STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

IN THE MATTER OF THE PETITION OF THE TOWN OF CHANDLER, INDIANA, FOR APPROVAL OF A NEW SCHEDULE OF RATES AND CHARGES FOR WATER UTILITY SERVICE AND FOR AUTHORITY TO ISSUE REVENUE BONDS TO PROVIDE FUNDS FOR THE COSTS OF THE ACQUISITION AND INSTALLATION OF IMPROVEMENTS AND EXTENSIONS TO THE WATERWORKS OF THE TOWN	)	**CAUSE NO. 45062**

TESTIMONY

OF

EDWARD R. KAUFMAN, CRRA - PUBLIC'S EXHIBIT NO. 3

ON BEHALF OF THE

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

August 10, 2018

Respectfully Submitted,

Daniel M. Le Vay, Atty. No.22184-49
Deputy Consumer Counselor

CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing ***Office of Utility Consumer Counselor Testimony of Edward R. Kaufman, CRRA*** has been served upon the following counsel of record in the captioned proceeding by electronic service on August 10, 2018.

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TESTIMONY OF OUCC WITNESS EDWARD R. KAUFMAN, CRRA
CAUSE NO. 45062
TOWN OF CHANDLER

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is Edward R. Kaufman, and my business address is 115 W. Washington St., Suite 1500 South, Indianapolis, IN 46204

Q: By whom are you employed and in what capacity?

A: I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC") as the Assistant Director with the Water-Wastewater Division. My qualifications and experience are set forth in Appendix A.

Q: What is the purpose of your testimony?

A: I discuss the City of Chandler's ("Petitioner" or "Chandler") request for authority to issue $29,294,000 of long term debt. I have recalculated an annual debt service based on a $24,075,000 loan. Schedule ERK-1 lists the items and amounts that the OUCC believes should be financed with long term debt. In addition, I recommend the Commission approve certain adjustments to Petitioner's proposed debt issuance and impose some reporting requirements. I recommend placing restrictions on Petitioner's debt service reserve to ensure the funds are available as needed.

Q: Do you have schedules and attachments?

A: Yes. Appendix B lists my schedules.

II. PETITIONER'S DEBT ISSUANCE

A. Introduction

Q: Please describe Petitioner's proposed debt issuance as set forth in its case.

A: Petitioner proposes to borrow $29,294,000 from the Indiana Drinking Water State Revolving Fund ("SRF"). Petitioner's proposed bonds assume semi-annual interest payments and principal payments, a 35 year term and a 2.75% interest rate. The estimated annual debt service on Petitioner's proposed debt issuance (rounded) is $945,210. However, Petitioner appears to be wrapping its proposed debt issuance around current debt payments. In 2031, the annual payment on Petitioner's proposed debt increases to approximately $1,621,500.

Q: Does the OUCC accept Petitioner's proposed borrowing?

A: No. OUCC witness James Parks proposes reductions to Petitioner's estimated borrowing costs. Petitioner's estimated construction costs include a 20% contingency. Mr. Parks recommends a 10.0% contingency for Petitioner's estimated construction costs. Next, while Petitioner estimated engineering costs equal to 30% of the estimated construction costs, Mr. Parks estimated engineering costs of 15.0%. Based on Mr. Parks' recommendations I reduced the amount of Petitioner's proposed debt issuance to $24,075,000.

B. Adjustments to Petitioner's Proposed Debt Issuance

Q: Please explain how you calculated Petitioner's total debt.

A: Each of Petitioner's proposed construction projects includes 20% for contingencies. Mr. Parks recommends reducing contingencies to 10%. To calculate a revised project cost with a 10% contingency, I divided the cost of each project by 1.20 to remove Petitioner's estimated 20% contingency costs. This provides a cost before contingencies or net project cost. Then I multiplied the net project cost by 1.10 to add back the cost of a 10% contingency. My Schedule ERK-1, provides the adjusted cost of each of Petitioner's proposed projects with a 10% contingency. This change reduces Petitioner's estimated construction costs from $21,188,000 to $19,423,333. Next, I added engineering costs equal to 15% of construction costs (vs. Petitioner's 30%). Reducing the engineering costs to 15% of construction costs decreases engineering costs from $6,357,000 to $2,913,350.[1]

C. <u>Total Debt Costs</u>

Q: Did you make any other adjustments to derive your estimated total debt issuance for Petitioner?

A: Yes. I reduced "General project contingencies and rounding" costs from $23,000 to $13,317. Based on the OUCC's proposed adjustments, the "Total Estimated Construction" cost is $19,422,333 and the "Total Estimated Non-Construction Cost" is $4,652,667. The OUCC's "Total Estimated Project costs" is $25,075,000.

D. <u>Interest Rates</u>

Q: Does your amortization schedule for Petitioner's proposed debt use the same interest rates that Petitioner used in its analysis?

A: No. According to page 10 of his direct testimony, Petitioner's witness Scott Miller adds 45 basis points onto SRF's current interest rates to account for interest rate risk until the bonds close. I believe such a large adder is unnecessary, and I have used a 20 basis point adder.

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[1] Because construction costs have been reduced, and engineering costs are a percentage of construction costs, engineering costs are reduced by more than 50%.

E. Annual Cost of Debt Service

Q: Based on your adjustments to Petitioner's proposed debt, what is the OUCC's estimated annual debt service costs?

A: From 2019 through 2030, Petitioner's proposed semi-annual principal payments range from $65,000 to $87,000. In 2031, its semi-annual principal payment increases to $435,000 and continues to increase throughout the life of the loan to $800,000.[2] The OUCC's proposed adjustments reduce the Petitioner's proposed loan by $5,219,000 to $24,075,000. To create a revised amortization schedule, I reduced principal payments so they total $24,075,000. However, I did not reduce any of the principal payments that would take place before 2031.

Based on the OUCC's adjustments the five year average annual debt service is $742,600. This is only a $202,550 reduction from Petitioner's proposed annual debt service on its 2018 loan. The reason that a $5.2 million reduction produces such a small change, is because Petitioner wrapped its loan as explained above, and I attempted to maintain its goal of a more level total debt service payment.

III. DEBT TIMING

Q: Will there be a gap between the time Petitioner receives an order in this Cause and when its proposed debt is issued?

A: Yes.

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[2] The large increase in principal payments indicates Petitioner is wrapping its principal payments. In this context the term wrapping is the process of deferring payments on a proposed loan, so that a utility's combined debt service payments are level. Typically the principal payments are deferred until a current loan has been paid off. Then the proposed loan's principal payments are increased. By wrapping its principal payments, it allows Petitioner to maintain a level total debt service payment around both its current and proposed loans.

Q: When would this gap become a material concern?

A: The gap in timing becomes a concern to the OUCC if Petitioner has not issued its proposed debt within two months after it has filed a revised tariff with the Commission in this Cause. Petitioner should reserve any funds collected in rates for its 2018 debt issuances. In the event Petitioner does not or cannot issue its debt within two months of a final order in this Cause, Petitioner should use those funds to offset the amount it needs to borrow. For example, if a Petitioner issues its proposed debt four months after a final order in its cause, over which period it would have collected $25,000 per month for its proposed debt, then it should use the $100,000 (4 * $25,000) it collected to reduce the amount of debt that is issued. This mechanism is a means to match revenues collected for a Petitioner's proposed bonds with its actual bond expense.

IV. TRUE-UP AND OTHER ISSUES

Q: Should Petitioner be required to true-up its proposed annual debt service once the interest rates on its proposed debt are known?

A: Yes. The precise interest rates and annual debt service will not be known until Petitioner's debt is issued; therefore, Petitioner's rates should be trued-up to reflect the actual cost of the debt. I recommend the Commission require Petitioner to file a report within thirty (30) days of closing on its long term debt issuance explaining the terms of the new loan, the amount of debt service reserve and an itemized account of all issuance costs. The report should include a revised tariff, amortization schedule and also calculate the rate impact in a manner similar to the OUCC's schedules.

Q: How should disputes regarding Petitioner's true up report be identified?

A: The OUCC should have fourteen (14) days to challenge Petitioner's proposed true-up. Petitioner should similarly have fourteen (14) days to file a response to the OUCC if it has challenged Petitioner's calculation. Thereafter, the Commission should resolve the issue through a process it considers appropriate.

Q: Should there be any exceptions to your proposed process?

A: Yes. If both parties agree in writing that the increase or decrease would be immaterial, the true-up need not be implemented.

Q: What other conditions should be placed on Petitioner's proposed debt issuance?

A: Unused financing authority should not continue indefinitely. Any unused financing authority should expire 360 days after a final order has been issued in this cause.

Q: Is Petitioner seeking grants for its proposed projects?

A: Yes. On page 8 of Mr. Miller's testimony, he states the following:

> The Town has engaged the services of Ms. Carol Hagedorn with the Economic Development Coalition of Southwest Indiana to investigate the possibility of obtaining any available grants from Warrick County, the State of Indiana, or other sources.
>
> If Petitioner is ultimately awarded any grant funding for the proposed improvements, the amount of the bond issue will be reduced to reflect the additional funding sources.

If Petitioner receives any grant funding (or notice of grant funding), before it files rebuttal testimony, it should file revised schedules and an amortization schedule to reflect the benefit of its grant funding. If Petitioner receives grant funding at a later date, Petitioner should notify the Commission and the OUCC. If grant funding is secured after the close of evidence, the benefits of any grants should be recognized through the true-up process.

V. DEBT SERVICE RESERVE

Q: Do you agree with Petitioner's proposed debt service reserve?

A: No. Petitioner estimates a debt service requirement of $1,622,638 and has a current balance in its debt service reserve of $721,895. Based on Petitioner's proposed loan it has a shortfall of $900,743 that would need to be funded over five years. Petitioner proposes to include $180,149 in rates to fund its debt service reserve.

However, based on the OUCC's proposed adjustments to its proposed issuance and subsequent annual debt service, Petitioner's debt service reserve requirement is $1,422,382 (Schedule ERK 3). Based on the OUCC's calculation, Petitioner has an unfunded reserve of $700,487 ($1,422,382 – $721,895 = $700,487). Funding the shortfall in Petitioner's debt service reserve over five years (based on the OUCC's proposed debt service) requires an annual debt service of $140,097 (700,487 / 5 = $140,097).

Q: Should there be any restrictions on Petitioner's proposed debt service reserve?

A: Yes. Petitioner should notify the Commission and the OUCC if it spends any funds from its debt service reserves for any reason other than to make the last payment on its current or proposed debt issuances. Petitioner should be required to provide a report to the Commission and the OUCC within five (5) business days of said transaction. The report should state how much Petitioner spent from its debt service reserve, explain why it spent funds from its debt service reserve, provide a cite to any applicable loan documents that allow it to spend funds from its debt service reserve, describe its plans to replenish its debt service reserve, and explain any costcutting activities it has implemented to forestall spending funds from its debt service reserve.

VI. OUCC RECOMMENDATIONS

Q: Please state your recommendations.

A: Petitioner should be authorized to issue $24,075,000 in long term debt.

2) I recommend the Commission include the following in its findings:

A. If Petitioner does not issue its proposed debt within two (2) months after it has filed a revised tariff with the Commission, it should temporarily reserve the funds collected in rates for its 2018 debt and use those funds to offset/reduce the amount it borrows.

B. Within thirty (30) days of closing on its long term debt issuance, Petitioner shall file a report with the Commission and serve a copy on the OUCC, explaining the terms of the new loan, including an amortization schedule, the amount of debt service reserve and all issuance costs. The report should include a revised tariff and also calculate the rate impact in a manner similar to the OUCC's schedules. Petitioner's rates should be trued-up, if necessary, to match its actual cost of debt service.

C. If Petitioner spends any of the funds from its debt service reserves for any reason other than to make the last payment on its proposed 2018 debt issuance, Petitioner shall provide a report (as described above) to the Commission and the OUCC within five (5) business days.

Q: Does this conclude your testimony?

A: Yes.

VII. APPENDIX A

QUALIFICATIONS

Q: Please describe your educational background and experience.

A: I graduated from Bentley College in Waltham, Massachusetts with a Bachelors degree in Economics/Finance and an Associates degree in Accounting. Before attending graduate school, I worked as an escheatable property accountant at State Street Bank and Trust Company in Boston, Massachusetts. I was awarded a graduate fellowship to attend Purdue University where I earned a Master of Science degree in Management with a concentration in finance.

I was hired as a Utility Analyst in the OUCC’s Economics and Finance Division in October 1990. My primary areas of responsibility have been in utility finance, utility cost of capital, and regulatory policy. I was promoted to Principal Utility Analyst in August 1993 and to Assistant Chief of Economics and Finance in July 1994. As part of an agency wide reorganization in July 1999, my position was reclassified as Lead Financial Analyst within the Rates/Water/Sewer Division. In October, 2005 I was promoted to Assistant Director of the Water/Wastewater Division. In October 2012, I was promoted to Chief Technical Advisor. I have participated in numerous conferences and seminars regarding utility regulation and financial issues. I was awarded the professional designation of Certified Rate of Return Analyst (“CRRA”) by the Society of Utility and Regulatory Financial Analysts (“SURFA”). This designation is awarded based upon experience and the successful completion of a written examination. In April 2012, I was elected to SURFA’s Board of Directors. I continue to serve on SURFA’s board.

Q: Have you previously testified before the Indiana Utility Regulatory Commission?

A: Yes. I have testified before the Indiana Utility Regulatory Commission ("Commission") in a number of different cases and on numerous issues. I have testified in water, wastewater, natural gas, telecommunication and electric utility cases. While my primary areas of responsibility have been in cost of equity, utility financing, fair value, utility valuation and regulatory policy, I have also provided testimony on trackers, guaranteed performance contracts, declining consumption adjustments, and other issues.

Q: Please describe the review and analysis you conducted to prepare your testimony.

A: I reviewed the Petition, testimony, and exhibits filed by Petitioner in this Cause. I participated in conducting discovery, and reviewed Petitioner's responses.

VIII. APPENDIX B

SCHEDULES AND ATTACHMENTS

Schedule ERK - 1, Calculates the revised project costs, based on the OUCC's adjustments.

Schedule ERK - 2, is an ammonization schedule that calculates the annual debt service on an SRF loan of $24,075,000.

Schedule ERK - 3, Calculates the annual debt service reserve that Petitioner will require to fund its debt service reserve based on an SRF loan of $24,075,000.

Chandler Municipal Water
OUCC Revised Total Project Costs
2018 Debt Issuance

ESTIMATED PROJECT COSTS

Estimated Construction Costs:

Water transmission line	$	12,661,917
Water line replacements downtown	$	5,344,167
Water line Bell Road	$	1,416,250
Total Estimated Construction Costs	$	19,422,333

Estimated Non-Construction Cost:

Engineering (15% construction costs)	$	2,913,350
Land acquisition	$	1,500,000
Bond issuance costs	$	226,000
General project contingencies and rounding	$	13,317
Total Estimated Non-Construction Costs	$	4,652,667
Total Estimated Project Costs	$	24,075,000

Chandler Municipal Water

OUCC Revised

Schedule of Proposed Waterworks Revenue Bonds of 2018

Estimated Amortization Schedule

Assumed issue date Nov 1, 2018

Date	Principal Balance	Principal Payment	Interest Rate	Period Interest	Total Interest	Period Total	Fiscal Total
3/1/2019	$ 24,075,000	$ 65,000	2.50%		$ 177,218.75	$ 242,219	
9/1/2019	$ 24,010,000	$ 65,000	2.50%	$ 812.50	$ 300,125.00	$ 365,125	$ 607,344
3/1/2020	$ 23,945,000	$ 72,000	2.50%	$ 900.00	$ 299,312.50	$ 371,313	
9/1/2020	$ 23,873,000	$ 72,000	2.50%	$ 900.00	$ 298,412.50	$ 370,413	$ 741,725
3/1/2021	$ 23,801,000	$ 74,000	2.50%	$ 925.00	$ 297,512.50	$ 371,513	
9/1/2021	$ 23,727,000	$ 74,000	2.50%	$ 925.00	$ 296,587.50	$ 370,588	$ 742,100
3/1/2022	$ 23,653,000	$ 76,000	2.50%	$ 950.00	$ 295,662.50	$ 371,663	
9/1/2022	$ 23,577,000	$ 77,000	2.50%	$ 962.50	$ 294,712.50	$ 371,713	$ 743,375
3/1/2023	$ 23,500,000	$ 78,000	2.50%	$ 975.00	$ 293,750.00	$ 371,750	
9/1/2023	$ 23,422,000	$ 79,000	2.50%	$ 987.50	$ 292,775.00	$ 371,775	$ 743,525
3/1/2024	$ 23,343,000	$ 80,000	2.50%	$ 1,000.00	$ 291,787.50	$ 371,788	
9/1/2024	$ 23,263,000	$ 80,000	2.50%	$ 1,000.00	$ 290,787.50	$ 370,788	$ 742,575
3/1/2025	$ 23,183,000	$ 84,000	2.50%	$ 1,050.00	$ 289,787.50	$ 373,788	
9/1/2025	$ 23,099,000	$ 84,000	2.50%	$ 1,050.00	$ 288,737.50	$ 372,738	$ 746,525
3/1/2026	$ 23,015,000	$ 86,000	2.50%	$ 1,075.00	$ 287,687.50	$ 373,688	
9/1/2026	$ 22,929,000	$ 87,000	2.50%	$ 1,087.50	$ 286,612.50	$ 373,613	$ 747,300
3/1/2027	$ 22,842,000	$ 65,000	2.50%	$ 812.50	$ 285,525.00	$ 350,525	
9/1/2027	$ 22,777,000	$ 67,000	2.50%	$ 837.50	$ 284,712.50	$ 351,713	$ 702,238
3/1/2028	$ 22,710,000	$ 67,000	2.50%	$ 837.50	$ 283,875.00	$ 350,875	
9/1/2028	$ 22,643,000	$ 69,000	2.50%	$ 862.50	$ 283,037.50	$ 352,038	$ 702,913
3/1/2029	$ 22,574,000	$ 70,000	2.50%	$ 875.00	$ 282,175.00	$ 352,175	
9/1/2029	$ 22,504,000	$ 70,000	2.50%	$ 875.00	$ 281,300.00	$ 351,300	$ 703,475
3/1/2030	$ 22,434,000	$ 72,000	2.50%	$ 900.00	$ 280,425.00	$ 352,425	
9/1/2030	$ 22,362,000	$ 72,000	2.50%	$ 900.00	$ 279,525.00	$ 351,525	$ 703,950
3/1/2031	$ 22,290,000	$ 350,000	2.50%	$ 4,375.00	$ 278,625.00	$ 628,625	
9/1/2031	$ 21,940,000	$ 355,000	2.50%	$ 4,437.50	$ 274,250.00	$ 629,250	$ 1,257,875
3/1/2032	$ 21,585,000	$ 360,000	2.50%	$ 4,500.00	$ 269,812.50	$ 629,813	
9/1/2032	$ 21,225,000	$ 365,000	2.50%	$ 4,562.50	$ 265,312.50	$ 630,313	$ 1,260,125
3/1/2033	$ 20,860,000	$ 370,000	2.50%	$ 4,625.00	$ 260,750.00	$ 630,750	
9/1/2033	$ 20,490,000	$ 380,000	2.50%	$ 4,750.00	$ 256,125.00	$ 636,125	$ 1,266,875
3/1/2034	$ 20,110,000	$ 385,000	2.50%	$ 4,812.50	$ 251,375.00	$ 636,375	
9/1/2034	$ 19,725,000	$ 390,000	2.50%	$ 4,875.00	$ 246,562.50	$ 636,563	$ 1,272,938
3/1/2035	$ 19,335,000	$ 395,000	2.50%	$ 4,937.50	$ 241,687.50	$ 636,688	
9/1/2035	$ 18,940,000	$ 400,000	2.50%	$ 5,000.00	$ 236,750.00	$ 636,750	$ 1,273,438
3/1/2036	$ 18,540,000	$ 405,000	2.50%	$ 5,062.50	$ 231,750.00	$ 636,750	
9/1/2036	$ 18,135,000	$ 410,000	2.50%	$ 5,125.00	$ 226,687.50	$ 636,688	$ 1,273,438
3/1/2037	$ 17,725,000	$ 415,000	2.50%	$ 5,187.50	$ 221,562.50	$ 636,563	
9/1/2037	$ 17,310,000	$ 420,000	2.50%	$ 5,250.00	$ 216,375.00	$ 636,375	$ 1,272,938
3/1/2038	$ 16,890,000	$ 425,000	2.50%	$ 5,312.50	$ 211,125.00	$ 636,125	
9/1/2038	$ 16,465,000	$ 430,000	2.50%	$ 5,375.00	$ 205,812.50	$ 635,813	$ 1,271,938
3/1/2039	$ 16,035,000	$ 435,000	2.50%	$ 5,437.50	$ 200,437.50	$ 635,438	
9/1/2039	$ 15,600,000	$ 440,000	2.50%	$ 5,500.00	$ 195,000.00	$ 635,000	$ 1,270,438
3/1/2040	$ 15,160,000	$ 450,000	2.50%	$ 5,625.00	$ 189,500.00	$ 639,500	
9/1/2040	$ 14,710,000	$ 460,000	2.50%	$ 5,750.00	$ 183,875.00	$ 643,875	$ 1,283,375

Chandler Amortization Schedule Continued

Date	Principal Balance	Principal Payment	Interest Rate	Period Interest	Total Interest	Period Total	Fiscal Total
3/1/2041	$ 14,250,000	$ 470,000	2.50%	$ 5,875.00	$ 178,125.00	$ 648,125	
9/1/2041	$ 13,780,000	$ 475,000	2.50%	$ 5,937.50	$ 172,250.00	$ 647,250	$ 1,295,375
3/1/2042	$ 13,305,000	$ 480,000	2.50%	$ 6,000.00	$ 166,312.50	$ 646,313	
9/1/2042	$ 12,825,000	$ 485,000	2.50%	$ 6,062.50	$ 160,312.50	$ 645,313	$ 1,291,625
3/1/2043	$ 12,340,000	$ 490,000	2.50%	$ 6,125.00	$ 154,250.00	$ 644,250	
9/1/2043	$ 11,850,000	$ 495,000	2.50%	$ 6,187.50	$ 148,125.00	$ 643,125	$ 1,287,375
3/1/2044	$ 11,355,000	$ 500,000	2.50%	$ 6,250.00	$ 141,937.50	$ 641,938	
9/1/2044	$ 10,855,000	$ 510,000	2.50%	$ 6,375.00	$ 135,687.50	$ 645,688	$ 1,287,625
3/1/2045	$ 10,345,000	$ 515,000	2.50%	$ 6,437.50	$ 129,312.50	$ 644,313	
9/1/2045	$ 9,830,000	$ 520,000	2.50%	$ 6,500.00	$ 122,875.00	$ 642,875	$ 1,287,188
3/1/2046	$ 9,310,000	$ 525,000	2.50%	$ 6,562.50	$ 116,375.00	$ 641,375	
9/1/2046	$ 8,785,000	$ 530,000	2.50%	$ 6,625.00	$ 109,812.50	$ 639,813	$ 1,281,188
3/1/2047	$ 8,255,000	$ 540,000	2.50%	$ 6,750.00	$ 103,187.50	$ 643,188	
9/1/2047	$ 7,715,000	$ 545,000	2.50%	$ 6,812.50	$ 96,437.50	$ 641,438	$ 1,284,625
3/1/2048	$ 7,170,000	$ 550,000	2.50%	$ 6,875.00	$ 89,625.00	$ 639,625	
9/1/2048	$ 6,620,000	$ 560,000	2.50%	$ 7,000.00	$ 82,750.00	$ 642,750	$ 1,282,375
3/1/2049	$ 6,060,000	$ 565,000	2.50%	$ 7,062.50	$ 75,750.00	$ 640,750	
9/1/2049	$ 5,495,000	$ 570,000	2.50%	$ 7,125.00	$ 68,687.50	$ 638,688	$ 1,279,438
3/1/2050	$ 4,925,000	$ 580,000	2.50%	$ 7,250.00	$ 61,562.50	$ 641,563	
9/1/2050	$ 4,345,000	$ 590,000	2.50%	$ 7,375.00	$ 54,312.50	$ 644,313	$ 1,285,875
3/1/2051	$ 3,755,000	$ 600,000	2.50%	$ 7,500.00	$ 46,937.50	$ 646,938	
9/1/2051	$ 3,155,000	$ 610,000	2.50%	$ 7,625.00	$ 39,437.50	$ 649,438	$ 1,296,375
3/1/2052	$ 2,545,000	$ 625,000	2.50%	$ 7,812.50	$ 31,812.50	$ 656,813	
9/1/2052	$ 1,920,000	$ 630,000	2.50%	$ 7,875.00	$ 24,000.00	$ 654,000	$ 1,310,813
3/1/2053	$ 1,290,000	$ 640,000	2.50%	$ 8,000.00	$ 16,125.00	$ 656,125	
9/1/2053	$ 650,000	$ 650,000	2.50%	$ 8,125.00	$ 8,125.00	$ 658,125	$ 1,314,250
		$24,075,000			$ 14,039,544	$ 38,114,544	$ 38,114,544
						5 Year Average	$ 742,660
						Maximum	$ 1,314,250

Chandler Municipal Water
OUCC Revised
Annual Debt Service Reserve

	Petitioner's Current Debt	OUCC Revised 2018 Debt	Total Debt Service
9/1/2018	$ 674,222		$ 674,222
9/1/2019	$ 673,449	$ 607,344	$ 1,280,793
9/1/2020	$ 676,474	$ 741,725	$ 1,418,199
9/1/2021	$ 676,312	$ 742,100	$ 1,418,412
9/1/2022	$ 675,964	$ 743,375	$ 1,419,339
9/1/2023	$ 676,432	$ 743,525	$ 1,419,957
9/1/2024	$ 677,751	$ 742,575	$ 1,420,326
9/1/2025	$ 673,926	$ 746,525	$ 1,420,451
9/1/2026	$ 673,982	$ 747,300	$ 1,421,282
9/1/2027	$ 719,022	$ 702,238	$ 1,421,260
9/1/2028	$ 719,042	$ 702,913	$ 1,421,955
9/1/2029	$ 718,522	$ 703,475	$ 1,421,997
9/1/2030	$ 718,432	$ 703,950	$ 1,422,382
Maximum Debt Service			$ 1,422,382
Combined Debt Service Reserve Requirement			$ 1,422,382
Petitioner's Current Debt Service Reserve Balance			$ 721,895
Required Amount to Fund Debt Service Reserve			$ 700,487
Annual Requirement over 5 years			$ 140,097

All of Petitioner's current debt (2010 and 2016 bonds) will retire by 2030 at which time the maximı
remaining annual payment on the 2018 bonds will be $1,314,250