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Issues: Residential Rate Design
Witness: Martin Hyman
Sponsoring Party: Missouri Department of Economic
Development – Division of Energy
Type of Exhibit: Rebuttal Testimony
Case Nos.: WR-2015-0301 and SR-2015-0302

MISSOURI PUBLIC SERVICE COMMISSION

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2015-0301

CASE NO. SR-2015-0302

REBUTTAL TESTIMONY (RATE DESIGN)

OF

MARTIN R. HYMAN

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DVISION OF ENERGY

Jefferson City, Missouri

February 19, 2016

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

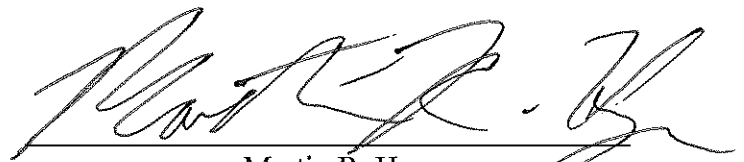
In the Matter of Missouri-American Water Company's)
 Request for Authority to Implement a General Rate) WR-2015-0301
 Increase for Water and Sewer Service Provided in) and SR-2015-0302
 Missouri Service Areas)

AFFIDAVIT OF MARTIN HYMAN

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Martin R. Hyman, of lawful age, being duly sworn on his oath, deposes and states:

1. My name is Martin R. Hyman. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Economic Development as a Planner II, Division of Energy.
2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of the Missouri Department of Economic Development – Division of Energy.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge.



 Martin R. Hyman

Subscribed and sworn to before me this 19th day of February, 2016.



 Notary Public

My commission expires:

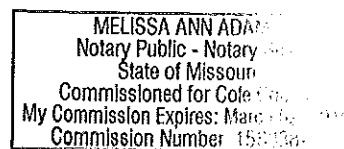


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1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Martin R. Hyman. My business address is 301 West High Street, Suite 720,
4 PO Box 1766, Jefferson City, Missouri 65102.

5 **Q. By whom and in what capacity are you employed?**

6 A. I am employed by the Missouri Department of Economic Development – Division of
7 Energy (“DE”) as a Planner II.

8 **Q. Please describe your educational background and employment experience.**

9 A. In 2011, I graduated from the School of Public and Environmental Affairs at Indiana
10 University in Bloomington with a Master of Public Affairs and a Master of Science in
11 Environmental Science. There, I worked as a graduate assistant, primarily investigating
12 issues surrounding energy-related funding under the American Recovery and
13 Reinvestment Act of 2009. I also worked as a teaching assistant in graduate school and
14 interned at the White House Council on Environmental Quality in the summer of 2011. I
15 began employment with DE in September, 2014. Prior to that, I worked as a contractor
16 for the U.S. Environmental Protection Agency to coordinate intra-agency modeling
17 discussions.

18 **Q. Have you previously filed testimony before the Missouri Public Service Commission**
19 **(“Commission”) in this case?**

20 A. Yes. I filed Direct Revenue Requirement and Direct Rate Design Testimony in this case
21 (WR-2015-0301 and SR-2015-0302).

1 **II. PURPOSE AND SUMMARY OF TESTIMONY**

2 **Q. What is the purpose of your Rebuttal Testimony (Rate Design) in this proceeding?**

3 A. The purpose of my Rebuttal Testimony (Rate Design) is to respond to the Commission
4 Staff's ("Staff") residential water rate design proposal with a bill impact analysis. DE
5 agrees with aspects of the Staff's current residential water rate design proposal based on
6 the generally proposed reduction in residential customer charges and the transition of the
7 remaining districts with declining residential class block rates to uniform volumetric
8 rates.

9 Based on the information currently available, DE has not taken a position on any of the
10 district consolidation proposals in this case. While DE recognizes that there can be
11 benefits associated with consolidation, the justness and reasonableness of the resulting
12 rates, as well as the rate impacts, require additional consideration. To date, Staff and the
13 Missouri-American Water Company ("MAWC" or "Company") have proposed
14 significantly different revenue requirements. In addition, based on discussions during the
15 technical workshop held January 27, 2016, we are aware that there may be revisions to
16 Staff's proposed rates based on adjustments to the billing units used for one of the
17 proposed districts. Revenue requirement is a key factor affecting the level at which rates
18 are set and in determining the impacts of district consolidation. DE recommends that the
19 Commission request scenarios illustrating the bill impacts of the district consolidation
20 proposals in this case under common revenue requirement and billing unit assumptions.

1 I also respond in this testimony to Company witness Paul R. Herbert's Supplemental
2 Testimony,¹ in which he addresses aspects of Staff's "Water Utility Rate Design
3 Analysis."² Although I previously addressed portions of Staff's Analysis in my Direct
4 Rate Design Testimony,³ Mr. Herbert raised several points upon which I wish to provide
5 additional perspective.

6 **Q. What information did you review in preparing this testimony?**

7 A. The information I reviewed included Mr. Herbert's Direct and Supplemental
8 Testimonies, Staff's Water Utility Rate Design Analysis, the Direct Testimony of Staff
9 Witness James A. Busch, Staff's Revenue Requirement Cost of Service Report,⁴ and
10 Staff's Report on Class Cost of Service and Rate Design; I also relied upon the average,
11 high, and low usage scenarios derived from the results of my analysis of the attachments
12 to the Company's response to Data Request DED-DE 1-200 (Highly Confidential).

¹ Missouri Public Service Commission Case Nos. WR-2015-0301 and SR-2015-0302, *In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas*, Supplemental Testimony of Paul R. Herbert on Behalf of Missouri-American Water Company, February 10, 2016.

² Missouri Public Service Commission Case Nos. WR-2015-0301 and SR-2015-0302, *In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas*, Missouri Public Service Commission – Commission Staff Division, Staff's Water Utility Rate Design Analysis, June 16, 2015.

³ Missouri Public Service Commission Case Nos. WR-2015-0301 and SR-2015-0302, *In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas*, Direct Testimony (Rate Design) of Martin R. Hyman on Behalf of the Missouri Department of Economic Development – Division of Energy, January 20, 2016, pages 7-8, lines 6-19 and 1-6.

⁴ Missouri Public Service Commission Case Nos. WR-2015-0301 and SR-2015-0302, *In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas*, Missouri Public Service Commission – Commission Staff Division, Staff Report – Revenue Requirement Cost of Service, December 23, 2015.

1 **III. STAFF’S RESIDENTIAL WATER RATE DESIGN PROPOSAL**

2 **Q. What is Staff’s recommendation regarding water district consolidation?**

3 A. Staff proposes different “hybrid water districts” than those proposed by the Company.

4 Staff’s proposal involves three consolidated water districts:

- 5 1. Water District 1 – St. Louis Metro (St. Louis County, Warren County, and St.
6 Charles), Mexico, Jefferson City, Anna Meadows, Redfield, and Lake Carmel;
- 7 2. Water District 2 – St. Joseph, Platte County, and Brunswick;
- 8 3. Water District 3 – Joplin, Stonebridge, Warrensburg, White Branch, Lake
9 Taneycomo, Lakewood Manor, Rankin Acres, Spring Valley, Tri-States, Emerald
10 Pointe, Maplewood, and Riverside Estates.⁵

11 **Q. What does Staff propose with respect to the residential customer charges in these**
12 **districts?**

13 A. Staff’s proposal with respect to the residential customer charges in these districts is
14 shown in Table 1.

⁵ Missouri Public Service Commission Case Nos. WR-2015-0301 and SR-2015-0302, *In the Matter of Missouri-American Water Company’s Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas*, Direct Testimony of James A. Busch on Behalf of the Missouri Public Service Commission – Commission Staff Division, January 20, 2016, page 9, lines 7-14.

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1 **Table 1. Current residential water customer charges compared to Staff’s proposals.**⁶

Meter Size	Zone	District	Current	Proposed	Change
5/8"	1	St. Louis (Quarterly)	\$21.13	\$17.27	-18.27%
		St. Louis (Monthly)	\$14.42		-23.30%
		Mexico	\$13.35	\$11.06	-17.15%
		Jefferson City	\$17.30		-36.07%
	2	St. Joseph	\$10.65	\$10.57	-0.75%
		Platte County	\$15.47		-31.67%
		Brunswick	\$22.06		-52.09%
	3	Joplin	\$18.53	\$9.32	-49.70%
		Maplewood, Riverside, and Stonebridge	\$22.06		-57.75%
		Warrensburg	\$11.73		-20.55%
		Spring Valley and Lakewood Manor	\$22.06		-57.75%
		Lake Taneycomo	\$22.06		-57.75%
		Tri-States	\$7.45		25.10%
		Emerald Pointe	\$11.07		-15.81%
3/4"	1	St. Louis (Quarterly)	\$26.16	\$19.11	-26.95%
		St. Louis (Monthly)	\$16.09	\$11.68	-27.41%
		Mexico	\$17.08		-31.62%
	2	St. Joseph	\$13.63	\$11.53	-15.41%
		Warrensburg	\$15.02	\$10.19	-32.16%
	3	Tri-States	\$8.20		24.27%
1"	1	St. Louis (Quarterly)	\$36.29	\$22.11	-39.07%
		St. Louis (Monthly)	\$19.50	\$12.68	-34.97%
		Mexico	\$24.21		-47.62%
		Jefferson City	\$22.20		-42.88%
	2	St. Joseph	\$19.32		\$13.29
		Platte County	\$28.06	-52.64%	
		Brunswick	\$38.48	-65.46%	
	3	Joplin	\$33.61	\$11.87	-64.68%
		Maplewood, Riverside, and Stonebridge	\$38.48		-69.15%
		Warrensburg	\$21.28		-44.22%
		Lake Taneycomo	\$38.48		-69.15%
		Tri-States	\$10.44		13.70%
Emerald Pointe		\$25.52	-53.49%		

⁶ Missouri Public Service Commission Case Nos. WR-2015-0301 and SR-2015-0302, *In the Matter of Missouri-American Water Company’s Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas*, Missouri Public Service Commission – Commission Staff Division, Report on Class Cost of Service and Rate Design (“Staff’s CCOS Report”), January 20, 2016, Schedule 2, pages 2-1, 2-2, and 2-3.

Missouri Public Service Commission Case Nos. WR-2015-0301 and SR-2015-0302, *In the Matter of Missouri-American Water Company’s Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas*, Detail of Test Year Operating Revenues at Present and Proposed Rates – By District For the Test Year Ended December 31, 2014, July 31, 2015, Schedule CAS-12-BRU, page 1, lines 2-14; Schedule CAS-12-JFC, page 1, lines 2-14; Schedule CAS-12-JOP, page 1, lines 2-14; Schedule CAS-12-MRS, page 1, lines 2-14 and 25-31; Schedule CAS-12-MEX, page 1, lines 2-14; Schedule CAS-12-OML, page 1, lines 2-14; Schedule CAS-12-PLW, page 1, lines 2-14; Schedule CAS-12-SVL, page 1, lines 2-14; Schedule CAS-12-SJO, page 1, lines 2-14; Schedule CAS-12-STL, pages 1 and 2, lines 2-15 and 2-15; Schedule CAS-12-TRI, page 1, lines 2-14; Schedule CAS-12-WAR, page 1, lines 2-14.

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Meter Size	Zone	District	Current	Proposed	Change
1-1/2"	1	St. Louis (Quarterly)	\$61.49	\$34.50	-43.89%
		St. Louis (Monthly)	\$27.88	\$16.80	-39.74%
		Jefferson City	\$30.38		-44.70%
	2	St. Joseph	\$33.61	\$20.21	-39.87%
		Platte County	\$48.76		-58.55%
	3	Joplin	\$58.45	\$18.34	-68.62%
2"	1	St. Louis (Quarterly)	\$91.73	\$40.87	-55.45%
		St. Louis (Monthly)	\$37.95		-50.12%
		Mexico	\$63.56	\$18.93	-70.22%
		Jefferson City	\$40.17		-52.88%
	2	St. Joseph	\$50.73	\$24.06	-52.57%
		Platte County	\$73.65		-67.33%
	3	Joplin	\$88.24	\$22.07	-74.99%
		Warrensburg	\$55.84		-60.48%
		Tri-States	\$21.62		2.08%
		Emerald Pointe	\$78.53		-71.90%
3"	1	St. Louis (Quarterly)	\$172.50	\$133.63	-22.53%
		St. Louis (Monthly)	\$64.87	\$49.85	-23.15%
	2	St. Joseph	\$90.69	\$73.17	-19.32%
4"	1	St. Louis (Quarterly)	\$263.32	\$197.57	-24.97%
		St. Louis (Monthly)	\$95.12	\$71.16	-25.19%
6"		St. Louis (Quarterly)	\$515.59	\$319.55	-38.02%
		St. Louis (Monthly)	\$179.24	\$111.82	-37.61%
8"		St. Louis (Quarterly)	\$818.32	\$725.62	-11.33%
		St. Louis (Monthly)	\$280.14	\$247.18	-11.77%
10"		St. Louis (Quarterly)	\$1,221.94	\$931.36	-23.78%
		St. Louis (Monthly)	\$414.69	\$315.76	-23.86%

1 The nomenclature in this table and throughout this testimony reflects that used in my
 2 Direct Rate Design Testimony. However, it should be noted that Staff's nomenclature
 3 varies slightly from that used by the Company. As per my Direct Rate Design Testimony,
 4 this table only includes those districts for which meter billings exist or are anticipated,
 5 and flat rate districts (Rankin Acres, White Branch, and Anna Meadows) are excluded.

6 **Q. What do you observe?**

7 A. At Staff's proposed revenue requirement and Staff's district consolidation and rate design
 8 proposals, the customer charges in all of the current districts listed above would decrease,
 9 except in Tri-States.

1 **Q. Is DE generally supportive of Staff's customer charge proposals?**

2 A. Under Staff's proposed revenue requirement, district consolidation, and rate design, yes.
3 A high customer charge reduces the incentive to use water efficiently and inequitably
4 leads to higher bills for low use customers.

5 **Q. What is Staff's volumetric rate structure proposal?**

6 A. Staff proposes a uniform volumetric rate structure for residential customers in all of its
7 districts. For non-residential customers in Water Districts 2 and 3, Staff proposes to
8 continue a declining block rate structure.⁷

9 **Q. Do you agree with the type of rate structure proposed by Staff for residential**
10 **customers?**

11 A. Yes. A uniform volumetric rate encourages efficient use more than a declining block rate.
12 Additionally, the transition to uniform volumetric rates produces less rate shock than a
13 sudden transition to inclining block rates; uniform volumetric rates are also simple to
14 implement and can be equitable when applied to customer groups with relatively
15 homogeneous usages. However, DE supports the consideration of a transition to inclining
16 block rates for residential water customers in subsequent cases.

17 **Q. What volumetric charges does Staff propose?**

18 A. Staff's proposed volumetric charges are shown in Table 2.

⁷ Staff's CCOS Report, page 6.

1 **Table 2. Current residential water volumetric charges compared to Staff’s proposals.**⁸

Zone	District	Current	Proposed	Change	
1	St. Louis	\$0.34447	\$0.41710	21.08%	
	Mexico	\$0.68929		-39.49%	
	Jefferson City	\$0.57140		-27.00%	
2	St. Joseph	\$0.49115	\$0.32942	-32.93%	
	Platte County	Block 1		\$0.77731	-57.62%
		Block 2		\$0.47700	-30.94%
	Brunswick	Block 1		\$1.08500	-69.64%
		Block 2		\$0.75000	-56.08%
3	Joplin	\$0.41838	\$0.45827	9.53%	
	Maplewood, Riverside, and Stonebridge	\$0.23700		93.36%	
	Warrensburg	\$0.35833		27.89%	
	Spring Valley and Lakewood Manor	\$1.08500		-57.76%	
	Lake Taneycomo	\$0.85000		-46.09%	
	Tri-States	\$0.31100		47.35%	
	Emerald Pointe	\$0.07100		545.45%	

2 As in my Direct Rate Design Testimony, the table does not include rate blocks in which
 3 customers exhibit no current or anticipated usage under the Company’s accounting
 4 schedules.

5 **Q. What do you observe?**

6 A. At Staff’s proposed revenue requirement and district consolidation, seven of the
 7 Company’s current districts as listed above would experience decreased volumetric
 8 charges, including all of the districts in the Staff’s proposed Water District 2 and all
 9 districts but St. Louis in Staff’s proposed Water District 1. In addition to receiving an
 10 increase to its customer charges, Tri-States would receive an increase to its volumetric

⁸ *Ibid*, Schedule 2, pages 2-1, 2-2, and 2-3.
 Schedule CAS-12-BRU, page 1, lines 16-20; Schedule CAS-12-JFC, page 1, lines 16-20; Schedule CAS-12-JOP,
 page 1, lines 16-20; Schedule CAS-12-MRS, page 1, lines 16-20 and 33-34; Schedule CAS-12-MEX, page 1, lines
 16-20; Schedule CAS-12-OML, page 1, lines 16-20; Schedule CAS-12-PLW, page 1, lines 16-20; Schedule CAS-
 12-SVL, page 1, lines 16-20; Schedule CAS-12-SJO, page 1, lines 16-20; Schedule CAS-12-STL, pages 1 and 2,
 lines 19-20 and 31-32; Schedule CAS-12-TRI, page 1, lines 16-20; Schedule CAS-12-WAR, page 1, lines 16-20.

1 charges. Emerald Pointe would receive a relatively large percentage increase in its
 2 volumetric charge; as noted in my Direct Rate Design Testimony, Emerald Pointe
 3 currently has no first block volumetric charge.⁹

4 **IV. BILL IMPACT ANALYSIS**

5 **Q. What is the basis of your bill impact analysis?**

6 A. In addition to the rates proposed by Staff and the Company’s current rates, my analysis is
 7 based on the results of the bill frequency analysis presented in my Direct Rate Design
 8 Testimony.¹⁰ Specifically, as shown in Table 3 below, I used the average usage amounts
 9 displayed in Table 6 of my Direct Rate Design Testimony, along with the higher and
 10 lower usage amounts at 100 percent above and 50 percent below average use,
 11 respectively.

12 **Table 3. Monthly usage data used in bill impact analysis (100 gallons per month).¹¹**

Zone	Area	Winter Monthly Use (100 Gallons)			Summer Monthly Use (100 Gallons)		
		Average	100% Greater	50% Less	Average	100% Greater	50% Less
1	St. Louis (Monthly)	62.22	124.43	31.11	78.02	156.04	39.01
	St. Louis (Quarterly)	53.96	107.92	26.98	69.83	139.66	34.91
	St. Charles	47.19	94.38	23.60	68.45	136.90	34.22
	Warren County	42.99	85.99	21.50	46.19	92.39	23.10
	St. Joseph	38.54	77.09	19.27	41.03	82.06	20.52
	Joplin	36.14	72.28	18.07	41.86	83.73	20.93
	Warrensburg	37.47	74.94	18.74	49.47	98.94	24.74
	Maplewood, Riverside, Stonebridge	28.50	56.99	14.25	53.72	107.43	26.86
2	Mexico	33.88	67.76	16.94	37.15	74.30	18.57
	Jefferson City	34.71	69.43	17.36	42.29	84.58	21.14
	Platte County	38.77	77.53	19.38	76.88	153.75	38.44
3	Brunswick	24.32	48.63	12.16	24.60	49.21	12.30
	Ozark Mountain and Lake Taneycomo	21.25	42.51	10.63	27.11	54.23	13.56
	Spring Valley and Lakewood Manor	27.92	55.83	13.96	37.27	74.54	18.64

⁹ Hyman Direct (Rate Design), page 16, lines 8-11.

¹⁰ *Ibid*, pages 18-23, lines 12-20, 1-20, 1-23, 1-14, 1, and 1-15.

¹¹ *Ibid*, page 25, line 1.

1 **Q. How did you conduct your analysis?**

2 A. I conducted my analysis in a similar way to how I analyzed the Company's proposed
3 rates, excluding the same districts (Saddlebrooke, Tri-States, and Emerald Pointe) and
4 separating the analyses for St. Charles and Warren County from the St. Louis analysis.
5 My analysis focused on usage at the 5/8" and 3/4" meter sizes, the most common meter
6 sizes for Rate A¹² and the sizes for which I performed a bill frequency analysis.

7 **Q. What were your results?**

8 A. The results for the 5/8" bill impact analysis are shown below in Tables 4a through 4c,
9 while the results for the 3/4" bill impact analysis are shown below in Tables 5a through
10 5c. Note that the results for the St. Louis quarterly bill impacts reflect quarterly bills and
11 are not normalized to reflect monthly bills.

¹² Missouri Public Service Commission Case Nos. WR-2015-0301 and SR-2015-0302, *In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas*, Direct Testimony of Paul R. Herbert on Behalf of Missouri-American Water Company, Schedule C, page II-21, columns 1 and 3.

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1 **Table 4a. Residential bill impacts at current Company rates, 5/8” meter size.**

Zone	Area	Winter Bill			Summer Bill		
		Average Use	100% Greater Use	50% Less Use	Average Use	100% Greater Use	50% Less Use
1	St. Louis (Monthly)	\$35.85	\$57.28	\$25.14	\$41.29	\$68.17	\$27.86
	St. Louis (Quarterly)	\$76.89	\$132.66	\$49.01	\$93.29	\$165.45	\$57.21
	St. Charles	\$30.68	\$46.93	\$22.55	\$38.00	\$61.58	\$26.21
	Warren County	\$29.23	\$44.04	\$21.82	\$30.33	\$46.24	\$22.38
	Mexico	\$36.70	\$60.06	\$25.03	\$38.96	\$64.56	\$26.15
	Jefferson City	\$37.14	\$56.97	\$27.22	\$41.46	\$65.63	\$29.38
2	St. Joseph	\$29.58	\$48.51	\$20.12	\$30.80	\$50.95	\$20.73
	Platte County	\$45.60	\$75.74	\$30.54	\$75.23	\$134.98	\$45.35
	Brunswick	\$48.44	\$74.83	\$35.25	\$48.75	\$75.45	\$35.41
3	Joplin	\$33.65	\$48.77	\$26.09	\$36.04	\$53.56	\$27.29
	Maplewood, Riverside, Stonebridge	\$28.81	\$35.57	\$25.44	\$34.79	\$47.52	\$28.43
	Warrensburg	\$25.16	\$38.58	\$18.44	\$29.46	\$47.18	\$20.59
	Spring Valley and Lakewood Manor	\$52.35	\$82.64	\$37.20	\$62.50	\$102.94	\$42.28
	Lake Taneycomo	\$40.13	\$58.19	\$31.09	\$45.11	\$68.16	\$33.58

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1 **Table 4b. Residential bill impacts at proposed Staff rates, 5/8” meter size.**

Zone	Area	Winter Bill			Summer Bill		
		Average Use	100% Greater Use	50% Less Use	Average Use	100% Greater Use	50% Less Use
1	St. Louis (Monthly)	\$37.01	\$62.96	\$24.04	\$43.60	\$76.14	\$27.33
	St. Louis (Quarterly)	\$84.79	\$152.31	\$51.03	\$104.65	\$192.02	\$60.96
	St. Charles	\$30.74	\$50.43	\$20.90	\$39.61	\$68.16	\$25.34
	Warren County	\$28.99	\$46.92	\$20.03	\$30.33	\$49.59	\$20.69
	Mexico	\$25.19	\$39.32	\$18.13	\$26.56	\$42.05	\$18.81
	Jefferson City	\$25.54	\$40.02	\$18.30	\$28.70	\$46.34	\$19.88
2	St. Joseph	\$23.27	\$35.96	\$16.92	\$24.09	\$37.60	\$17.33
	Platte County	\$23.34	\$36.11	\$16.96	\$35.89	\$61.22	\$23.23
	Brunswick	\$18.58	\$26.59	\$14.58	\$18.67	\$26.78	\$14.62
3	Joplin	\$25.88	\$42.45	\$17.60	\$28.50	\$47.69	\$18.91
	Maplewood, Riverside, Stonebridge	\$22.38	\$35.44	\$15.85	\$33.94	\$58.55	\$21.63
	Warrensburg	\$26.49	\$43.66	\$17.91	\$31.99	\$54.66	\$20.66
	Spring Valley and Lakewood Manor	\$22.11	\$34.91	\$15.72	\$26.40	\$43.48	\$17.86
	Lake Taneycomo	\$19.06	\$28.80	\$14.19	\$21.75	\$34.17	\$15.53

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1 **Table 4c. Comparison of current and proposed rate impacts on residential bills, 5/8” meter size.**

Zone	Area	Winter Bill			Summer Bill		
		Average Use	100% Greater Use	50% Less Use	Average Use	100% Greater Use	50% Less Use
1	St. Louis (Monthly)	3.23%	9.91%	-4.38%	5.59%	11.70%	-1.89%
	St. Louis (Quarterly)	10.27%	14.82%	4.12%	12.17%	16.06%	6.55%
	St. Charles	0.22%	7.45%	-7.30%	4.24%	10.69%	-3.34%
	Warren County	-0.81%	6.55%	-8.24%	-0.02%	7.24%	-7.52%
	Mexico	-31.36%	-34.52%	-27.57%	-31.83%	-34.87%	-28.09%
	Jefferson City	-31.23%	-29.76%	-32.77%	-30.79%	-29.39%	-32.34%
2	St. Joseph	-21.34%	-25.86%	-15.89%	-21.80%	-26.20%	-16.39%
	Platte County	-48.82%	-52.32%	-44.48%	-52.28%	-54.65%	-48.77%
	Brunswick	-61.65%	-64.46%	-58.65%	-61.70%	-64.51%	-58.70%
3	Joplin	-23.08%	-12.97%	-32.54%	-20.92%	-10.96%	-30.69%
	Maplewood, Riverside, Stonebridge	-22.33%	-0.36%	-37.69%	-2.46%	23.21%	-23.91%
	Warrensburg	5.31%	13.17%	-2.91%	8.60%	15.85%	0.30%
	Spring Valley and Lakewood Manor	-57.76%	-57.76%	-57.76%	-57.76%	-57.76%	-57.76%
	Lake Taneycomo	-52.50%	-50.51%	-54.36%	-51.79%	-49.86%	-53.75%

2 **Table 5a. Residential bill impacts at current Company rates, 3/4” meter size.**

Zone	Area	Winter Bill			Summer Bill		
		Average Use	100% Greater Use	50% Less Use	Average Use	100% Greater Use	50% Less Use
1	St. Louis (Monthly)	\$37.52	\$58.95	\$26.81	\$42.96	\$69.84	\$29.53
	St. Louis (Quarterly)	\$81.92	\$137.69	\$54.04	\$98.32	\$170.48	\$62.24
	St. Charles	\$32.35	\$48.60	\$24.22	\$39.67	\$63.25	\$27.88
	Warren County	\$30.90	\$45.71	\$23.49	\$32.00	\$47.91	\$24.05
	Mexico	\$40.43	\$63.79	\$28.76	\$42.69	\$68.29	\$29.88
2	St. Joseph	\$32.56	\$51.49	\$23.10	\$33.78	\$53.93	\$23.71
3	Warrensburg	\$28.45	\$41.87	\$21.73	\$32.75	\$50.47	\$23.88

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1 **Table 5b. Residential bill impacts at proposed Staff rates, 3/4” meter size.**

Zone	Area	Winter Bill			Summer Bill		
		Average Use	100% Greater Use	50% Less Use	Average Use	100% Greater Use	50% Less Use
1	St. Louis (Monthly)	\$37.63	\$63.58	\$24.66	\$44.22	\$76.76	\$27.95
	St. Louis (Quarterly)	\$86.63	\$154.15	\$52.87	\$106.49	\$193.86	\$62.80
	St. Charles	\$31.36	\$51.05	\$21.52	\$40.23	\$68.78	\$25.96
	Warren County	\$29.61	\$47.54	\$20.65	\$30.95	\$50.21	\$21.31
	Mexico	\$25.81	\$39.94	\$18.75	\$27.18	\$42.67	\$19.43
2	St. Joseph	\$24.23	\$36.92	\$17.88	\$25.05	\$38.56	\$18.29
3	Warrensburg	\$27.36	\$44.53	\$18.78	\$32.86	\$55.53	\$21.53

2 **Table 5c. Comparison of current and proposed rate impacts on residential bills, 3/4” meter size.**

Zone	Area	Winter Bill			Summer Bill		
		Average Use	100% Greater Use	50% Less Use	Average Use	100% Greater Use	50% Less Use
1	St. Louis (Monthly)	0.29%	7.85%	-8.02%	2.92%	9.91%	-5.34%
	St. Louis (Quarterly)	5.75%	11.96%	-2.17%	8.30%	13.71%	0.90%
	St. Charles	-3.04%	5.03%	-11.13%	1.42%	8.75%	-6.90%
	Warren County	-4.17%	4.01%	-12.12%	-3.30%	4.80%	-11.36%
	Mexico	-36.16%	-37.38%	-34.81%	-36.34%	-37.52%	-34.99%
2	St. Joseph	-25.59%	-28.29%	-22.59%	-25.86%	-28.50%	-22.85%
3	Warrensburg	-3.81%	6.35%	-13.61%	0.35%	10.02%	-9.87%

1 **Q. What do you observe from these results?**

2 A. In many districts at Staff's proposed revenue requirement, district consolidation, and rate
3 design, customers with average use would experience a bill decrease. This is also true in
4 many cases of customers with below average use. Variation in bill impacts is greatest
5 across the 5/8" meter size; within Staff's second proposed district, no bill increases would
6 occur at the usages analyzed. The highest bill increase would occur for high usage
7 customers in the Maplewood, Riverside, and Stonebridge district at the 5/8" meter size
8 during the summer, while the greatest bill reduction would occur for high usage
9 customers in Brunswick at the 5/8" meter size during the summer.

10 Across both meter sizes, most customers with below average use would often receive a
11 benefit under Staff's proposal. For example, St. Louis customers who are billed on a
12 quarterly basis at the 5/8" meter size would see a 10.27 percent bill increase at average
13 use in winter, but only a 4.12 percent increase at below average use during the winter. By
14 contrast, customers with above average use would many times bear more of any proposed
15 rate increases. For example, St. Louis customers who are billed on a quarterly basis at the
16 5/8" meter size would see a 14.82 percent bill increase at above average use during the
17 winter. These patterns do not hold for Mexico, St. Joseph, Platte County, Brunswick, or
18 the Spring Valley and Lakewood Manor district; however, bills would decrease across all
19 sizes and usages analyzed in these districts. In the Spring Valley and Lakewood Manor
20 district, there is negligible variation in bill impacts by customer usage.

21 **Q. What can you conclude with respect to Staff's rate design proposal?**

22 A. Staff's proposed revenue requirement, district consolidation, and rate design would
23 generally encourage efficient water use by reducing bill impacts to customers with below

1 average use in most districts. While there are districts where such a price signal may not
2 be sent, potential equity concerns in this regard are alleviated by the fact that customers
3 would generally receive bill decreases in such districts. The maximum bill increase
4 (23.21 percent) under Staff's proposal is much lower than that under the Company's
5 proposal (38.26 percent);¹³ however, this could partly be a function of the difference in
6 revenue requirements between the two parties. The wide range of bill impacts between
7 districts under Staff's proposal could also raise equity concerns, depending on the
8 underlying costs of service.

9 **Q. Having performed this bill impact analysis, do you still generally support Staff's**
10 **residential rate design proposal?**

11 A. Under Staff's proposed revenue requirement, district consolidation, and rate design, yes.
12 Staff's proposed district consolidation and rate design at Staff's current revenue
13 requirement would encourage efficient water use in many districts and, because of Staff's
14 use of uniform block rates, would do so in a gradual manner. To the extent that any
15 equity concerns remain, there may be a need to examine specific elements of the
16 proposed rates.

¹³ Hyman Direct (Rate Design), pages 28 and 29, lines 1 and 2.

1 **V. RESPONSE TO PAUL R. HERBERT’S SUPPLEMENTAL TESTIMONY**

2 **Q. To what portions of Staff’s “Water Utility Rate Design Analysis” did Mr. Herbert**
3 **respond in his Supplemental Testimony?**

4 A. Mr. Herbert discussed customer charge increases,¹⁴ corresponding volumetric charge
5 decreases,¹⁵ inclining residential block rates,¹⁶ and “level” (i.e., uniform volumetric)
6 commercial and industrial rates.¹⁷

7 **Q. What were Mr. Herbert’s comments with respect to customer charge increases?**

8 A. Mr. Herbert repeatedly asserts that customer charges should collect not just customer-
9 related costs, but perhaps other fixed costs. For example, he states that, “Customer
10 charges at a minimum should recover the customer costs that the Company incurs to
11 serve each customer” (emphasis his).¹⁸ Fixed costs that Mr. Herbert believes could be
12 included in the customer charge apparently include those that, “... do not vary with the
13 amount of water produced,”¹⁹ such as distribution system-related capital costs.²⁰

14 **Q. Do you agree that customer charges should collect more than customer-related**
15 **costs?**

16 A. No. As discussed at length in my Direct Rate Design Testimony, customer charges in a
17 cost of service rate design should only collect customer-related costs. Such costs should
18 not be conflated with the accounting-related definition of “fixed costs,” but should

¹⁴ Herbert Supplemental, pages 2-4, lines 8-24, 1-24, and 1-15.

¹⁵ *Ibid*, pages 4-5, lines 16-24 and 1-6.

¹⁶ *Ibid*, pages 5-6, lines 8-24 and 1-10.

¹⁷ *Ibid*, pages 6-7, lines 12-24 and 1-19.

¹⁸ *Ibid*, page 2, lines 15-16.

¹⁹ *Ibid*, page 4, lines 14-15.

²⁰ *Ibid*, lines 11-14.

1 include a very limited set of costs such as meter reading, billing, and meter and service
2 line-related costs.²¹

3 **Q. Did Mr. Herbert acknowledge any concerns with a customer charge-focused rate**
4 **design in earlier testimony?**

5 A. Yes. I highlighted in my Direct Rate Design Testimony that Mr. Herbert made an
6 important caveat in his Direct Testimony regarding “straight fixed variable” rate design
7 when he stated that there would be, “... a guarantee of recovering the Company’s fixed
8 costs, however low-use customers would be adversely affected and there would be little
9 incentive for customers to conserve.”²²

10 **Q. What is Mr. Herbert’s response to the concept of a residential inclining block rate**
11 **structure?**

12 A. Mr. Herbert begins his response with the suggestion of a three-tiered structure.²³
13 However, he follows his suggestion by stating that an inclining block rate structure is not
14 required for MAWC, since, “Water supplies are generally sufficient throughout the
15 Company’s service area,” and that a uniform volumetric rate structure would provide
16 appropriate price signals.²⁴

17 **Q. Do you agree that a uniform volumetric rate structure sufficiently encourages**
18 **efficient water use?**

19 A. I agree in part. Compared to the declining residential block rates in use in some of the
20 Company’s districts, a uniform block rate is certainly an improvement from an efficiency

²¹ Hyman Direct (Rate Design), pages 4-6, lines 1-20, 1-20, and 1-5.

²² Herbert Direct, page 20, lines 22-24.

²³ Herbert Supplemental, pages 5-6, lines 18-24 and 1-5.

²⁴ *Ibid*, page 6, lines 6-10.

1 perspective. However, depending on its design, an inclining block rate could encourage
2 even greater efficiency.

3 **Q. Do you agree that there is no need for an inclining block rate structure since there is**
4 **no water shortage in MAWC's service territory?**

5 A. No. The decision over the efficiency of rate design choices should not be limited by
6 considerations of the adequacy of water supplies. Another reason to encourage efficient
7 water use is to promote energy efficiency, as noted in my Direct Rate Design
8 Testimony.²⁵ Additionally, efficient water use can lead to customer savings.

9 **Q. Based on your response, why should the Company not immediately move to**
10 **inclining block rates for residential customers?**

11 A. A transition to uniform block rates improves the price signal sent by MAWC's rates in a
12 more gradual manner – and avoids rate shock – in contrast to an immediate shift to
13 inclining block rates. However, the Company should be required to consider the
14 implementation of residential inclining block rates in subsequent cases.

15 **VI. CONCLUSIONS**

16 **Q. Please summarize your conclusions and the positions of DE.**

17 A. At Staff's proposed revenue requirement and district consolidation, Staff's proposed
18 residential rate design generally decreases customer charges and institutes uniform block
19 charges. The design would therefore send price signals which would appropriately
20 encourage efficient water use in most districts, as shown in my bill impact analysis. At
21 Staff's proposed revenue requirement and district consolidation, DE generally supports
22 this rate design from the perspective of efficiency and gradualism, and encourages

²⁵ Hyman Direct (Rate Design), pages 2-3, lines 19-21 and 1-3.

1 adjustments to the specifically proposed rates in order to address outstanding equity
2 concerns. Based on the information currently available, DE has not taken a position on
3 any of the district consolidation proposals in this case, since revenue requirement is a key
4 factor affecting the level at which rates are set and in determining the impacts of district
5 consolidation. DE recommends that the Commission request scenarios illustrating the bill
6 impacts of the district consolidation proposals in this case in this case under common
7 revenue requirement and billing unit assumptions.

8 I also addressed Mr. Herbert's response to portions of Staff's "Water Utility Rate Design
9 Analysis." His analysis overemphasizes the use of customer charges at the expense of
10 efficiency gains.

11 **Q. Does this conclude your Rebuttal Testimony (Rate Design) in this case?**

12 **A. Yes.**