019 ( PDF / 107 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
13	<a href="#">WOWSC Open Meeting Agenda 2.26.2019 ( PDF / 705 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
14	<a href="#">WOWSC Open Meeting Agenda 2.9.2019 ( PDF / 445 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
15	<a href="#">WOWSC Open Meeting Agenda 1.28.2019 ( PDF / 409 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
16	<a href="#">WOWSC Open meeting agenda 1.9.2019 ( PDF / 436 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No

17	<a href="#">WOWSC Open meeting agenda 12.04.18 ( PDF / 768 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
18	<a href="#">WOWSC Open meeting agenda 11.14.18 ( PDF / 437 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
19	<a href="#">WOWSC Open meeting agenda 10.10.2018 ( PDF / 78 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
20	<a href="#">WOWSC Open meeting agenda 08.08.2018 ( PDF / 106 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
21	<a href="#">WOWSC Open meeting agenda 08.02.2018 ( PDF / 360 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
22	<a href="#">WOWSC Open meeting agenda 06.05.2018 ( PDF / 438 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
23	<a href="#">WOWSC Open meeting agenda 05.24.2018 ( PDF / 413 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
24	<a href="#">WOWSC Open meeting agenda 05.15.2018 ( PDF / 338 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
25	<a href="#">WOWSC Open meeting agenda 04.16.2018 ( PDF / 143 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
26	<a href="#">WOWSC Open meeting agenda 04.10.2018 ( PDF / 144 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
27	<a href="#">WOWSC Open meeting agenda 03.24.2018 ( PDF / 143 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
28	<a href="#">WOWSC Open meeting agenda 03.20.2018 ( PDF / 145 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
29	<a href="#">WOWSC Open meeting agenda 03.12.2018 ( PDF / 247 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
30	<a href="#">WOWSC Open meeting agenda 03.07.2018 ( PDF / 247 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
31	<a href="#">WOWSC Open meeting agenda 02.24.2018 ( PDF / 75 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No



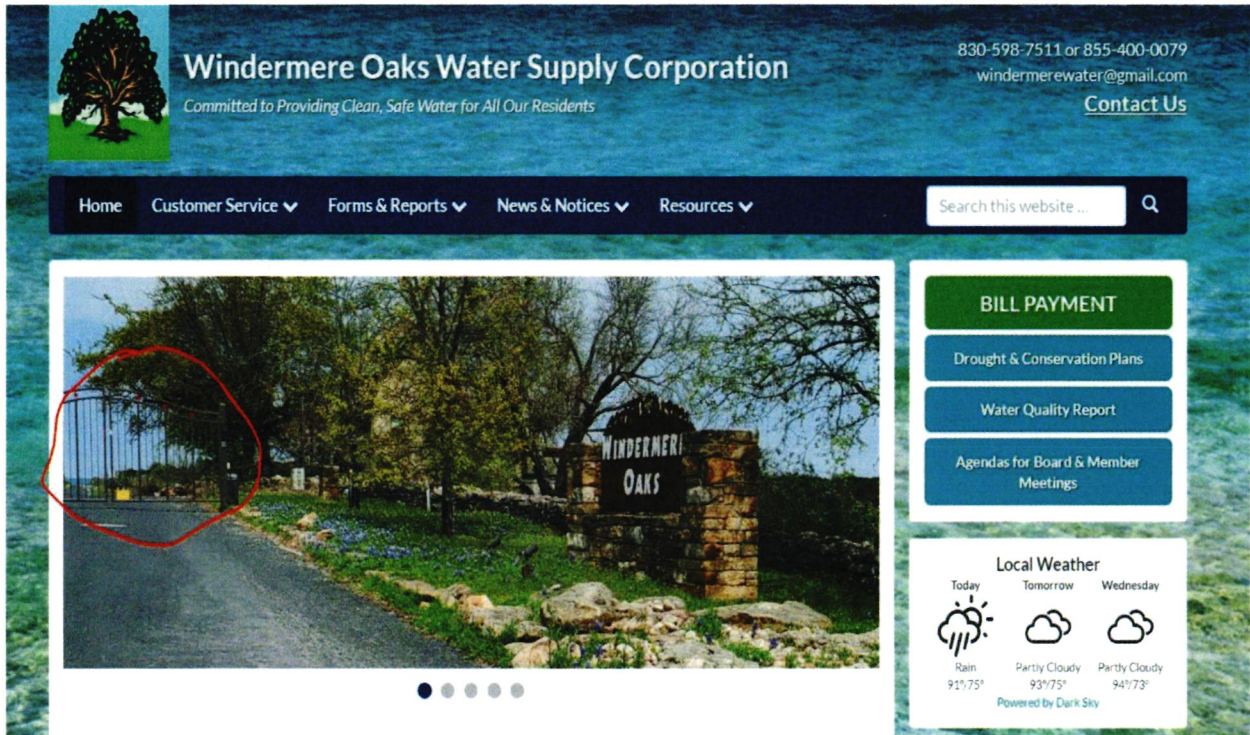
32	<a href="#">WOWSC Open meeting agenda 02.08.2018 ( PDF / 81 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
33	<a href="#">WOWSC Open meeting agenda 01.11.2018 ( PDF / 84 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
34	<a href="#">WOWSC Open Meeting agenda 12.13.2017 ( PDF / 83 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
35	<a href="#">WOWSC Open Meeting agenda 08.30.2017 ( PDF / 79 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
36	<a href="#">WOWSC Open Meeting agenda 05.23.2017 ( PDF / 77 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
37	<a href="#">WOWSC Open Meeting agenda 04.28.2017 ( PDF / 74 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
38	<a href="#">WOWSC Open Meeting agenda 03.11.2017 ( PDF / 78 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
39	<a href="#">WOWSC Open Meeting agenda 01.14.2017 ( PDF / 75 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
40	<a href="#">WOWSC Open Meeting agenda 11.19.2016 ( PDF / 75 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
41	<a href="#">WOWSC Open Meeting agenda 10.15.2016 ( PDF / 75 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
42	<a href="#">WOWSC Open Meeting agenda 08.17.2016 ( PDF / 75 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
43	<a href="#">WOWSC Open Meeting agenda 06.25.2016 ( PDF / 75 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
44	<a href="#">WOWSC Open Meeting agenda 04.30.2016 ( PDF / 56 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
45	<a href="#">WOWSC Open Meeting ANNUAL agenda 04.30.2016 ( PDF / 54 KB )</a>	The Windermere Oaks Property Owners Association Pavilion	No
46	<a href="#">WOWSC Open Meeting agenda 04.25.2016 ( PDF / 75 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
47	<a href="#">WOWSC Open Meeting agenda 4.20.2016 ( PDF / 76 KB )</a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No

48	<a href="#"><u>WOWSC Open Meeting agenda 03.28.2016 ( PDF / 156 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
49	<a href="#"><u>WOWSC Open Meeting agenda 02.22.2016 ( PDF / 75 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
50	<a href="#"><u>WOWSC Open Meeting agenda 01.25.2016 ( PDF / 76 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
51	<a href="#"><u>WOWSC Open Meeting agenda 12.19.2015 ( PDF / 56 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
52	<a href="#"><u>WOWSC Open Meeting agenda 12.07.2015 ( PDF / 75 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
53	<a href="#"><u>WOWSC Open Meeting agenda 10.31.2015 ( PDF / 155 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
54	<a href="#"><u>WOWSC Open Meeting agenda 10.01.2015 ( PDF / 76 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
55	<a href="#"><u>WOWSC Open Meeting agenda 07.16.2015 ( PDF / 75 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
56	<a href="#"><u>WOWSC Open Meeting agenda 05.13.2015 ( PDF / 63 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
57	<a href="#"><u>WOWSC Open Meeting agenda ANNUAL and 2nd meeting 04.25.2015 ( PDF / 796 KB )</u></a>	The Windermere Oaks Property Owners Association Pavilion	No
58	<a href="#"><u>WOWSC Open Meeting agenda 04.06.2015 ( PDF / 56 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
59	<a href="#"><u>WOWSC Open Meeting agenda 03.16.2015 ( PDF / 56 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
60	<a href="#"><u>WOWSC Open Meeting agenda 03.07.2015 ( PDF / 56 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
61	<a href="#"><u>WOWSC Open Meeting agenda 02.02.2015 ( PDF / 56 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No
62	<a href="#"><u>WOWSC Open Meeting agenda 01.17.2015 ( PDF / 57 KB )</u></a>	WOWSC Water Plant office 424 Coventry Spicewood, Texas 78669	No



## EXHIBIT B

Gate into the Windermere Community – requires gate code for the general public to attend WOWSC board meetings.



## EXHIBIT C

Gate into the Spicewood Airport – where are at least 50 plus ratepayers



Leaving the airport – requires gate code to gain access to WOWSC water plant and pavilion





public outreach and communication, and the legal environment as it may relate to setting rates, fees, and charges.

## OBJECTIVES OF COST-BASED RATE-MAKING

Water rates developed using the methodologies discussed in this manual, when appropriately applied, are generally considered to be fair and equitable because these rate-setting methodologies result in cost-based rates that generate revenue from each class of customer in proportion to the cost to serve each class of customer. Water rates are considered fair and equitable when each customer class pays the costs allocated to the class and, consequently, cross-class subsidies are avoided.

While recovery of the full revenue requirement in a fair and equitable manner is a key objective of a utility using a cost-of-service rate-making process, it is often not the only objective. The following list contains the typical objectives in establishing cost-based rates (Bonbright, Daniels, and Kamerschen 1988):

- Effectiveness in yielding total revenue requirements (full cost recovery)
- Revenue stability and predictability
- Stability and predictability of the rates themselves from unexpected or adverse changes
- Promotion of efficient resource use (conservation and efficient use)
- Fairness in the apportionment of total costs of service among the different ratepayers
- Avoidance of undue discrimination (subsidies) within the rates
- Dynamic efficiency in responding to changing supply-and-demand patterns
- Freedom from controversies as to proper interpretation of the rates
- Simple and easy to understand
- Simple to administer
- Legal and defensible

## GENERALLY ACCEPTED RATE-SETTING METHODOLOGY

This manual outlines the methodologies and analyses that are used to establish cost-based rates. As displayed in Figure I.1-1, the generally accepted rate-setting methodology includes three categories of technical analysis. The first is the revenue requirement analysis. This analysis examines the utility's operating and capital costs to determine the total revenue requirements and the adequacy of the utility's existing rates. Next, a cost-of-service analysis is used to functionalize, allocate, and equitably distribute the revenue requirements to the various customer classes of service (e.g., residential, commercial) served by the utility. The final technical analysis is the rate-design analysis. It uses the results from the revenue-requirement and cost-of-service analyses to establish cost-based water rates that meet the overall rate-design goals and objectives of the utility.

Sections of this manual have been dedicated to providing detailed discussions of the three types of analysis. Section II of this manual discusses the various technical components of establishing a utility's revenue requirements. Section III discusses the various methodologies that may be used to conduct a cost-of-service analysis. Finally, section IV reviews the various issues and technical considerations in designing water rates.



## IMPORTANCE OF CUSTOMER RECORDS

For the purposes of water rate setting, accurate and detailed customer records are important in the areas of (1) number of customers, (2) metered consumption, (3) billed revenue data, (4) peak-period demand data, and (5) information on public and private fire services. For some utilities, not all of this information is readily accessible or even available. The example illustrated in the balance of this manual is based on the following data:

- Number of customers
- Metered consumption
- Billed revenue

### Number of Customers

As a starting point, most utilities maintain certain standard customer-related statistics. This information typically includes a listing of water utility customers and their billing addresses. Along with this information, most utilities will have details related to the size of each customer's meter and, if multiple rate classes are used, the class for each customer. This type of information does not generally change between billing periods and forms the basis of the customer record. Along with the basic information are other data that generally are updated for each billing period. These include metered consumption data, payment history, and service call history. Data for past billing periods may be available on a monthly/quarterly/semiannual or aggregated year-end basis, depending on the sophistication of the utility billing system and the frequency of billing.

A utility should maintain records regarding the number of water bills it has issued in terms of meter size and customer class. This detailed information is necessary to accurately develop customer-related charges such as a minimum charge (which may include some water usage allowance) or service charge (billing or meter units that do not include a water usage allowance). These base or fixed charges are common to almost every type of alternative rate form and may be significant in terms of providing the water utility a stable source of revenue.

Table 2-1 shows an example tabulation of the number of metered accounts by meter size and by customer class, as well as the number of unmetered accounts by class. As discussed below, this information can represent a year-end accounting, annual average, monthly average, or other billing period. The basis of reporting should be clearly specified in the database so the reporting period is clear to the user.

Within any given water utility, it is common to bill all customers on the same frequency, although billing frequencies may vary by classification of customer. For example, residential accounts may be billed quarterly while other accounts are billed monthly. This variation may be done for a variety of reasons, but the result is that there may not be a one-to-one correspondence between the number of customers within a class and the number of water bills generated. For the example illustrated in this manual, all customers are billed monthly. In Table 2-2 all customers (see Table 2-1) are assumed to have been active and receiving service for each month of the year; as such, the number of accounts multiplied by 12 yields the number of bills shown in Table 2-2. In reality this is rarely the case because customers open and close accounts as they move in and out of a community.

**Calculating number of customers.** The number of customers can be calculated in a variety of ways, depending on the amount of detail available. It is most common to assume that the number of customers is equal to the number of metered and unmetered services.

*End of year.* The end-of-year customer count may be used to determine the number of customers. An advantage with this count is that it reflects the net number of accounts

added throughout the year and, in the absence of a known change in the customer base, forms a reasonable basis for projecting accounts for the coming years. For a smaller utility

AWWA Manual M54

Objectives	Uniform Rate	Decreasing Block Rate	Increasing Block Rate	Seasonal Rate	Flat Rate
Revenue sufficiency	↔	↔	↔	↔	↔
Revenue stability	↑	↑	↓	↓	↑
Simplicity	↑	↓	↓	↔	↑
Ease of administration	↑	↓	↓	↔	↑
Affordability	↔	↔	↔	↔	↓
Resource efficiency	↔	↓	↑	↑	↓
Legal	↔	↔	↔	↔	↔
Cost-of-service based	↔	↔	↔	↔	↔
Fairness	↔	↔	↔	↔	↔

Legend: ↑ = Increase ↔ = Neutral ↓ = Decrease

**Figure 4-2 Example of evaluation**

## OTHER CONSIDERATIONS

There are many other items a utility will want to consider when setting rates. These can include rate goals and objectives as well as possible other charges and fees to recover specific costs. Provided below is a brief discussion of other considerations.

### Rate Affordability

A key concern for utilities when increasing rates is the impact on customers' bills (the affordability of the rates). As rates increase over time, affordability of utility rates is becoming a more sensitive issue. However, defining affordability is not always straightforward.

One of the most common measures of rate affordability is as a percentage of median household income (MHI). Based on criteria in publications from credit rating agencies and government agencies such as the US Environmental Protection Agency and state departments of environmental protection, the range of affordability is typically between 1.5 percent and 2.5 percent of MHI per utility bill (each for both water and wastewater). In other words, each utility bill should not make up more than 1.5 percent–2.5 percent of the MHI of the customer base. However, one shortfall of using MHI is that by definition half of the customers will have a household income below the median and as a result will have a higher percentage of their household income used to pay their utility bill. Another issue is that the MHI does not take into consideration that customers with the lowest household incomes, especially those on fixed or declining incomes, are impacted the most.

Other measures of customer affordability have also been developed by specific utilities for their customers. These other measures can include a demographic review of the utility's customer base and determining the impact on various ranges of customer MHI or discretionary income. Regardless of the method to review rate affordability, addressing affordability is one of the key criteria when evaluating the level of rates or the impact of a new rate design to customers.

One method to address a portion of the affordability issues is through the design of the rates. This can be accomplished through both the fixed and variable charges. As mentioned previously, the fixed charge should be set at a level that reflects a portion of the fixed costs. However, simply reducing the fixed charge may not be the answer as this may have a negative impact on the revenue stability and sufficiency of rates. A variable charge