STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

IN THE MATTER OF THE PETITION OF THE CITY OF MARION, INDIANA, FOR APPROVAL TO ISSUE BONDS AND ADJUST ITS RATES AND CHARGES	**CAUSE NO. 45838**

PREFILED DIRECT TESTIMONY AND EXHIBITS OF ANDREW BURNHAM

Prefiled Direct Testimony of Andrew Burnham	Petitioner's Exhibit 12
Experience and Qualification of Andrew Burnham	Petitioner's Exhibit 13
Phase I Cost of Service Schedules	Petitioner's Exhibit 14
Rate Design Schedules and 5 Year Schedule of Rates and Charges	Petitioner's Exhibit 15

Respectfully submitted,

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Petitioner's Exhibit 12

PETITIONER'S EXHIBIT 12

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

IN THE MATTER OF THE PETITION OF THE CITY OF MARION, INDIANA, FOR APPROVAL TO ISSUE BONDS AND ADJUST ITS RATES AND CHARGES	**CAUSE NO. ________**

PREFILED DIRECT TESTIMONY

OF

ANDREW BURNHAM

ON BEHALF OF

THE CITY OF MARION, INDIANA

I. INTRODUCTION

1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Andrew Burnham. My business address is 777 South Harbour Island Boulevard, Suite 600, Tampa, Florida 33602.

2. WHAT IS YOUR OCCUPATION?

A. I am a Vice President with Stantec Consulting Services Inc. ("Stantec") and Director of Management & Technology Consulting. In that capacity, I have responsibility for the delivery and oversight of the company's asset management, organizational performance, financial, economic, funding, and technology advisory services to hundreds of communities throughout North America. While these services are provided across multiple sectors, they are predominantly focused within the water industry.

3. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I hold a Bachelor of Science degree in Business Administration, as well as an Associate Personal Computer Specialist degree from Lake Superior State University. Moreover, I have attended multiple classes in utility ratemaking from several industry groups, including the American Water Works Association ("AWWA"), the American Gas Association, and the Edison Electric Institute.

4. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.

A. From January 2001 through July 2003, I worked for Consumers Energy Company as an analyst within the Rates Department where I focused on various elements of revenue requirements, cost of service allocations, pricing, and tariff administration for retail, as well as wholesale customers of the electric and natural gas systems. In July of 2003, I began my employment with Burton & Associates, a specialty consulting services company focused on providing water resources rate setting and financial management advisory services to local governments and private utilities. Over time, I received various promotions, ultimately becoming Vice President and co-owner prior to the sale of the company in December of 2015 to Hawksley Consulting, a subsidiary of Montgomery Watson Harza, which Stantec Consulting Services Inc. acquired in 2016.

Since 2003, my focus has been predominantly on water resources financial management and rate setting for public and private utilities. During my career, I have personally conducted or managed hundreds of water rate studies for more than a hundred communities throughout North America, mostly in the United States. As such, I am an active and contributing member of the Rates & Charges Committee and the Finance, Accounting & Management Controls Committee of the AWWA. I also serve as the Vice Chair and a Trustee of the Management & Leadership Division of AWWA that oversees these committees. Among my contributions, I led the development of the first ever Cash Reserves Policy Guidelines report and corresponding policy statement for AWWA, and I co-authored the current seventh edition of the Manual of Water Supply Practices M1 Principles of Water Rates, Fees, and Charges ("M1") published by the AWWA in January of 2017[1]. At present, I serve as a co-author for two manual updates being pursued by the AWWA: first, an update to the fourth edition of its Manual of Water Supply Practices M29 Water Utility Capital Financing, and second, an update to the current seventh edition of M1.

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[1] Unless otherwise noted, all references in my testimony to M1 are to the 7th edition of M1.

Additionally, I serve as an instructor for the water portion of the Advanced Ratemaking Program of the Institute of Public Utilities of Michigan State University. I also maintain memberships in other notable and relevant industry groups, including the Utility Resource Management Committee of the Water Environment Federation, the National Association of Clean Water Agencies, and the Government Finance Officers Association. I routinely prepare publications and make presentations on water resources management and rate setting topics for various industry groups.

Further information on my qualifications and experience is included in Petitioner's Exhibit 13.

5. HAVE YOU PREVIOUSLY TESTIFIED IN ANY REGULATORY PROCEEDINGS?

A. Yes. I have prepared and/or provided utility rate related testimony before utility regulatory commissions in Arizona, Florida, Indiana, Michigan, the United States Virgin Islands, and the Federal Energy Regulatory Commission, and in circuit and district courts in various states. The subject of my testimony in these matters varied, including but not limited to: revenue requirements; rate adjustments; cost of service allocations; pricing structures; rate base and return on investment; wholesale rates; utility acquisitions; connection and capital cost recovery charges; and miscellaneous fees and user charges.

II. OVERVIEW OF TESTIMONY

6. WHAT IS THE PURPOSE OF YOUR ENGAGEMENT AND TESTIMONY IN THIS PROCEEDING?

A. Stantec was engaged by the City of Marion, Indiana ("Marion"), to prepare a cost of service and rate design analysis to develop proposed schedules of rates and charges for water service. Stantec completed a cost of service and rate design analyses based on the Phase I revenue requirements using customer data from a test year of June 2021 to May 2022, and then developed a multi-year schedule of rates and charges for Phase I through Phase V revenue requirements. The rationale for the test year as well as the revenue requirements for each phase were provided to Stantec by Marion's municipal advisor, Crowe, LLP ("Crowe").

7. PLEASE DISCUSS HOW YOUR DIRECT TESTIMONY IS ORGANIZED.

A. My testimony is organized into the following sections:

I. Introduction

II. Overview of Testimony

III. Cost of Service Study

IV. Proposed Water Rates and Charges

8. WHAT ATTACHMENTS ARE YOU SPONSORING IN THIS PROCEEDING?

A. I am sponsoring the following attachments, some of which have multiple parts:

Petitioner's Exhibit 13 Business Experience and Qualifications of Andrew Burnham

Petitioner's Exhibit 14 Phase I Cost of Service Detailed Schedules

Petitioner's Exhibit 15 Rate Design Schedules and 5-year Schedule of Rates and Charges

9. WERE THESE ATTACHMENTS PREPARED BY YOU OR PREPARED UNDER YOUR DIRECT SUPERVISION?

A. Yes. I either prepared each of the schedules or provided supervision as to their preparation.

10. PLEASE DESCRIBE THE GENERAL ARRANGEMENT OF THESE ATTACHMENTS.

A. Petitioner's Exhibit 13 identifies my business experience and qualifications.

Petitioner's Exhibit 14 includes detailed schedules presenting the steps and results for the cost of service study

Petitioner's Exhibit 15 includes detailed schedules supporting the rate design analysis and resulting schedule of rates and charges to meet Phase I – Phase V revenue requirements.

III. COST OF SERVICE STUDY

11. PLEASE PROVIDE A SUMMARY OF YOUR COST OF SERVICE STUDY TESTIMONY.

A. This testimony will describe the purpose of the cost of service study, identify the data and methodology relied upon in completing the analysis, and present the resulting allocations to each customer class that informed the development of recommended rates and charges.

12. PLEASE DESCRIBE THE PURPOSE OF A COST OF SERVICE STUDY.

A. The basic premise in establishing fair and equitable rates is that rates should reflect the cost of providing service to each customer class. The water system provides service to various classes of customers who have different water use patterns and service characteristics. A cost of service study determines proportional allocations of costs between defined customer classifications to support the development of rates and charges that recover the costs incurred to serve each respective customer classification.

The cost of providing service can be reasonably determined for groups or classes of customers that have similar water-use characteristics. Rate-making endeavors to assign costs to classes of customers in a nondiscriminatory, cost-responsive, and proportional manner so that rates can be designed to closely meet the cost of providing service to such customer classes (AWWA M1, page 73). Stantec has followed the "base-extra capacity" methodology outlined in the M1 to allocate costs to system functions and then to each customer class based on identified units of service. The AWWA Manual M1 (M1) identifies two methodologies for the allocation of water utility costs, the base-extra capacity method and the commodity-demand method. The base-extra capacity method is the most common method utilized and provides for the determination of costs associated with meeting average day versus peak demands that is useful in analyzing differences between the cost of serving various customer classifications and in developing rate structures. The intent of the M1 is to provide guidance and advice so that a utility may create cost-based rates that reflect the distinct and unique characteristics of that utility and the values of the community.

13. WHERE DID YOU OBTAIN THE DATA USED TO PERFORM THE COST OF SERVICE STUDY?

A. The data used to prepare the study was provided by Marion from its business records, from Crowe, or is otherwise available to individuals working in the utility rate and financing field. Based upon my experience, the type of data used in the study is consistent with general industry practice. Specifically, Crowe provided the test year revenue requirement and future revenue requirement schedules shown in Petitioner's Exhibit 10 sponsored by the Petitioner's witness Jennifer Wilson. Data provided by Marion includes organizational structure and staffing, operating statistics, historical water production, customer billing data, rate schedules, fire flow requirements, and occurrences of fires. Lastly, some of the materials I reviewed to prepare my testimony in this Cause includes, but is not limited to, the AWWA M1, our files regarding previous rate cases, as well as other materials which are normally examined to allocate system costs and develop utility rates and charges.

14. PLEASE DESCRIBE THE METHODOLOGY EMPLOYED IN DEVELOPING THE COST OF SERVICE ANALYSIS.

A. Stantec has followed the American Water Works Association's "Base-Extra Capacity" methodology to allocate costs based on the demand and use of each customer class. This method is described in detail in the AWWA's M1 Principles of Water Rates, Fees, and Charges Manual. The base-extra capacity method has been widely utilized and is a well-accepted methodology used by public service commissions and water systems throughout the United States. Under the base-extra capacity method, Marion's costs (i.e., revenue requirements) are first categorized into the following system functions according to the design and operation of the water system and available data: treatment, distribution, and customer. Some costs can be directly attributed to a function based on the type of expense and department in which it is belongs. Other costs, such as Administrative and General or Capital, will be assigned to each function with the use of allocation factors based on organizational statistics, capital projects, and other operating data as appropriate.

The functionalized costs are then allocated to the following cost components according to how they support the operation of the water system to meet base (average day) demands, extra-capacity (max day and max hour) demands, and customer service and billing needs to determine system-wide unit costs. Then the unit costs are applied to the respective units of service for each customer class to distribute costs proportionally. Essentially, the combination of how each customer class uses the base capacity and peak capacities of the water system and associated costs functionalized to each of those cost components will define the cost to serve each customer class.

The intent of the M1 is to provide guidance and advice so that a utility may create cost-based rates that reflect the distinct and unique characteristics of that utility and the values of the community. As such, from the application of the principles and methodologies therein, a utility may create cost-based rates that reflect the distinct and unique characteristics of that utility and the values of the community (AWWA M1, page 5). Said simply, utilities are like snowflakes, and while there may be many similarities, there will also be differences that require modifications to approaches and methods employed to best fit the circumstances and available data/resources. A good example is the range in the number and type of system functions employed across utility systems. Some systems may be able and need to break out their costs more granularly and subsequently utilize a greater number of functions in their allocation process (such as supply, treatment, transmission, distribution, pumping, storage, meters/service lines, customer service, etc.) than was done in this instance for Marion.

15. PLEASE DESCRIBE THE PETITIONER'S EXHIBIT 14 COST OF SERVICE DETAILED SCHEDULES.

A. Petitioner's Exhibit 14 consists of several schedules representing the various steps in the cost of service study process:

Schedule 1 – Allocation Factors presents the allocation factors applied to the revenue requirements to determine the costs associated with each water system function (Treatment, Distribution, and Customer).

Schedules 1A– Administration FTEs displays organizational information used to develop certain allocation factors on Schedule 1.

Schedule 1B – Schedule 1B displays Phase 1 and 2 of the Capital Improvement Program (CIP) used to develop certain allocation factors on Schedule 1. This CIP was prepared for the rate increases and ordinances presented and approved by the Common Council of the City of Marion, Indiana (the "Original CIP"), as described in Petitioner's Exhibit 9 sponsored by Jennifer Wilson. The estimated pricing of the CIP projects has been very volatile and thus has been updated to reflect more recent estimates in the Preliminary Engineering Report. However, at this time the Revenue Requirements presented in Petitioner's Exhibit 10 will not be updated for the revised CIP. The cost of service will be updated when the Utility files a true-up report with the Commission to reflect the project costs and final financing as described in Petitioner's Exhibit 9 sponsored by Jennifer Wilson.

Schedule 2 – Water Expense Allocation presents the allocation of Test Year Water Revenue Requirements provided by Crowe to the defined system functions. Each line item of the revenue requirements is assigned an allocation factor from Schedule 1 based on the type of expense and the department.

Schedule 3 – Water Non-Rate Revenue Allocation displays the non-rate revenues provided by Crowe. Each line item of non-rate revenue is allocated to customer classes based on the weighted average cost of service results for each class. This is a reasonable approach given that the source of the revenue is not specific to one class of customer and therefore is shared based on ratio of costs to all customer classes. The non-rate revenues offset the gross cost of service for each customer class.

Schedule 4 – Functions and Flows presents a summary of annual water production data for the last three full calendar years provided by Marion. The calculated coincident peaking factors used in this study for the water system were calculated using an average of the three-year period of January 2019 – December 2021. This schedule also shows the utilization of these factors to allocate the costs of each function to the base, extra capacity max day, extra capacity max hour, and customer cost components.

Schedule 5 – Units of Service presents the annual water use for each of the customer classes served by Marion (Residential, Commercial, Industrial, and Institutional) for the test year. It shows the calculation of max day and max hour demands by customer class and presents the units of service by cost component.

Schedule 6 – Max Day and Max Hour Compression Factors by Class displays weekly and daily water use assumptions by customer class and details the calculation of compression factors utilized on Schedule 5.

Schedule 7 – Fire Protection Units of Service and Functions shows fire protection flow needs and the calculated units of service for the extra capacity max day and extra capacity max hour cost components. It also displays the methodology used to distribute fire protection costs to public fire protection and private fire protection categories based on the ratio of equivalent services in each category.

Schedule 8 – Unitization displays the calculated unit rate for each cost component (base, max day, max hour, and customer). This schedule brings together the function costs from Schedule 2, the allocation of those costs to the base, max day, max hour, and customer cost components from Schedule 4, and the total Units of Service from Schedule 5.

Schedule 9 – Water Cost of Service calculates the net cost to serve each customer class and compares the costs with the current revenues from each class to identify the rate adjustment necessary to meet the Phase I cost of service and revenue requirements.

17. PLEASE FURTHER EXPLAIN SCHEDULE 2 IN PETITIONER'S EXHIBIT 14 AND HOW COSTS ARE ALLOCATED TO EACH FUNCTION.

A. Schedule 2 in Petitioner's Exhibit 14 presents the revenue requirements for Phase I. The expenses line items were provided by Crowe and are aggregated by type of expense and department. Each line item of expense is assigned an allocation factor defined on Schedule 1 in Petitioner's Exhibit 14. Department expenses associated with wells and treatment were allocated to Treatment function. Department expenses associated with Distribution were allocated to the Distribution function. Department expenses for Customer Accounts were allocated directly to the Customer function. Department expenses for Administrative and General were allocated to each of the function based on a breakdown of the job function of staff included in the Administrative and General department, shown on Schedule 1A. Phase I capital expenses are assigned to functions based on the funding source and type of project as shown on Schedule 1B.

18. PLEASE EXPLAIN THE BASIS OF YOUR ALLOCATION OF FUNCTIONAL COSTS TO THE BASE AND EXTRA CAPACITY COST COMPONENTS.

A. Schedule 4 of Petitioner's Exhibit 14 displays how the costs of each function are allocated to the base and extra capacity components. Treatment costs are allocated to base and extra capacity max day cost components as these facilities are typically designed to meet max day demands but are also used to meet average day demands (i.e. the base cost component). The allocation of the treatment function to the base component is calculated as a ratio of the average day demands to the max day demands. The remaining treatment costs are allocated to the extra capacity max day cost component. Distribution costs are allocated to the base, extra capacity max day, and extra capacity max hour costs components as water mains are sized and utilized to meet all three types of demands. The allocation of the distribution function to the base component is calculated as a ratio of average day demands to max hour demands. The allocation of the distribution function to the extra capacity max day component is calculated as a ratio of the difference between the max day and average day demands divided by the max hour demands. The remaining distribution function costs are then allocated to the extra capacity max hour cost component. Schedule 8 applies these allocation factors to the function costs and displays the total costs allocated to each cost component.

19. PLEASE FURTHER EXPLAIN SCHEDULE 4, SPECIFICALLY THE CALCULATION OF THE WATER SYSTEM COINCIDENT PEAKING FACTORS.

When evaluating system maximum day and peak hour demands, water production data is often utilized. In this instance average day, maximum day, and peak hour production data for calendar years 2019, 2020, and 2021 was provided by Marion. A multi-year average was calculated and utilized as the basis of establishing system max day and peak hour demands for purposes of establishing cost allocations to cost components (and for comparing to noncoincident customer demands). Variation in water production from year to year is not unique to Marion, as many utilities across the country experience changes in water production due to changes in weather conditions or other factors. Specifically, over this period, many utilities also experienced changes in water production and water use patterns due to impacts of the COVID-19 Pandemic. Therefore, a multi-year average was used to establish the system max day and max hour demands for the cost of service analysis.

CY	Average Day (MGD)	Max Day (MGD)	Max Hour (MGD)	Max Day Factor	Max Hour Factor
2019	3.985	5.497	8.900	1.38	2.23
2020	3.741	4.608	8.600	1.23	2.30
2021	3.897	4.612	8.700	1.18	2.23
Average	**3.874**	**4.906**	**8.733**	**1.27**	**2.25**

20. PLEASE FURTHER EXPLAIN SCHEDULE 5, SPECIFICALLY THE CALCULATION OF THE NON-COINCIDENT MAX MONTH DEMAND FACTOR FOR EACH IDENTIFIED CUSTOMER CLASS.

Marion provided monthly billing data for the period of January 2019 thru May 2022. The billing data identifies the monthly usage, type of customer, and service type among other customer information. There are six customer types: residential, commercial, industrial, institutional, municipal, agricultural, and other. Together the municipal, agricultural, and other category of customers make up less than 4% of the annual consumption and represent only 330 customers (3% of total number of customers). Additionally, we learned from discussion with Marion that the 'other' customer type represents customers that are not within the City's municipal limits but still receive services from the City. This category includes a mix of residences, public/institutional customers, and commercial customers. Therefore, it was determined that the cost of service would be completed for the major customer classes of residential, commercial (including agricultural), industrial, and institutional (including municipal). The other customers were distributed into the residential, commercial, and institutional customer classes based upon a revenue reconciliation analysis.

This billing data was compiled by customer class for each month to identify the max month consumption for each calendar year 2019, 2020, 2021, and the test year of June 2021 – May 2022. The max month consumption for each customer class was compared to the average to calculate a max month demand factor for each customer class. The max month factors by customer class for each calendar year and the test year are shown in the table below.

Customer Class	CY 2019	CY 2020	CY 2021	Test Year	Average 3-year (CYs 2019, 2020, 2021)
Residential	1.15	1.17	1.10	1.10	1.14
Commercial	1.26	1.18	1.20	1.18	1.21
Industrial	1.86	1.17	1.27	1.27	1.43
Institutional	1.48	1.24	1.16	1.13	1.29

As shown above, the resulting max month factors for each customer class varied over this period. Like the discussion of water production data, this type of variation is not unique to Marion. These results were discussed with Marion staff, and were determined to be reasonable, particularly given the stability of the customer base during this period and consideration of other factors/variables that cause water use changes from year to year. Therefore, a multi-year average of max month factors was utilized in the analysis. The non-coincident max month factors were applied to the average daily demands from the test year to establish the non-coincident max month demand for each customer class shown on line 4 on Schedule 5 of Petitioner's Exhibit 14.

21. CAN YOU EXPLAIN THE NON-COINCIDENT MAX DAY DEMANDS CALCULATED FOR EACH CUSTOMER CLASS ON SCHEDULE 5 IN PETITIONER'S EXHIBIT 14?

Max day water usage by customer class is a data point that is not readily available for most water systems in the country unless they have advanced metering infrastructure. As such, it is common practice that the max day demands by customer class are calculated using a combination of monthly billing data, coincident (system) factors, and general understanding or assumptions of typical usage profiles for the respective customer classes. The non-coincident max day demands calculated for each customer class on Schedule 5 are based on the non-coincident max month demands, the coincident max month to max day factor of the system, and max day compression factors based on weekly usage assumptions for the respective customer classes.

The system-wide max month to max day factor of 1.18 is calculated on Schedule 4 and is the ratio of the system or coincident max month water production to the max day water production. Like the calculation of the coincident max day and max hour factors, a three-year average of max month and max day values were used in the calculation of the system max month to max day factor.

Max day compression factors were established for each of the customer classes and shown on Schedule 6 in Petitioner's Exhibit 14. The schedule shows the assumed weekly use assumptions used for each customer class. This methodology is consistent with the methodology of estimating non-coincident peaking factors as identified in Appendix A of the AWWA M1 and our experience with other utility systems. The max day compression factors, along with the max month to max day factors, are applied to the non-coincident max month demands for each customer class to determine the non-coincident max day demand of each customer class shown on line 7 on Schedule 5 and utilized to calculate the max day units of service shown on line 20 on Schedule 5 of Petitioners Exhibit 14.

22. HOW DID YOU EVALUATE THE CALCULATED NON-COINCIDENT MAX DAY DEMANDS FOR REASONABLENESS?

The aggregate maximum day non-coincident demands calculated from these assumptions are divided by total system average day demands and then compared against the ratio of the coincident maximum day demands of the system to average day demands to measure the system diversity of demand, consistent with Appendix A of M1. The system diversity ratio is typically in the range of 1.1 to 1.4 for the majority of systems, though different system diversity measures may arise for communities, depending upon their specific circumstances and data. This system diversity measure is a method to ensure that the maximum day peaking factors selected for each customer class, based on the data available and the assumptions regarding variation in consumption patterns, likely result in reasonable approximations of the overall class maximum-day demands for cost allocation purposes. AWWA M1, Appendix A, page 377. The aggregate max day non-coincident demand factors and the system diversity ratios are shown on Schedule 5. The system diversity ratio of 1.53, while slightly above the typical range, supports that the maximum-day peaking factors selected for each of the classes, based on the data available and the assumptions regarding variation in consumption throughout the week, result in reasonable approximations of the overall class maximum-day demands for cost allocation purposes.

23. CAN YOU EXPLAIN THE NON-COINCIDENT MAX HOUR DEMANDS CALCULATED FOR EACH CUSTOMER CLASS ON SCHEDULE 5 AND HOW THESE VALUES ARE EVALUATED FOR REASONABLENESS?

This is again an instance of a data point that is not readily available for many water systems in the country and often these adjustment factors are based on general understandings or assumptions of typical usage profiles for the respective customer classes. Max hour compression factors were calculated for each of the customer classes as shown on Schedule 6. The schedule shows the assumed hours per day or water use assumptions for each customer class. This method is consistent with the methodology of estimating non-coincident peaking factors as identified in Appendix A of the M1.

The max hour compression factors are applied to the non-coincident max day demands for each customer class to determine the non-coincident max hour demand of each customer class shown on line 12 on Schedule 5 and utilized to calculate the max hour units of service shown on line 23 on Schedule 5.

The aggregate max hour non-coincident demands calculated from these adjustment assumptions divided by the total system average day demands can be compared against the ratio of coincident max hour demands of the system divided by the total average day demands to measure the system diversity of demand per Appendix A of M1. The system diversity ratio is often in the range of 1.1 to 1.4, though different system diversity measures may arise for communities with more atypical customer class usage patterns. This system diversity measure is another method to ensure that the max hour factors selected for each customer class, based on the data available and the assumptions regarding variation in consumption patterns, likely result in reasonable approximations of the overall class max hour demands for cost allocation purposes. AWWA M1, Appendix A, page 378. The system diversity ratio of 1.32 supports that the peak hour factors selected for each of the classes, based on the data available and the assumptions regarding variation in consumption throughout the week, result in reasonable approximations of the overall class peak hour demands for cost allocation purposes.

24. CAN YOU FURTHER EXPLAIN THE TOTAL UNITS OF SERVICE CALCULATED ON SCHEDULE 5, SPECIFICALLY, THE FIRE PROTECTION PUBLIC AND PRIVATE UNITS OF SERVICE?

Schedule 5 in Petitioner's Exhibit 14 summarizes the units of service for each cost component by customer class. In addition to the units of service for each of the customer classes, units of service for the public and private fire protection services must also be established. The calculation of the fire protection units of service is shown on Schedule 7. Fire protection units of service were determined by estimating the required flow needs for a typical residential fire and large fire (non-residential). The assumed flows to fight a typical residential fire (1,500 gallons per minute) were assumed for a 2-hour duration, while the assumed flow (3,500 gallons per minute) to fight a large non-residential fire are assumed for a 3-hour duration. These assumptions are supported by the Marion Fire Department, Public Protection Classification (PPC) Summary Report prepared by the Insurance Service Office (ISO) in March 2022. The flow rates are multiplied by the duration to get a total amount of needed flow on a max day for each fire. The max hour flows represent the needed flow for one hour for each fire. The flow requirements for each type of fire are added together to get the total fire flow demands of the water system on a max day and max hour basis.

The allocation factors used to distribute these required flows to the public and private fire protection customer classes is also calculated on Schedule 7. The Marion Fire Department PPC Summary report provided a count of all the public fire hydrants served by the Marion water system. Marion also provided a summary of the number of private fire hydrants and private sprinkler heads and associated accounts served and billed each year. To distribute the fire protection needs between the public system and customers with private systems, hydrants and services providing sprinkler protection were normalized to an equivalent service unit using the Hazen-Williams equation for flow through pressure conduits as diameter raised to power of 2.63. Typical fire protection appurtenances like hydrants and sprinkler heads are served by lines of 6" diameter. The demand factors were applied to the number of service lines, assuming 1 dedicated line for each hydrant and 1 dedicated service line for each sprinkler head account, and the resulting allocation factors are shown on lines 1, 2, and 3 of Schedule 7. As a result, 79% of the required fire flows on a max day and max hour basis will be distributed to the public fire protection service and the remainder to private fire protection service. These are summarized in the unit of service table on Schedule 5.

25. PLEASE FURTHER EXPLAIN SCHEDULE 9 IN PETITIONER'S EXHIBIT 14 AND SUMMARIZE THE RESULTS OF THE COST OF SERVICE STUDY?

A. Schedule 9 provides the summary of all the costs allocated to each customer class and compares the assigned costs for each customer class with the projected revenues from each class to identify the level of rate adjustment necessary to meet the cost of service requirements for Phase I. Lines 1 through 4 display the units of service by cost component (base, max day, max hour, and customer) for each customer class calculated on Schedule

5 and Schedule 7 for fire protection. Lines 5 through 8 display the unit costs by cost component determined on Schedule 8. The unit costs were calculated by dividing the allocated facility costs by the units of service for each cost component.

Lines 10 – 15 calculate the cost by component for each customer class, and line 15 shows the gross cost to serve each customer class. The gross cost of service is offset by non-rate revenues and is allocated to each of the customer classes based on the weighted average of the gross cost of service allocation. Finally, the net cost of service or revenue requirement for Phase I of each customer class is shown on line 17 and compared to existing revenues on line 18. The table below summarizes the results of the cost of service by customer class. As shown in the table below, and consistent with Phase I revenue requirements provided by Crowe, there is an overall need to increase revenues by 16% to meet the revenue requirements in Phase I. However, the increases or change in revenue to each customer class varies based upon the cost to serve as discussed in this testimony. The cost of service results indicate that the residential customer class requires an adjustment less than the overall average, while the commercial, industrial, and institutional customer classes require increases greater than the overall average. Fire Protection Charges are currently set higher above the allocated amounts of the Phase I revenue requirement.

	Total Cost to Serve (Phase I)	Existing Revenues	% Change
Residential	$2,215,059	$1,960,077	13.0%
Commercial	$737,421	$576,452	27.9%
Industrial	$316,706	$178,409	77.5%
Institutional	$618,735	$419,617	47.5%
Fire Protection - Public	$489,905	$557,141	-12.1%
Fire Protection - Private	$131,927	$197,236	-33.1%
Total	**$4,509,754**	**$3,888,932**	**16.0%**

The results above are not surprising given that Marion has not completed a cost of service study or adjusted its rates in nearly twenty years. The magnitude of changes required in each customer class can largely be attributed to the change in customer base and water use patterns over time since the last cost of service has been completed, as well as changes in nature of Marion's cost requirements (and distributions of those requirements) since rates were last established. Stantec recommends that the cost of service be updated every three to five years to account for changes in operation, capital planning, customer base, or customer usage.

Additionally, unit costs were calculated for each customer class, excluding public and private fire protection costs. The unit costs are shown in the following table.

	Total Cost to Serve (Phase I)	Less Customer Charge Revenues	Cost to be recovered from Variable Rate	Annual Water Use (CCF)	Unit Costs ($ per CCF)
Residential	$2,215,059	-$494,770	$1,720,289	526,197	$3.27
Commercial	$737,421	-$65,340	$672,081	223,760	$3.00
Industrial	$316,706	-$2,864	$313,842	101,009	$3.11
Institutional	$618,735	-$15,486	$603,249	195,736	$3.08
Total	**$3,887,922**	**-$578,460**	**$3,309,461**	**1,046,701**	**$3.16**

The unit costs are calculated by subtracting the projected customer charge revenues from the total cost to serve and dividing by the annual water use for each customer class in hundred cubic feet (CCF). It is important to note that Marion currently does not have separate rates for each individual customer class, but instead applies a single retail rate structure. Specifically, there is one rate structure and schedule of rates and charges applied to all customers and meter sizes. The advantages of a single rate structure for all customers is that it is easy to administer and easy to communicate to customers. Considering the small differences between the calculated unit rates per class, past practice, and the advantages of one rate structure, the proposed rate design continues to utilize a single rate structure for all customers.

PROPOSED WATER RATES AND CHARGES

26. PLEASE BRIEFLY DESCRIBE MARION'S PRESENT WATER RATES AND CHARGES.

A. Marion's present water rates and charges are the same for all customers on a monthly basis. Each hundred cubic feet (CCF) of water used is charged through a four-tier declining block structure shown on the next page.

		Rate per CCF
Tier 1:	0 - 1.33 CCF	$3.96
Tier 2:	1.34 - 6.67 CCF	$3.43
Tier 3:	6.67 - 100 CCF	$1.95
Tier 4:	Over 100 CCF	$1.30

Each user presently pays a minimum charge based on a quantity of water defined for each meter size as shown below and applied to the declining block rate structure. Water use above the minimum usage is charged according to the block rate structure.

Meter Size	Minimum Usage (CCF)
5/8"	3
3/4"	5
1"	10
1 1/2"	19
2"	37
3"	81
4"	200
6"	328
8"	457

Moreover, customers are charged a separate rate for public fire protection on a monthly basis based on the size of their water meter. Private Fire Protection charges are assessed on an annual basis to customers with private hydrants and sprinkler systems. Customers are charged $413.06 annually for each private hydrant and $0.43 per sprinkler head.

27. PLEASE EXPLAIN HOW THE COST OF SERVICE RESULTS WILL BE USED IN CONSIDERING THE RATE STRUCTURE AND PROPOSED RATES AND CHARGES.

A. A basic premise in establishing fair and equitable rates is that rates should reflect the proportional cost of providing service to each customer class. An equitable rate structure will recognize these differences and reasonable charge those classes for the costs incurred. Rate design efforts use the cost of service results as a guidepost when creating rates and charges, but other factors are also considered, such as customer impacts, affordability, and conservation. As such, the proposed rate schedules were developed in consideration of the proposed phased approach for revenue requirements, while attempting to mitigate customer impacts for all customer classes where possible. Moreover, the proposed rate structure is intended to enhance transparency, allow customers to have more control on their bill by paying for what they use, and also provide a greater price incentive for water conservation by establishing a uniform rate as opposed to a declining block rate structure.

28. PLEASE DESCRIBE THE PETITIONER'S EXHIBIT 15.

A. Petitioner's Exhibit 15 consists of schedules representing the various steps in the rate design process:

Schedule 1 – Water Customer Charge illustrates the calculation of the proposed customer charge based on the results of the cost of service analysis. This charge is intended to capture the costs associated with the customer function equally per bill.

Schedule 2 – Water Unit Rates shows the calculation of an effective unit rate per CCF for each customer class based on the net cost to service each class for Phase I (after consideration of revenue that will be recovered in the customer charge and public fire protection charge) and the annual billable units for each class. This schedule supports the rationale for a single system wide uniform rate per CCF.

Schedule 3 – Fire Protection Rates shows the calculation of fire protection charges based on the Phase I cost of service results from Schedule 9 in Petitioner's Exhibit 14.

Schedule 4 – Phased Rate Plan and Projected Revenues displays the schedule of rates and charges over the 5 Phase revenue requirements. Further testimony will detail the guidelines used to develop this rate plan, which gradually implements the cost of service results over the period to mitigate customer impacts.

Schedule 5 – Multi-Year Schedule of Rates and Charges by year for each phase of the proposed revenue requirements.

Schedule 6 – Example customer impacts based on different combinations of meter size and usage levels based upon Phase I and Phase V rates per Schedule 5.

29. PLEASE DESCRIBE THE GUIDANCE USED TO ESTABLISH PROPOSED RATES WHILE MOVING TOWARD COST OF SERVICE RATES?

A. Changes in revenue recovery are needed for all customer classes; however, some of the needed changes in certain customer classes are significant. For example, the Industrial customer class needs to increase revenue by 77.5% to meet its Phase I revenue requirements alone. To minimize customer impacts and allow customers time to plan for the rate adjustments, indicated cost of service adjustments are being implemented over time in a manner consistent with the five phases of revenue requirement adjustments proposed by Crowe. The following rate design criteria were followed to balance the competing interests of achieving cost-based rates and mitigating rate impacts:

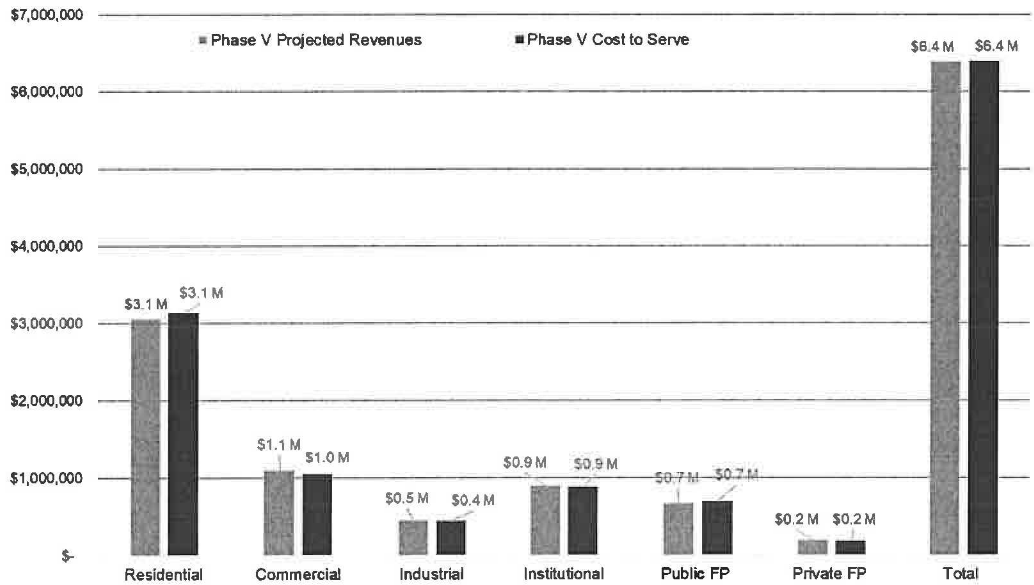
1) The intent was the spread the cost of service adjustments to the customer classes with the greatest impact as equally as possible over each of the phases. Additionally, another goal was to limit the maximum increase for any class to 1.5 times the overall revenue increase proposed by Crowe for each respective phase. For example, Crowe proposed a 16% revenue increase overall in Phase I. Under this approach, the maximum increase that any individual class of customers could realize in Phase I is approximately 23%. In Phase I, the customer impact goal was satisfied for all customer classes. However, in attempting

to have a consistent level of annual increases for each class that is also consistent with the level of overall revenue requirement increases by phase, an increase of about 2 times the overall revenue increase is required for some classes (institutional and industrial) in following phases, as shown in Schedule 4 in Petitioner's Exhibit 15. A summary of the annual revenues and increases by class are shown below.

	Current	Phase I	Phase II	Phase III	Phase IV	Phase V
Residential[1]	$2,314,108	$2,665,801	$2,911,707	$3,121,433	$3,321,631	$3,493,228
% Increase		*15.2%*	*9.2%*	*7.2%*	*6.4%*	*5.2%*
Commercial[1]	$698,854	$806,178	$911,492	$1,027,512	$1,132,406	$1,245,523
% Increase		*15.4%*	*13.1%*	*12.7%*	*10.2%*	*10.0%*
Industrial[1]	$199,611	$245,452	$293,862	$352,676	$411,476	$482,710
% Increase		*23.0%*	*19.7%*	*20.0%*	*16.7%*	*17.3%*
Institutional[1]	$488,317	$566,530	$658,220	$766,141	$866,961	$983,327
% Increase		*16.0%*	*16.2%*	*16.4%*	*13.2%*	*13.4%*
Fire Protection - Private	$198,565	$198,565	$198,565	$198,565	$198,565	$200,253
% Increase		*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.9%*
Overall Revenue Increases Needed[2]		16.0%	16.0%	16.0%	16.0%	16.0%

[1] Public Fire Protection Cost to Serve and Revenues added into Revenues by Class
[2] Provided by Crowe

In Phase V, the revenues collected from each customer class are expected to be closely aligned with the cost to serve each class. The chart on the next page shows the Phase V revenue requirements for each class and in total as compared to the projected Phase V revenues from each class and in total based upon the recommended rate schedules. Phase V cost to serve each class is calculated by applying the ratio of the test year cost to serve each class for Phase I to the total test year revenue requirements for Phase V. Phase V projected revenues are calculated by applying the Phase V proposed rates to the billable units in each class from the test year. Projected revenues for each class in each phase are shown in Schedule 4 in Petitioner's Exhibit 15.



2) In instances where a current rate was above the Phase I cost of service results, the rate was either frozen until such as time when the actual cost caught up or exceeded the current rates based upon the future phases of revenue requirement increases (private fire protection) or increased modestly to establish a more level plan of annual increases consistent with the proposed future revenue requirement increases (public fire protection). This avoids unnecessary rate fluctuations due to decreases followed by future increases. This also helps to offset the lost revenues occurring due to the limit set in item 1) above.

3) Eliminate the minimum use per meter size in the rate structure. The minimum use charge reduces the customer's ability to control their bill. Elimination of the minimum use provides increased affordability for lower volume users and serves to charge customers for the water that they use.

4) Eliminate the declining block rate structure over the five-phase implementation. Elimination of the declining block rate will provide equity between customers as each unit of water will be charged the same rate (which is consistent with current unit rate

calculations by customer class). This gradual change will allow time for customers to prepare and adjust water use, if applicable, and mitigate some rate shock.

5) Implement a Customer Charge per bill set to recover costs associated with providing accurate billing and customer service to customers. This charge is unrelated to the amount of water used and recovers costs that are incurred to accurately bill and provide customer service equally to all customers. Schedule 1 in Petitioner's Exhibit 15 shows the calculation of the Customer Charge for Phase I. Customer function costs are divided by the total number of annual bills to determine the monthly customer charge for all water customers.

30. HAVE YOU PREPARED A SCHEDULE OF PROPOSED RATES AND CHARGES?

Yes, Schedule 5 in Petitioner's Exhibit 15 presents a comparison of the current rates and charges to the proposed rates and charges for each phase of the proposed revenue requirements.

31. HAVE YOU CONSIDERED INDIVIDUAL CUSTOMER BILL IMPACTS AS PART OF THE PROCESS TO DEVELOP THE PROPOSED RATES AND CHARGES?

Yes, bill impacts for all customers were calculated for Phase 1 adjustments. Given the changes to the rate structure and the needed revenue increases there are a wide range of impacts. Generally, customers with low consumption compared to the minimum usage assigned to the meter size in the current structure will see a decrease or slight increase in the monthly bill with the elimination of the minimum use. Large customers can see a more significant increase in their bill as the declining block rate is eliminated over time.

A summary of sample bill analysis performed for the Phase I revenue requirements as well as Phase V was presented to Marion and is included on Schedule 6 in Petitioner's Exhibit 15.

32. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY AT THIS TIME?

A. Yes.

VERIFICATION

I affirm under the penalties for perjury that the foregoing testimony is true to the best of my knowledge, information, and belief.

Andrew Burnham

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing was served upon the following by electronic mail this 10th day of January, 2023:

Indiana Office of Utility Consumer Counselor
infomgt@oucc.in.gov

J. Christopher Janak

4487465_3

Petitioner's Exhibit 13

Stantec

Andrew Burnham

Vice President

Mr. Burnham is the Vice President and Global Practice Leader of Financial Services at Stantec. Andy has extensive experience in conducting as well as overseeing cost of service allocations, integrated financial planning and affordability analyses, and development of alternative rate and fee structures for a variety of utility systems, including water, wastewater, reclaimed water, stormwater, solid waste, recycling, electric, and natural gas. He has been recognized as an industry expert as part of providing testimony in utility rate-related regulatory proceedings in multiple states and territories (including Florida, Michigan, Arizona, and the United States Virgin Islands), as well as before the Federal Energy Regulatory Commission. He has led over 500 studies for 150+ communities, and has supported the issuance of $1 billion of bonds for projects in the past 5 years.

Mr. Burnham is currently serving on multiple AWWA and WEF Committees, and was actively involved in the recent update to AWWA Manual M1 – Principles of Water Rates, Fees and Charges, notably in regards to outside-city retail rates, wholesale rates, and reuse rates. In addition, Andy led the development of the Cash Reserve Policy Guidelines Report recently published by the AWWA.

EDUCATION

Bachelors of Business Administration, Lake Superior State University, Sault Ste. Marie, Michigan, 2000

MEMBERSHIPS

Trustee of the Management & Leadership Division, American Water Works Association

Member, Utility Resource Management Committee, The National Association of Clean Water Agencies

Member, Florida Section, Government Finance Officers Association

Rates and Charges Committee, American Water Works Association

Financial Accounting & Management Controls Committee, American Water Works Association

Management Committee, Water Environment Federation

PROJECT EXPERIENCE

WATER RESOURCES

Western Area Water Authority | North Dakota

Andy is serving as the Project Manager on a financial feasibility study for the Authority as required by the 2017 legislature. As part of the study, our team quantified the amount of excess capacity available on a locational basis to evaluate the potential of firm and interruptible service offerings that would effectively change the Authority's primary role to more of a pure wholesaler of water to local private water companies. The study incorporated potential revenue from a new concession-based business model, with the intent of stabilizing cash flows and achieving financial sustainability to support continued domestic rural water supply in the region.

James City Service Authority | Virginia

Andy was the Project Manager for a comprehensive rate study for the Authority. He led the development of rate structure modifications that ensured the Authority's rates conformed to accepted industry practice and reflected the appropriate distribution of system costs, while achieving its policy objectives, of fiscal stability, affordability, and conservation. In light of declining demands, the Authority had significant concerns relative to its ability to recover a portion of the fixed costs of the system, so we developed a two-part rate structure inclusive of a fixed monthly readiness-to-serve charge and inclining block water conservation rates. We also evaluated the Authority's system and local facilities charges to ensure they recovered the initial cost of capacity for infrastructure utilized to serve new connections in the future.

City of Cleveland - Water and Wastewater Cost of Service Study | Cleveland, Ohio | Project Director

Andy oversaw all work completed during this comprehensive cost of service and rate study for the City's water and wastewater utilities. He provided guidance relative to the development of alternative ten-year financial management plans, reserve policies, and capital funding strategies. Andy also directed the completion of benchmarking activities relative to infrastructure spending for underground assets.

TOHO | Florida | Technical Advisor

Andy recently served as technical advisor for a reclaimed water cost of service and rate design for the Authority. The study included a detailed cost allocation analysis that evaluated the current level of cost recovery from existing rates and examined alternative rate designs for the Authority, including the resulting impacts to retail and bulk customers. The Authority adopted the recommendations developed during the study, which included modifications to provide a consistent level of cost recovery amongst all customer classes and a modified retail reclaimed water rate structure that is consistent with its potable water rate structure.

JEA, Jacksonville | Florida | Project Manager

Mr. Burnham has served as our project manager for multiple studies with the JEA, including 1) understanding the forms of business organization being applied to the sewer business, and practices used in the industry for conversion of septic tanks to central sewer service, 2) identifying the costs associated with treatment of landfill leachate from the City of Jacksonville to support new service rates, and 3) a comprehensive cost of service and rate design study to support the update of all fees and charges using more detailed data (including hourly customer metering data) and granular approaches intended to result in enhanced equity, transparency, conservation, and affordability of service to its diverse customer base.

Town of Front Royal | Virginia | Project Manager

Mr. Burnham served as project manager for a water and sewer comprehensive cost of service and rate study and subsequent updates to the initial study. He used our FAMS-XL model to develop a ten-year financial management plan and plan of annual rate adjustments to meet all of the utility's financial obligations in each year of the projection period. Mr. Burnham developed three alternative conservation rate structures for consideration that would recover the identified cost of service from the financial management plan and prepared customer impact analyses for each alternative. The analysis also included the review of and updates to current outside-town rate differentials.

Diamondhead Water & Sewer District | Diamondhead, Mississippi | Project Manager

Mr. Burnham served as the project manager for a comprehensive cost of service for the District. During the study, we provided updates to the water and sewer rates, taking into account capital funding challenges resulting from FEMA reimbursement delays. Mr. Burnham has also managed the preparation of a Bond Feasibility Report and a benchmarking analysis in which we compared the District's operations to industry standards and local entities.

Orange County | Florida | Project Manager

Mr. Burnham has served as the project manager or a lead consultant for the County for over 15 years. During that time, he has conducted several revenue sufficiency analyses to ensure adequate revenue to meet projected cost requirements, periodic water and wastewater impact fee studies, water and sewer rate structure analysis, reclaimed water cost of service study and presentations of the results to management, elected officials and other stakeholders. In addition, he led a bond feasibility study for the County including preparation of a bond report. The recommendations from our services have generally been implemented and the utility has been able to maintain a very good credit rating with low rates and annual rate adjustments.

Town of Cary | North Carolina | Project Manager

Mr. Burnham served as the project manager for a Bond Feasibility Study for the Town which included the development of a Financial Model. During the study, Mr. Burnham led the development of a multi-year financial forecast using our FAMS-XL model. He developed a capital financing plan that included alternative funding options to minimize the rate impacts on existing rate payers as well as to comply with existing bond covenants. He worked closely with staff to prepare a bond feasibility report consistent with prior reports, modified based upon his experience.

Marion County | Florida | Project Manager

Mr. Burnham has served as the project manager for the County for over ten years. During this time, he has managed a variety of initiatives including multiple water, wastewater, and irrigation revenue sufficiency analysis to ensure adequate revenues to meet projected cost requirements; development of inclining block rates, as well as a plan for common rate structure through the County which combined five disparate rate districts into one common inclining block rate structure; and development of a detailed customer impact analysis to demonstrate the impact of the new rate structure upon the cost of service to all customers classes in each rate district.

City of Greenfield | California | Project Manager

Andy served as project manager during the conduct of a long-overdue comprehensive water and wastewater rate study for Greenfield. Rates were designed to fund the utility's projected costs of providing service while proportionally allocating costs among customers, providing a reasonable and prudent balance of revenue stability, and complying with the substantive requirements of California Constitution Article XIII D, Section 6 (Prop 218).

Pasco County | Florida | Project Manager

Andy was the project manager for the County's water, sewer & reclaimed water rate study. The study included a five and ten-year revenue sufficiency analysis during which he reviewed alternative capital improvement funding sources, target debt service coverage levels, levels of operating and capital reserves, and other financial policies/goals that affect the financial performance of the utility systems and future revenue requirements. He analyzed their financial goals and objectives and scenarios regarding alternative capital improvement spending programs, cost escalation factors, levels of impact fees and miscellaneous charges, changes in usage patterns, and elasticity of demand in response to rate increases and conservation measures.

Orange Water & Sewer Authority | North Carolina | Project Manager

Mr. Burnham has served as project manager for OWASA for water, wastewater, and reclaimed water financial consulting services for nearly ten years. He has conducted several studies including several long-term financial plans, detailed cost allocation to support rate design, evaluation of affordability for low-income users, and bond feasibility studies.

City of Chesapeake | Virginia | Project Manager

Mr. Burnham served as the project manager for a comprehensive cost of service rate study, during which we 1) developed an updated multi-year financial forecast and plan of annual rate adjustments, 2) evaluated peak demands and cost allocations by customer class, 3) assessed the customer impacts of alternative rate structures by class of customer, 4) updated specific service charges and connection fees, 5) reviewed billing practices and made recommendations for improvements, and 6) provided customized modeling tools for the City's future use. The study culminated in the City's successful transition from a single rate structure for all customer classes to different rates and rate structures for each defined customer class.

Pere Marquette Township | Michigan | Project Manager

Mr. Burnham served as project manager for the Township in negotiating their wholesale water supply rate with their provider. After lengthy negotiations, the parties agreed to a rate structure which reduced the Township's purchased water costs and provided incentive for the attachment of a major user to the Township's system. Once purchased water costs were finalized, expected revenues reflecting the new customer addition, operating, debt, and capital costs were developed for the Township. This allowed the Township to examine the future sustainability of their operations. Water and sewer rate recommendations were presented to the Township's Board.

City of Punta Gorda | Florida | Project Manager

Andy conducted a comprehensive water and wastewater rate study involving the development of: a long-term financial plan of annual rate adjustments, full-cost recovery impact fees for consideration, and rate structure modifications of both the tiers and block rates to encourage conservation. Andy assisted the City by providing a detailed cost-of-service analysis which isolated water and sewer service costs. He also developed and updated several miscellaneous fees which included: fire protection fees, treated water rates, and irrigation rates. As part of the study, he identified the drivers of rate adjustments and their impacts to various customer types and presented the results to management and elected officials.

City of Denton | Texas | Project Manager

Andy led a comprehensive cost of service and rate design study for the City's water and sewer utilities. The study included the development of a ten-year financial management plan, including identification of annual rate increases, amount and timing of required borrowing to fund the capital improvement program, establishment of proper reserve levels, and maintenance of adequate debt service coverage levels. An important component in the financial management plan for the City was a rate stabilization reserve to address the issue of revenue volatility due to weather conditions and demand reductions.

City of Venice | Florida | Project Manager

Mr. Burnham has served as project manager for the City since 2012. He managed a comprehensive water and sewer rate study during which he utilized our FAMS-XL model to evaluate the adequacy of the revenue provided by the Utility's current rates and charges, and he also reviewed the Utility's current rate structure and developed modifications based upon legal precedent, conformance to accepted industry practice, an equitable distribution of costs, promoting resource conservation, and customer impact objectives. He led a series of work sessions with a Stakeholder Work Group, comprised of representatives from the community, which unanimously endorsed our recommendations, and were approved by the City Council.

Henrico County | Virginia | Project Manager

Mr. Burnham served as the project manager for a rate study detailing revenue requirements, cost of service allocations, financing alternatives, and recommended rates and fees. The Study included a ten-year projection of all operating costs and capital improvement costs and the determination of the annual revenue required to support those costs. Notably, he reviewed and made recommendations regarding cost of service studies that were prepared by the County related to purchased water from other entities in the area.

City of Naples | Florida | Project Manager

Andy served as the project manager for the City's comprehensive water and sewer rate study. Andy worked with City staff to customize a multi-year financial forecasting model. He also reviewed the current water and sewer rate structures and developed modifications to ensure the City's rates conformed to accepted industry practice and reflected the appropriate distribution of system costs, while providing cost incentive to encourage water conservation.

Brunswick-Glynn County Joint Water & Sewer Commission | Georgia | Project Manager

Mr. Burnham has 1) developed annual ten-year financial management plans for the water and sewer systems within the JWSC's two districts, 2) prepared loan and bond feasibility reports, 3) calculated updated water and sewer capital tap fees (impact fees) for each district, 4) calculated public and private fire protection charges, 5) developed a uniform conservation rate structure for its two service districts, and 6) prepared a detailed rate manual that explains the purpose, intent, and structure of all its rates, fees, and charges.

City of St. Petersburg | Florida | Project Manager

Mr. Burnham has served as project manager for the City for over 10 years of annual water, sewer and reclaimed water rates studies. Annually, he manages an update to the multi-year financial plan, detailed cost allocation analyses of the water, wastewater and reclaimed water costs and evaluation of rate structures. He has also providing litigation support for the City along with support in the issuance of revenue bonds.

FINANCIAL SERVICES AND MANAGEMENT

Western Area Water Authority | North Dakota | Project Manager

Andy served as the project manager on a financial feasibility study for the Authority as required by the 2017 legislature. As part of the study, our team quantified the amount of excess capacity available on a locational basis to evaluate the potential of firm and interruptible service offerings that would effectively change the Authority's primary role to more of a pure wholesaler of water to local private water companies. The study incorporated potential revenue from a new concession-based business model, with the intent of stabilizing cash flows and achieving financial sustainability to support continued domestic rural water supply in the area.

City of Ann Arbor | Michigan | Project Manager

Mr. Burnham led a detailed cost of service study that evaluated multiple forecasts of revenue requirements and rate adjustments with stakeholders under a variety of assumptions and capital funding strategies. As part of the study, we analyzed the City's available data, customer usage patterns (on a monthly, daily, and hourly basis) past studies, and objectives to determine appropriate customer classes, cost of service methodologies, and rate structures that satisfied annual revenue requirements, adhered to cost of service, promoted conservation, and enhanced affordability. Notably, our review of available data led to the creation of a cost-based tiered rate structure and creation of a new multifamily rate classification.

City of Clearwater | Florida | Project Manager

Mr. Burnham has served as project manager for the City's annual water, sewer, reclaimed water, solid waste, and recycling and stormwater rate studies. Each year, he oversees a detailed analysis of historical customer demand data, including the development of multi-year projections of the same based upon current economic and environmental conditions. As part of each study, a multi-year financial forecast and rate adjustment plan is developed for each utility. Mr. Burnham also developed rate structures for the City that ensure fair and equitable rates and conformance to accepted industry practice and legal precedent. Each study included presentations of the results to City management, elected officials, and stakeholders.

City of Olathe | Kansas | Project Director

Andy served as the project director for a Comprehensive Utility Rate Study for the City. For each service – including Solid Waste, Water, Sewer, and Stormwater – we developed customized financial models including ten-year financial plans and identification of alternative plans of rate adjustments, reviews of alternative capital spending and operational scenarios, and other sensitivity analyses. Andy provided guidance to support the detailed cost allocation analyses for each fund, and development of alternative rate structures to ensure the City is charging fair and equitable rates for each service.

Union County, North Carolina | Project Manager

Mr. Burnham has served as project manager for the County's water & sewer financial planning model and bond feasibility study. He developed the financial planning model to simulate the utility system's particular financial dynamics over a 10-year planning horizon, including the specific financial structure and flow of funds associated with the Bond Feasibility Study.

Pinellas County | Florida | Project Manager

Andy has served as the project manager for the County for nearly ten years, including a comprehensive Water, Wastewater and Solid Waste Rate Study and several annual updates. During these studies, Mr. Burnham has used our FAMS-XL model to develop ten year financial plans for the water, sewer and solid waste enterprise funds. He has also conducted a benchmarking analysis, assisted County staff in evaluating the underlying cost of operations, and conducted detailed cost allocation and overhead studies for the Utilities Department.

City of Tempe, Arizona | Project Manager

Mr. Burnham served as the project manager on a recent Water and Sewer Rate Study for the City. The study included the development of several alternative multi-year financial plans and corresponding plans of annual rate adjustments. We also completed a detailed cost of service allocation analysis and rate design study, which resulted in recommendations for adjustments to enhance specific linkages to cost of service, and consider reasonable irrigation for larger lots sizes while continuing to provide affordability and conservation pricing for excessive use. Finally, we participated in multiple special-purpose stakeholder meetings to educate the community on the process and the new rate structure.

Water and Wastewater System Advisory | Nashville, Tennessee | Project Manager

Andy has served in multiple advisory roles to the District to address complex issues related to its multi-jurisdictional water and wastewater system. One of his first assignments was to customize a financial planning model to reflect the District's operations. He also worked collaboratively to create a financial forecasting tool in alignment with the current budgeting and capital planning processes.

Town of Gilbert | Arizona | Project Manager

Andy served as the project manager for a comprehensive Water, Sewer, Reclaimed Water, Environmental Services (Sanitation), and Stormwater Rate Study (Study) for the Town. As part of the study, for each utility system, we performed a revenue sufficiency analysis, detailed cost of service allocation, and rate structure analysis. We developed several modifications to the Town's existing rate structures, notably including a new inclining block water rate structure. Mr. Burnham also completed a cost allocation study for the wastewater system and a stormwater rate program feasibility study.

STORMWATER

City of Bismarck | Bismarck, North Dakota | Project Manager

Andy served as the Project Manager to lead the City in its comprehensive Water, Wastewater and Stormwater Rate Study. During this studies, Andy and our team helped City staff bring stakeholders together in evaluating solutions for rate structure and implementation plan recommendations. The project included justifying customer classifications with the use of AMI billing data, and detailed cost allocations in support of significant changes to customers' utility rates.

City of St. Petersburg - Water Resources Rate Studies | St. Petersburg, Florida, United States | Project Manager

Mr. Burnham created an innovative, data-driven method to understand the impacts of implementing a tier-based rate structure. Specifically, the method captured the impervious area for about 1,300 residential properties, and ensured that the properties included in the sample were consistent with the residential property size distribution of the full City. The percentage of impervious area to parcel size from the sample was applied to all residential parcels to establish an estimated impervious area database for creating a tiered structure and evaluating customer impacts. He then employed a novel data visualization approach that allowed for on-the-fly changes to the rate structure and real time GIS feedback, including a map illustrating the location of residential parcels and bill impacts. In this transparent and consensus-building way, The City and its stakeholders were able to see the likely impacts of alternative residential tier-based rate structures prior to proceeding with a very different fee schedule.

Stormwater Rate and Service Assessment | Ann Arbor, Michigan | Project Manager

Andy reviewed the level of service being provided in this comprehensive stormwater rate and level of service assessment. He looked at multiple areas and identified alternative options along with their corresponding cost and rate implications. Additionally, Andy conducted a series of interactive work sessions with representatives of various customer groups within the community to prioritize the identified level of service enhancements.

City of Columbia | Missouri | Project Manager

Andy managed a comprehensive stormwater and sewer cost of service rate studies for the City. He performed a revenue sufficiency analysis in order to develop a multi-year plan of rate revenue increases to satisfy the annual operating, debt service, and capital requirements of each utility as well as maintain adequate operating reserves. He then reviewed the rate structure (including evaluation of rates for wholesale users), and developed recommended modifications to ensure that the rates conformed to accepted industry practice and reflect a fair and equitable distribution of system costs.

City of North Port | Florida | Project Manager

Andy managed the development of an alternative cost apportionment methodology and resultant alternative road and drainage (stormwater) assessments for the City. The methodology focused on the drainage portion of the assessment, but also included a detailed apportionment of costs to the road, mowing, and drainage functions. We obtained relevant parcel data and developed compilation programs to facilitate calculation of assessments using the alternative cost apportionment methods evaluated. He has conducted periodic updates to the assessment.

PUBLICATIONS

Westover K., A. Burnham. Balancing Storm Water Management Costs with Citizen Engagement. *Storm Water Solutions*, 2020.

Zieburtz. W., M. Coopersmith, and A. Burnham. Water Reuse Cost Allocations and Pricing Survey. *American Water Works Association*, 2019.

Bui, A., A. Burnham, W. Zieburtz. Survey Results Provide Water Reuse Cost Allocations and Pricing Guidance. . *Journal American Water Works Association*, 2019, pp. pp. 60-63..

Burnham, A., D. Hyder and P. Luce. Toho Water Authority's Unique Approach to Pricing Irrigation Water. *Florida Water Resources Journal*, 2019, pp. 56-59.

Refining Stormwater Rates and Improving Community Support. American Water Works Association Annual Conference & Exposition. *Las Vegas, NV*, 2018.

The Perks of Seeing the Peaks, American Water Works Association Annual Conference & Exposition. *Las Vegas, NV*, 2018.

Happy Stakeholders, Equity, and Conservation Rates. American Water Works Association Annual Conference & Exposition. *Las Vegas, NV*, 2018.

Burnham, A. (co-author). Money Matters - Utility Cash Reserves. *Journal AWWA*, 2018.

Paying for Stormwater - Engaging the Community. *American Public Works Association Annual Conference (PWX), Orlando, FL*, 2017.

Can Conservation Rates be Tied to the Cost to Serve?. *American Water Works Association Annual Conference & Exposition, Philadelphia, PA*, 2017.

Reclaimed Water Expansion:
An Approach that Makes Sense. *American Water Works Association Annual Conference & Exposition, Philadelphia, PA*, 2017.

Interactive Modeling Process to Improve Fiscal Stability and Sustainability. *Michigan Township Association Annual Meeting, Traverse City, MI*, 2014.

Utility Ratemaking & Management. *North Carolina Government Finance Officers Association Summer Conference, Wrightsville Beach, NC*, 2016.

Rate and Fee Panel Discussion, a National Financial Perspective. *AWWA Michigan Sector, Northville, MI*, 2017.

Cost-of Service Based Conservation Rates, Evolving from Art to Science. *Utility Management Conference, Tampa, FL*, 2017.

Water & Sewer Rate Studies. *Michigan Governmental Finance Officers Association, Lansing, MI*, 2015.

High Level Rate Making. *Florida Water Environment Association Chapter Luncheon, Sarasota, FL*, 2014.

Reclaimed Water Cost of Service Studies, an Advanced Example. *Water Reuse Symposium, Seattle, WA*, 2015.

Tackling Utility Rates the Right Way. *Michigan Municipal League Annual Convention, Marquette, MI*, 2014.

Features of Successful Inclining Block Water Conservation Rate Structures. *Texas Water Conservation Association Annual Meeting, Austin, TX*, 2015.

Co-Author, Long-Term Financial Modeling and Sustainability Analysis. *Florida Governmental Finance Officers Association School of Government, Sarasota, FL*, 2013.

PRESENTATIONS

Financial Instruments to Support Sustainability & Addressing Customer Equality and Affordability. *Canadian Water Network Blue Cities* , 2019.

Lessons Learned: Asset Management Plan Analysis. *Manitoba Planning Conference*, 2019.

Cost Allocation and Rate Design: Water. *IPU's Advanced Studies Program*, 2019.

Defining Affordability: Is Water a Right? (Panel Discussion). *2018 Water Finance Conference. Washington, DC*, 2018.

Lessons Learned - Integrating AMP Findings into a Sustainable Financial Plan. *Asset Management Seminar. Michigan*, 2019.

Rate and Budget Planning for Utilities. *Florida Section of the American Water Works Association Region IV Spring 2018 Seminar*, 2018.

AGENCY/STATE	PROJECT DESCRIPTION	YEAR
Arizona	Testimony in Docket No. WS-01303A-02-0867, et. al before the Arizona Corporation Commission on behalf of the Town of Youngtown relative its utility provider's proposed increase in revenue requirements and rate adjustments.	2003
Delaware	Direct and rebuttal reports as well as deposition before the American Arbitration Association in Case No. 01-19-0000-8779 on behalf of the City of Wilmington relative to the basis and methodology employed by the City in allocating wastewater treatment costs and establishing wholesale sewer rates.	2021
Federal Energy Regulatory Commission	Testimony in Docket No. ER03-574-000, et. al, relative to appropriate cost of service allocations and pricing of short and long-term electric transmission service within and between regional transmission organizations, including utility revenue sharing mechanisms.	2003
Florida	Testimony in Docket No.: 04-0007-0011-0001 before the St. Johns County Water & Sewer Authority relative to the calculation of additional water rate revenue required to recover the return of and on water plant investments on behalf of a private, investor-owned utility (Intercoastal Utilities, Inc.).	2004
	Affidavit and deposition in Case No. 8:09-CV-01317-T-33MAP before the United States District Court, Middle District of Florida, Tampa Division on behalf of the City of St. Petersburg, Florida relative to the basis and methodology employed by the City in setting its wholesale sewer rates.	2009
	Affidavit in Case No. 12-3155-CAB before the Fifth Judicial Circuit Court in and for Marion County in support of the acquisition of and rate structure for a private water and sewer system on behalf of the City of Dunnellon.	2013
	Testimony in Case No. CACE22013802 before the Seventeenth Judicial Circuit Court in and for Broward County in support of the cost allocation methodology and capital funding plan for the stormwater management system on behalf of the City of Fort Lauderdale.	2022
Indiana	Rebuttal testimony in Cause No. 45533 before the Indiana Utility Regulatory Commission on behalf of the City of Bloomington relative to cost of service and rate design aspects of proposed water rates and charges.	2021
Michigan	Affidavit in Case No. U-13739 before the Michigan Public Service Commission on behalf of Consumer Energy in regards to the classification of electric transmission and distribution facilities of a service provider.	2003
	Direct and rebuttal testimony in Case No. U-13917 before the Michigan Public Service Commission on behalf of Consumer Energy in regards to electric transmission cost forecasting, rate structures and service types, current wholesale industry trends, and appropriate cost recovery mechanisms for local distribution companies.	2004
	Testimony in File No. 15-5343-AW before the Circuit Court of Lenawee County, Michigan on behalf of Gaslight Village Assisted Living, LLC in regards to the proper level of connection and benefit fees for Adrian Township applicable to the assisted living facility and other customers	2016
	Testimony in File No.: 14-006077-CK before the 26th Circuit Court for the County of Alpena, MI on behalf of Alpena Township as to appropriate water and sewer rates for service provided by the City of Alpena to the Township.	2018

Minnesota	Affidavit in Court File No.: 62-CV-18-2356 before the 2nd District Court for the County of Ramsey, MN on behalf of the City of Saint Paul, Board of Water Commissioners, and Saint Paul Regional Water Services regarding the appropriate application of and methodology for calculating base fees and right of way recovery fees.	2019
United States Virgin Islands	Testimony in Docket No. 554 before the Government of the U.S. Virgin Islands Public Service Commission relative to the establishment of a wastewater user fee on behalf of the Virgin Islands Waste Management Authority. The testimony presented the basis for and methodology employed in calculating the user fee and supporting data.	2007

Petitioner's Exhibit 14

Exhibit 14

Schedule 1 Allocation Factors
Schedule 1A Utility Administration Support FTEs
Schedule 1B Capital Improvement Program
Schedule 2 Water Phase I Revenue Requirements by Function
Schedule 3 Water Non-Rate Revenue Allocation
Schedule 4 Functions & Flows
Schedule 5 Units of Service
Schedule 6 Max Day and Max Hour Compression Factors by Class
Schedule 7 Fire Protection Units of Service by Fire Protection Class (Public or Private)
Schedule 8 Unitization
Schedule 9 Water Cost of Service

Schedule 1 Allocation Factors

Function Allocation Factors:

Line		Function: Treatment Allocation	Function: Distribution Allocation	Function: Customer Allocation
1	Customer	0.0%	0.0%	100.0%
2	Weighted Expenses[1]	59.2%	28.3%	12.5%
3	CIP Cash[2]	87.1%	12.9%	0.0%
4	CIP BOND[3]	0.0%	39.6%	60.4%
5	Administrative[4]	45.8%	37.5%	16.7%
6	Distribution	0.0%	100.0%	0.0%
7	Wells[5]	100.0%	0.0%	0.0%
8	Treatment	100.0%	0.0%	0.0%

[1] Allocation split based on the weighted average of all direct allocated expenses
[2] Allocation split based on a two year average (Phase I and II) of Cash funded CIP projects
[3] Allocation split based on a two year average (Phase I and II) of Bond funded CIP projects
[4] Allocation split based on a administrative FTE's, excluding customer service & accounting as that labor is a direct allocation to Customer
[5] Expenses related to the operation and maintenance of wells were assigned to the Treatment function. Given the majority of well expenses are for pumping it was appropriate to functionalize as treatment to allocate to both base and extra capacity max day demands.

Schedule 1A Utility Administration Support FTEs

Marion Utilities FTE by Department

			Water Breakdown[3]		
Utility-Workgroup	**FTE's**	**Water[2]**	**Treatment**	**Distribution**	**Customers**
Administration (Serving all four Utilities)					
Director	1	0.25	0.08	0.08	0.08
Asst. Directors	2	0.5	0.17	0.17	0.17
Support Staff	6	1.5	0.50	0.50	0.50
HR	1	0.25	0.13	0.13	
Accounting[1]	1	0.25			
Communications	1	0.25	0.00	0.00	0.25
Customer Service[1]	5	1.25			
IT	2	0.5	0.25	0.25	
Safety	1	0.25	0.13	0.13	
Environmental Resources	2	0.5	0.25	0.25	
Program Support	2	0.5	0.25	0.25	
Laboratory	2	0.5	0.50		
Vehicular Maintenance	1	0.25	0.13	0.13	
Engineering	3	0.75	0.38	0.38	
Sub-Total Administration[1]	**24**	**6**	**2.8**	**2.3**	**1.0**
			45.83%	**37.50%**	**16.67%**

[1] Water Accounting and Customer Service are directly allocated to the Customer function through the Customer Accounts Expense Line Items shown on Schedule 2 of Exhibit 14

[2] Utility Administration supports all four of the Utility Services, Water, Wastewater, Solid Waste and Stormwater. The FTEs were split evenly to each service.

[3] Utility Administration supports all four of the Utility Services, Water, Wastewater, Solid Waste and Stormwater. The FTEs were split evenly to each service.

Schedule 1B Capital Improvement Program

Project No.	Funding[1]	Description	Function	Phase I	Phase II	Total
1	CASH	Building Repairs/Roof Replacement	Treatment	$50,000	$50,000	$100,000
2	CASH	Miscellaneous Plant Updates	Treatment	$50,000	$50,000	$100,000
3	CASH	Well Repairs Cleaning/Maintenance	Treatment	$50,000	$75,000	$125,000
4	CASH	Pickup Truck Replacement	Treatment	$35,000	$0	$35,000
5	CASH	East Claricone Upgrade	Treatment	$0	$250,000	$250,000
6	CASH	Clear Well Rehabilitation	Treatment	$0	$200,000	$200,000
7	CASH	Plant Lot Paving	Treatment	$50,000	$0	$50,000
8	CASH	Filter Media Upgrade	Treatment	$0	$50,000	$50,000
9	CASH	CO2 System Upgrade	Treatment	$0	$0	$0
10	CASH	Mower Replacement	Treatment	$0	$0	$0
11	CASH	TriAxle Dump/Lime Removal Equipment	Treatment	$0	$0	$0
12	DEBT	Butler Street Tank Coating/Improvements	Distribution	$1,000,000	$0	$1,000,000
13	DEBT	SR18 Booster Station Improvements	Distribution	$80,000	$0	$80,000
14	DEBT	Lead/Copper Survey	Distribution	$150,000	$150,000	$300,000
15	DEBT	Water Main Replacement	Distribution	$500,000	$500,000	$1,000,000
16	CASH	Hydrant/Valve Replacement	Distribution	$50,000	$50,000	$100,000
17	DEBT	Lead/Copper Abatement	Distribution	$0	$500,000	$500,000
18	DEBT	Water Meter Replacement/AMI	Customer	$4,400,000	$0	$4,400,000
19	CASH	Pickup Truck Replacement	Distribution	$35,000	$0	$35,000
				$ 6,450,000	$ 1,875,000	$ 8,325,000

Water - Cash			Total	Allocation Factors
Treatment	$235,000	$675,000	$910,000	87.1%
Distribution	$85,000	$50,000	$135,000	12.9%
Customer	$0	$0	$0	0.0%
Total	**$320,000**	**$725,000**	**$1,045,000**	

Water - Debt				Allocation Factors
Treatment	$0	$0	$0	0.0%
Distribution	$1,730,000	$1,150,000	$2,880,000	39.6%
Customer	$4,400,000	$0	$4,400,000	60.4%
Total	**$6,130,000**	**$1,150,000**	**$7,280,000**	

Schedule 2 Water Phase I Revenue Requirements by Function

Line	Expense Line Item	Department	Code	Phase I[1] Water Expenses	Allocation Factor	Phase I Treatment Costs	Phase I Distribution Costs	Phase I Customer Costs
1	Employee Benefits and Taxes	Wells Expense	PS	$ -	Wells	$ -	$ -	$ -
2	Utilities	Wells Expense	PS	$ 124,157	Wells	$ 124,157	$ -	$ -
3	Materials and Supplies	Wells Expense	PS	$ 282	Wells	$ 282	$ -	$ -
4	Contractual Services	Wells Expense	PS	$ 551	Wells	$ 551	$ -	$ -
5	Insurance	Wells Expense	PS	$ 1,152	Wells	$ 1,152	$ -	$ -
6	Materials and Supplies	Wells Maintenance Expense	PS	$ 2,831	Wells	$ 2,831	$ -	$ -
7	Contractual Services	Wells Maintenance Expense	PS	$ 2,934	Wells	$ 2,934	$ -	$ -
8	Insurance	Wells Maintenance Expense	PS	$ 1,152	Wells	$ 1,152	$ -	$ -
9	Salaries and Wages	Treatment Plant Expense	PS	$ 203,470	Treatment	$ 203,470	$ -	$ -
10	Employee Benefits and Taxes	Treatment Plant Expense	PS	$ 110,510	Treatment	$ 110,510	$ -	$ -
11	Materials and Supplies	Treatment Plant Expense	PS	$ 57,328	Treatment	$ 57,328	$ -	$ -
12	Chemicals	Treatment Plant Expense	PS	$ 603,860	Treatment	$ 603,860	$ -	$ -
13	Utilities	Treatment Plant Expense	PS	$ 160,569	Treatment	$ 160,569	$ -	$ -
14	Contractual Services	Treatment Plant Expense	PS	$ 50,765	Treatment	$ 50,765	$ -	$ -
15	Transportation	Treatment Plant Expense	PS	$ 10,213	Treatment	$ 10,213	$ -	$ -
16	Insurance	Treatment Plant Expense	PS	$ 17,427	Treatment	$ 17,427	$ -	$ -
17	Miscellaneous	Treatment Plant Expense	PS	$ -	Treatment	$ -	$ -	$ -
18	Salaries and Wages	Treatment Plant Maintenance Expense	PS	$ 326,154	Treatment	$ 326,154	$ -	$ -
19	Employee Benefits and Taxes	Treatment Plant Maintenance Expense	PS	$ 164,993	Treatment	$ 164,993	$ -	$ -
20	Materials and Supplies	Treatment Plant Maintenance Expense	PS	$ 40,804	Treatment	$ 40,804	$ -	$ -
21	Contractual Services	Treatment Plant Maintenance Expense	PS	$ 52,099	Treatment	$ 52,099	$ -	$ -
22	Transportation	Treatment Plant Maintenance Expense	PS	$ 17,982	Treatment	$ 17,982	$ -	$ -
23	Insurance	Treatment Plant Maintenance Expense	PS	$ 10,530	Treatment	$ 10,530	$ -	$ -
24	Employee Benefits and Taxes	Distribution Expense	PS	$ -	Transmission & Distribution	$ -	$ -	$ -
25	Materials and Supplies	Distribution Expense	PS	$ 905	Transmission & Distribution	$ -	$ 905	$ -
26	Contractual Services	Distribution Expense	PS	$ -	Transmission & Distribution	$ -	$ -	$ -
27	Insurance	Distribution Expense	PS	$ 2,303	Transmission & Distribution	$ -	$ 2,303	$ -
28	Salaries and Wages	Distribution Maintenance Expense	PS	$ 285,939	Transmission & Distribution	$ -	$ 285,939	$ -
29	Employee Benefits and Taxes	Distribution Maintenance Expense	PS	$ 94,242	Transmission & Distribution	$ -	$ 94,242	$ -
30	Materials and Supplies	Distribution Maintenance Expense	PS	$ 152,909	Transmission & Distribution	$ -	$ 152,909	$ -
31	Contractual Services	Distribution Maintenance Expense	PS	$ 136,821	Transmission & Distribution	$ -	$ 136,821	$ -
32	Transportation	Distribution Maintenance Expense	PS	$ 48,534	Transmission & Distribution	$ -	$ 48,534	$ -
33	Insurance	Distribution Maintenance Expense	PS	$ 18,232	Transmission & Distribution	$ -	$ 18,232	$ -
34	Salaries and Wages	Customer Accounts Expense	PS	$ 57,483	Customer	$ -	$ -	$ 57,483
35	Employee Benefits and Taxes	Customer Accounts Expense	PS	$ 25,357	Customer	$ -	$ -	$ 25,357
36	Materials and Supplies	Customer Accounts Expense	PS	$ 1,516	Customer	$ -	$ -	$ 1,516
37	Contractual Services	Customer Accounts Expense	PS	$ 115,917	Customer	$ -	$ -	$ 115,917
38	Transportation	Customer Accounts Expense	PS	$ 2,601	Customer	$ -	$ -	$ 2,601
39	Insurance	Customer Accounts Expense	PS	$ 10,297	Customer	$ -	$ -	$ 10,297
40	Miscellaneous	Customer Accounts Expense	PS	$ 1,302	Customer	$ -	$ -	$ 1,302
41	Salaries and Wages	Administrative and General Expense	PS	$ 472,380	Administrative	$ 216,508	$ 177,143	$ 78,730

Schedule 2 Water Phase I Revenue Requirements by Function

	Expense Line Item	Department	Code	Phase I [1] Water Expenses	Allocation Factor	Phase I Treatment Costs	Phase I Distribution Costs	Phase I Customer Costs
42	Employee Benefits and Taxes	Administrative and General Expense	PS	$ 239,470	Administrative	$ 109,757	$ 89,801	$ 39,912
43	Materials and Supplies	Administrative and General Expense	PS	$ 20,839	Administrative	$ 9,551	$ 7,815	$ 3,473
44	Contractual Services and Service Cha	Administrative and General Expense	PS	$ 214,079	Administrative	$ 98,120	$ 80,280	$ 35,680
45	Transportation	Administrative and General Expense	PS	$ 15	Administrative	$ 7	$ 6	$ 3
46	Insurance	Administrative and General Expense	PS	$ 6,232	Administrative	$ 2,856	$ 2,337	$ 1,039
47	Miscellaneous	Administrative and General Expense	PS	$ 9,056	Administrative	$ 4,151	$ 3,396	$ 1,509
48	FICA Taxes	Taxes Other Than Income Taxes	PS	$ 102,639	Administrative	$ 47,043	$ 38,490	$ 17,107
49	Utility Receipts Tax	Taxes other than Income		$ -	Administrative	$ -	$ -	$ -
50				**$ 3,978,831**		**$ 2,447,755**	**$ 1,139,151**	**$ 391,925**
	Transfers							
51	Fund Balance Contribution			$ 7,248	Weighted Expenses	$ 4,290	$ 2,049	$ 909
52				**$ 7,248**		**$ 4,290**	**$ 2,049**	**$ 909**
	Debt Service							
53	Waterworks Revenue Bonds, Series 2023			$ 307,128	CIP BOND	$ -	$ 121,501	$ 185,627
54				**$ 307,128**		**$ -**	**$ 121,501**	**$ 185,627**
	Cash-Funded Capital							
55	Cash Funded Capital		CIP	$ 320,000	CIP Cash	$ 278,660	$ 41,340	$ -
56				**$ 320,000**		**$ 278,660**	**$ 41,340**	**$ -**
57				**$ 4,613,207**		**$ 2,730,706**	**$ 1,304,041**	**$ 578,460**

Sources:
[1] Crowe Adjusted Test Year Expenses, Adjusted Income Statement, Petitioner's Exhibit 11

Schedule 3 Water Non-Rate Revenue Allocation

Line	Non-Rate Revenue Line Item	Type	FY 2023 Projection Revenue for COSA		Residential	Commercial	Industrial	Institutional	Fire Protection - Public	Fire Protection - Private	Residential	Commercial	Industrial	Institutional	Fire Protection - Public	Fire Protection - Private
	Other Operating Revenue															
1	Forfeited Discounts	Other Operating Revenue	$ 25,127	WCOSA Weighted	49.1%	16.4%	7.0%	13.7%	10.9%	2.9%	$ 12,342	$ 4,109	$ 1,765	$ 3,447	$ 2,730	$ 735
2	Miscellaneous Revenue	Other Operating Revenue	$ 78,326	WCOSA Weighted	49.1%	16.4%	7.0%	13.7%	10.9%	2.9%	$ 38,471	$ 12,808	$ 5,501	$ 10,746	$ 8,509	$ 2,291
3	Other Non-Operating Income	Other Non-Operating Revenue	$ -	WCOSA Weighted	49.1%	16.4%	7.0%	13.7%	10.9%	2.9%	$ -	$ -	$ -	$ -	$ -	$ -
4			$ 103,453								$ 50,813	$ 16,916	$ 7,265	$ 14,194	$ 11,238	$ 3,026

Schedule 4 Functions & Flows

Line	Function	Cost Component: Base Capacity Avg Day	Cost Component: Extra Capacity Max Day	Cost Component: Extra Capacity Max Hour	Cost Component: Customers
1	Treatment [1]	79%	21%		
2	Distribution [2]	44%	12%	44%	
3	Customer [3]	0%	0%	0%	100%

Line	Function	Avg Day	Max Month	Max Day	Max Hour
4	Water System Demands (MGD)	3.87	4.15	4.91	8.73
5	Coincident (System) Peaking Factors [4]			1.27	2.25
6	Max Month to Max Day Factor [5]			1.18	

Water Production Flows [6]

Line		Annual Total	Max Month	Max Day	Max Hour
7	2021	1,422,247,000	124,403,000	4,612,000	8,700,000
8	2020	1,365,441,000	127,193,000	4,608,000	8,600,000
9	2019	1,454,528,000	128,433,000	5,497,000	8,900,000
10	**Average**	**1,414,072,000**	**126,676,333**	**4,905,667**	**8,733,333**

Line		Annual Total	Max Month	Max Day	Max Hour
11	2021	3.897	4.079	4.612	8.700
12	2020	3.741	4.170	4.608	8.600
13	2019	3.985	4.211	5.497	8.900
14	**Average**	**3.87**	**4.15**	**4.91**	**8.73**

[1] Treatment Costs are assigned the Base and Max Day Function based on ratio of the Max Day to Average Day Demands.

[2] Distribution Costs are allocated to Base, Max Day, and Max Hour Demands. The Base component is a ratio of the average day demands to the max hour demands. The max day component is the difference between the max day and average day demands divided by the max hour demands. The remainder is assigned to the max hour.

[3] Customer costs are assigned directly to the customer cost component.

[4] Coincident (System) Peaking Factors based on 3 year average (2019-2021). Max Day (MGD) divided by Avg Day (MGD). Peak Hour (MGD) divided by Average Day MGD.

[5] Max Month to Max Day factor based on 3 year average (2019-2021). Max Day(MGD) divided by Max Month (MGD).

[6] Source: Water Production Data.xls provided by Marion.

Schedule 5 Units of Service

Base and Extra Capacity Demands by Customer Class

Line	Base and Extra Capacity Demands by Customer Class	Residential	Commercial	Industrial	Institutional	Total
1	Test Year Annual Use (kgal)	393,622	167,384	75,560	146,421	782,987
2	Average Daily Use (MGD)	1.08	0.46	0.21	0.40	2.15
3	Non-Coincident Max Month Demand Factor (3 year average)	1.14	1.21	1.43	1.29	
4	Non-Coincident Max Month Demand (MGD) (Line 2 * Line 3)	1.23	0.56	0.30	0.52	2.60
5	Coincident Max Month to Max Day Factor (3 Year Average)	1.18	1.18	1.18	1.18	
6	Max Day Compression Factor (Schedule 6)	1.56	1.17	1.17	1.17	
7	Non-Coincident Max Day Demand (MGD) (Line 4 * Line 5 * Line 6)	2.27	0.77	0.41	0.72	4.16
8	Non-Coincident May Day Demand Factor (Line 7 / Line 2)					1.94
9	Coincident Max Day Demand Factor (Schedule 4, Line 5)					1.27
10	System MD Diversity (Line 8 / Line 9)					1.53
11	Max Hour Compression Factor (Schedule 6)	1.60	1.50	1.20	1.53	
12	Noncoincident Max Hour Demand (Line 7 * Line 11)	3.63	1.15	0.49	1.09	6.36
13	Max Hour Demand Factor (Line 12 / Line 2)	3.37	2.50	2.36	2.72	
14	Noncoincident Max Hour Demand Factor (Line 12 / Line 2)					2.97
15	Coincident Max Hour Demand Factor (Schedule 4, Line 5)					2.25
16	System MH Diversity (Line 14 / Line 15)					1.32

Units of Service by Cost Component and Customer Class

Line		Residential	Commercial	Industrial	Institutional	Fire Protection - Public [1]	Fire Protection - Private [1]	Total
	Base Units							
17	Annual Use (kgal)	393,622	167,384	75,560	146,421			782,987
	Max Day Units							
18	Max Day Peaking Factor (Line 7 / Line 2)	2.11	1.67	1.97	1.78			
19	Total Max Day Capacity (kgal)	828,600	279,420	148,889	261,079			1,517,988
20	Extra Capacity (kgal) (Line 19 - Line 17)	434,977	112,036	73,329	114,658	233,729	61,921	1,030,651
	Max Hour Units							
21	Max Hour Peaking Factor (Line 13)	3.37	2.50	2.36	2.72			
22	Total Max Hour Capacity (kgal)	1,325,760	419,131	178,667	398,465			2,322,023
23	Extra Capacity (kgal) (Line 22 - Line 19)	497,160	139,710	29,778	137,386	1,843,864	488,486	3,136,384
	Customer Units							
24	Number of Customers	9,331	1,231	53	292		497	11,404
25	Number of Bills, annually	111,972	14,772	636	3,504		497	131,381

[1] Calculation of public and private fire units of service shown in Schedule 7 of Exhibit 14

Exhibit 14

Schedule 6 Max Day and Max Hour Compression Factors by Class

Line		Residential Base Usage	Percent	Days Used / Week	Average per Day
1	Average Household Size[1]	2.09			
2	Indoor Use per person (Gallons per Capita per Day) [2]	58.60			
3	Annual Usage Gallons (Line 1 * Line 2 * 365)	44,703			
4	Base Monthly Usage[3]	3,725	37%	7	
5	Sprinkling Usage[4]	6,275	63%	3	
6	Total (Line 4 + Line 5)	10,000			2.61
7	% base (Line 5 + Line 6)				1.88
8	Days			7	4.49
9	MD Factor (Line 8 / Line 7)				**1.56**
	Commercial				
10	Days			6	
11	MD Factor[5]				**1.17**
	Industrial				
12	Days			6	
13	MD Factor[6]				**1.17**
	Institutional				
14	Days			6	
15	MD Factor[7]				**1.17**

Schedule 6 Max Day and Max Hour Compression Factors by Class

	Max Hour Factor		**Hours**		
16	Residential		15	1.60	Less typical work day
17	Commercial		16	1.50	Based on 2 8-hour shifts
18	Industrial		20	1.20	Average of 2 8-hour shifts and 3 8-hour shifts
19	Institutional[8]		Below	1.53	
	Institutional	Percent of Sales	Peaking Factor	Weighted Average	
20	Marion Residential	62%	1.60	0.99	
21	Marion Commercial	26%	1.50	0.39	
22	Marion Industrial	12%	1.20	0.14	
23	Total	100%		1.53	

[1] Represents 2016-2020 US Census Bureau data for persons per household in City of Marion, IN
[2] Represents typical indoor usage for residential use, WRF Residential End Uses, Version 2 2016
[3] Converts annual usage gallons to monthly base usage
[4] Estimate of needed amount of water for irrigation on typical lot.
[5] Max Demand Factor based on days per week for Commercial Class
[6] Max Demand Factor based on days per week for Industrial Class
[7] Max Demand Factor based on days per week for Institutional Class
[8] Max Hour Factor for Institutional Class based on combination of Residential, Commercial and Industrial Factors

Schedule 7 Fire Protection Units of Service by Fire Protection Class (Public or Private)

Line			Demand Factor[2]	Equivalent Service Unit (ESU)	Allocation
1	Number of Hydrants - Public [1]	1,876	111.31	**208,819**	79%
2	Number of Hydrants - Private '	305	111.31	**33,950**	13%
3	Number of Sprinklers Head Accounts - Privat	192	111.31	**21,372**	8%
4	Total			**264,141**	

Line		Count of Hydrants or Sprinkler Heads	No. of Accounts
5	Fire Protection Counts [2]		
6	Fire Hydrant - Public	6	
7	Fire Hydrant - Public (ISO report)	1,870	
8	Fire Hydrant - Private[3]	305	305
9	Sprinkler Head - Private[3]	168,795	192

Schedule 7 Fire Protection Units of Service by Fire Protection Class (Public or Private)

Fire Units of Service[4]

	Fire Type	2017-2022 Max Fires/Day[5]	Duration (min)	Gallons/Minute (gpm)[6]	Max Day Demand (MGD)	Max Hour Demand (MGD)
10	Residential	1	120	1,500	0.2	2.2
11	Total Fire (MGD)				0.2	2.2
12	Extra Capacity					2.0
	Fire Type					
13	Non-Residential	1	180	3,500	0.6	5.0
14	Total Fire (MGD)				0.6	5.0
15	Extra Capacity					4.4
	Total Fire (MGD)					
16	Total Fires	2			0.8	7.2
17	Extra Capacity Max Day				0.8	
18	Extra Capacity Max Hour					6.4

[1] Assumes 6" service line
[2] AWWA uses Hazen-Williams equation for flow through pressure conduits as diameter raised to power of 2.63 (AWWA M1 7th Edition, Page 163)
[3] Hydrant and Sprinkler Counts provided by Marion. Includes active accounts and services and excludes vacant hydrants and sprinklers
[4] Marion FD PPC Summary (ISO) Report, Marion FD Incident Report 9-2020 to 8-2022 & Marion FD Alarm Report 1-2017 - 9-2020

[5] Maximum fires/day based on average of (2017-2022) max fire incidents in a single day for structure fires for Marion Fire Department.
[6] Per Marion FD PPC Summary Report, needed fire flows of 2,500 gpm or less should be available for 2 hours; and needed fire flows of 3,000 and 3,500 gpm should be obtainable for 3 hours.

Schedule 8 Unitization

Line	Base - Average Day	Total Cost [1]	Allocation Factor [2]	Average Day Allocation [3]	kgals per Year [4]	Unit Cost [5]
1	Treatment	$ 2,730,706	79.0%	$ 2,156,530	782,987	$ 2.75
2	Distribution	$ 1,304,041	44.4%	$ 578,482	782,987	$ 0.74
3	Customer	$ 578,460	0.0%	$ -	782,987	$ -
4	**Total**	**$ 4,613,207**		**$ 2,735,012**		**$ 3.49**

Line	Extra Capacity Max Day	Total Cost [1]	Allocation Factor [2]	Max Day Allocation [3]	kgals per Year [4]	Unit Cost [5]
5	Treatment	$ 2,730,706	21.0%	$ 574,176	1,030,651	$ 0.56
6	Distribution	$ 1,304,041	11.8%	$ 154,021	1,030,651	$ 0.15
7	Customer	$ 578,460	0.0%	$ -	1,030,651	$ -
8	**Total**	**$ 4,613,207**		**$ 728,196**		**$ 0.71**

Line	Extra Capacity Max Hour	Total Cost [1]	Allocation Factor [2]	Max Hour Allocation [3]	kgals per Year [4]	Unit Cost [5]
9	Treatment	$ 2,730,706	0.0%	$ -	3,136,384	$ -
10	Distribution	$ 1,304,041	43.8%	$ 571,538	3,136,384	$ 0.18
11	Customer	$ 578,460	0.0%	$ -	3,136,384	$ -
12	**Total**	**$ 4,613,207**		**$ 571,538**		**$ 0.18**

Line	Customer	Total Cost [1]	Allocation Factor [2]	Customer Allocation [3]	Annual Bills [6]	Unit Cost [5]
13	Treatment	$ 2,730,706	0.0%	$ -	131,381	$ -
14	Distribution	$ 1,304,041	0.0%	$ -	131,381	$ -
15	Customer	$ 578,460	100.0%	$ 578,460	131,381	$ 4.40
16	**Total**	**$ 4,613,207**		**$ 578,460**		**$ 4.40**

[1] Total cost for each allocation shown in Schedule 2 of Exhibit 14
[2] Allocation factors shown in Schedule 4 of Exhibit 14
[3] Allocation is multiplication of Total Cost and Allocation Factor
[4] Volume per year (Kgals) shown in Schedule 5 of Exhibit 14
[5] Unit Cost calculated by taking Average Day Allocation divided by Kgals per year
[6] Annual Bills shown in Schedule 5, line 25 of Exhibit 14

Schedule 9 Water Cost of Service

Line	Units by Cost Component	Residential	Commercial	Industrial	Institutional	Fire Protection - Public	Fire Protection - Private	Total
1	Base - Annual Use (Schedule 5, Line 1)	393,622	167,384	75,560	146,421	-	-	
2	Extra - Max Day (Schedule 5, Line 20)	434,977	112,036	73,329	114,658	233,729	61,921	
3	Extra - Max Hour (Schedule 5, Line 23)	497,160	139,710	29,778	137,386	1,843,864	488,486	
4	Number of Customer Bills (Schedule 5, Line 25)	111,972	14,772	636	3,504	-	497	
	Unit Costs by Component							
5	Base (Schedule 8, Line 4)	$ 3.49	$ 3.49	$ 3.49	$ 3.49	$ 3.49	$ 3.49	
6	Max Day (Schedule 8, Line 8)	0.71	0.71	0.71	0.71	0.71	0.71	
7	Max Hour (Schedule 8, Line 12)	0.18	0.18	0.18	0.18	0.18	0.18	
8	Customer (Schedule 8, Line 16)	4.40	4.40	4.40	4.40	4.40	4.40	
	Unit Costs Allocated to Classes							
10	Base (Line 1 * Line 5)	$ 1,374,943	$ 584,680	$ 263,935	$ 511,454	$ -	$ -	$ 2,735,012
11	Max Day (Line 2 * Line 6)	307,329	79,158	51,810	81,011	165,139	43,750	728,196
12	Max Hour (Line 3 * Line 7)	90,597	25,459	5,426	25,036	336,004	89,016	571,538
13	Customer (Line 4 * Line 8)	493,004	65,040	2,800	15,428	-	2,188	578,460
15	Total Cost Allocation (Gross)	**$ 2,265,872**	**$ 754,338**	**$ 323,971**	**$ 632,929**	**$ 501,143**	**$ 134,954**	**$ 4,613,207**
16	Less: Other Operating Revenues (Schedule 3, Line 4)	$ (50,813)	$ (16,916)	$ (7,265)	$ (14,194)	$ (11,238)	$ (3,026)	$ (103,453)
17	FY23 Total Cost Allocation (Net) (Line 15 + Line 16)	**$ 2,215,059**	**$ 737,421**	**$ 316,706**	**$ 618,735**	**$ 489,905**	**$ 131,927**	**$ 4,509,754**
18	Existing Revenue[1]	**$ 1,960,077**	**$ 576,452**	**$ 178,409**	**$ 419,617**	**$ 557,141**	**$ 197,236**	$ 3,888,932
19	% change ((Line 17 - Line 18) / Line 18)	*13.0%*	*27.9%*	*77.5%*	*47.5%*	*-12.1%*	*-33.1%*	*16.0%*

[1] Adjustable Operating Revenues per Page 17 of Petitioner's Exhibit 11.

<u>Petitioner's Exhibit 15</u>

Exhibit 15

Schedule 1 Customer Cost Recovery
Schedule 2 Unit Rates
Schedule 3 Fire Protection Cost Recovery
Schedule 4 Phased Rate Plan and Projected Revenue
Schedule 5 Multi-Year Schedule of Rates and Charges
Schedule 6 Customer Impacts

Schedule 1 Customer Cost Recovery

Cost Components	Cost	Recovery %	Cost to be recovered by Customer Charge Recovered
Customer [1]	$ 578,460	100%	$ 578,460
			$ 578,460

Billing Periods: 12

Meter Size	Meter Count [2]	Total Annual Bills	Customer Charge [3]
5/8	10,136	121,632	
3/4	179	2,148	
1	252	3,024	
1.5	102	1,224	
2	193	2,316	
3	20	240	
4	17	204	
6	5	60	
8	3	36	
Total	10,907	130,884	$ 4.42

Revenue by Class

Meter Size	Residential	Customer Charge	Commercial	Customer Charge	Industrial	Customer Charge	Institutional	Customer Charge	Total Customer Charge
Meter Size	Total Annual Bills	Revenue	Total Annual Bills	Revenue	Total Annual Bills	Revenue	Total Annual Bills	Revenue	Revenue
5/8	110,484	$ 488,300	9,516	$ 42,057	192	$ 849	1,440	$ 6,364	537,570
3/4	984	$ 4,349	1,020	$ 4,508	24	$ 106	120	$ 530	9,493
1	396	$ 1,750	2,064	$ 9,122	156	$ 689	408	$ 1,803	13,365
1.5	36	$ 159	840	$ 3,712	36	$ 159	312	$ 1,379	5,410
2	12	$ 53	1,128	$ 4,985	144	$ 636	1,032	$ 4,561	10,236
3	0	$ -	96	$ 424	24	$ 106	120	$ 530	1,061
4	12	$ 53	96	$ 424	48	$ 212	48	$ 212	902
6	0	$ -	24	$ 106	24	$ 106	12	$ 53	265
8	24	$ 106	0	$ -	0	$ -	12	$ 53	159
Totals	111,948	$ 494,770	14,784	$ 65,340	648	$ 2,864	3,504	$ 15,486	$ 578,460

[1] Cost for customer function/component for Phase I shown in Schedule 8 of Exhibit 14.

[2] Based on test year billing data and assumes no growth consistent with Petitioner's Exhibits 10 and 11.

[3] Customer charge calculated by taking customer cost to be recovered divided by total number of annual bills

Schedule 2 Unit Rates

Line	Cost Recovery by Class	Residential	Commercial	Industrial	Institutional	Total
1	Net Cost to Serve (Schedule 9, Line 17)	$ 2,215,059	$ 737,421	$ 316,706	$ 618,735	$ 3,887,922
2	Fixed Cost Recovery (Schedule 1 of Exhibit 15)	$ (494,770)	$ (65,340)	$ (2,864)	$ (15,486)	$ (578,460)
3	Volumetric Recovery (Line 1 + Line 2)	$ 1,720,289	$ 672,081	$ 313,842	$ 603,249	$ 3,309,461
4	Billable Units (CCFs) [1]	526,197	223,760	101,009	195,736	1,046,701
5	Unit rate calculation per CCF	**$ 3.27**	**$ 3.00**	**$ 3.11**	**$ 3.08**	**$ 3.16**
	Revenue Generation					
6	Fixed Revenue (Line 2)	$ 494,770	$ 65,340	$ 2,864	$ 15,486	$ 578,460
7	Variable Revenue (Line 3)	$ 1,720,289	$ 672,081	$ 313,842	$ 603,249	$ 3,309,461

[1] Billable units based on Test Year Billed Consumption Data per Schedule 5 of Exhibit 14.

Schedule 3 Fire Protection Cost Recovery

Cost Components	Cost
Public Fire [1]	$ 489,905
Private Fire [2]	$ 131,927

Public Fire Protection

Billing Periods: 12

Meter Size	Meter Count [3]	Total Annual Bills	ERUs	Current Marion Scaling	Public Fire Cost [4]
5/8	10,099	121,188	10,099	1	$ 2.69
3/4	177	2,124	177	1	$ 2.69
1	242	2,904	619	3	$ 6.88
1.5	91	1,092	524	6	$ 15.48
2	175	2,100	1,790	10	$ 27.51
3	18	216	414	23	$ 61.91
4	16	192	655	41	$ 110.06
6	6	72	552	92	$ 247.63
8	2	24	327	164	$ 440.22
10			-	NA	$ -
12			-	NA	$ -
	10,826	129,912	15,157		
	81				

Private Fire Protection

	Number of Services	Equivalent Factor [5] *based on line Size*	Total Equivalents
No. Hydrants - Private	305	**111.311**	33,950
No. Sprinklers Heads Accounts	192	**111.311**	21,372
No. of Sprinkler Heads	168,795		

Billing Periods	1
Cost per Equivalent [6]	$2.38

Phase I Cost Calculation

Per Hydrant	$ 265.45
Per Sprinkler Head	$ 0.30

[1] Cost for public fire cost component of Phase I show in Schedule 9 of Exhibit 14

[2] Cost for private fire cost component of Phase I shown in Schedule 9 of Exhibit 14

[3] Based on test year billing data from Schedule 5 of Exhibit 14 and assumes no growth consistent with Petitioner's Exhibits 10 and 11, excludes irrigation and water 2 meters not charged public fire protection

[4] Public Fire Charge for 5/8" calculated based on public fire cost divided by ERU's on a monthly basis. Remaining meter size charges are based on 5/8" meter charge and current Marion Scaling Factors

[5] Flow capacity calculation shown in Schedule 7 of Exhibit 14

[6] Private Fire Cost divided by total equivalents for hydrants and sprinkler head accounts. For one billing period or on annually

[7] Calculation of equivalent factor for private hydrants and the cost per equivalent

[8] Product of the number of sprinkler head accounts divided by total equivalents and the total private fire cost divided by number of sprinkler heads

Schedule 4 Phased Rate Plan and Projected Revenue

Line		Units (CCF)	Phase I	Phase II	Phase III	Phase IV	Phase V
1	**Water Financial Plan** [1]		16.0%	10.5%	9.4%	8.6%	8.0%
			Phase I [2]	**Phase II** [2]	**Phase III** [2]	**Phase IV** [2]	**Phase V** [2]
	Meter Size						
2	5/8"		$4.42	$4.88	$5.34	$5.80	$6.27
3	3/4"		$4.42	$4.88	$5.34	$5.80	$6.27
4	1"		$4.42	$4.88	$5.34	$5.80	$6.27
5	1 1/2"		$4.42	$4.88	$5.34	$5.80	$6.27
6	2"		$4.42	$4.88	$5.34	$5.80	$6.27
7	3"		$4.42	$4.88	$5.34	$5.80	$6.27
8	4"		$4.42	$4.88	$5.34	$5.80	$6.27
9	6"		$4.42	$4.88	$5.34	$5.80	$6.27
10	8"		$4.42	$4.88	$5.34	$5.80	$6.27
11	Customer Charge Revenue - Residential		$494,770	$546,721	$598,113	$649,550	$701,514
12	Customer Charge Revenue - Commercial		$65,340	$72,201	$78,988	$85,780	$92,643
13	Base Charge Revenue - Industrial		$2,864	$3,165	$3,462	$3,760	$4,061
14	Base Charge Revenue - Institutional		$15,486	$17,112	$18,721	$20,331	$21,958
15	**Total Customer Charge Revenue**		**$578,460**	**$639,199**	**$699,283**	**$759,422**	**$820,175**
		Units (CCF)	**Phase I**	**Phase II**	**Phase III**	**Phase IV**	**Phase V**
	Usage Rate (per CCF)						
16	Tier 1 - 0 - 1.33	151,665	$3.96	$4.26	$4.43	$4.48	$4.48
17	Tier 2 - 1.34 - 6.67	318,686	$3.43	$3.76	$3.98	$4.28	$4.48
18	Tier 3 - 6.67 - 100	300,831	$2.81	$3.23	$3.72	$4.09	$4.48
19	Tier 4 - Over 100	275,520	$2.01	$2.49	$3.09	$3.71	$4.48
20	**Total Billable Units (CCF)**	**1,046,701**					
21	Revenue (Tiers)		$3,091,801	$3,500,210	$3,910,198	$4,295,677	$4,686,688
			Phase I	**Phase II**	**Phase III**	**Phase IV**	**Phase V**
	Public Fire Protection						
	Meter Size						
22	5/8"		$3.27	$3.39	$3.51	$3.61	$3.72
23	3/4"		$3.27	$3.39	$3.51	$3.61	$3.72
24	1"		$8.38	$8.67	$8.97	$9.24	$9.52
25	1 1/2"		$18.86	$19.52	$20.21	$20.81	$21.44
26	2"		$33.52	$34.70	$35.91	$36.99	$38.10
27	3"		$75.44	$78.08	$80.80	$83.23	$85.73
28	4"		$134.11	$138.81	$143.67	$147.98	$152.42
29	6"		$301.75	$312.31	$323.24	$332.94	$342.93
30	8"		$536.44	$555.22	$574.65	$591.89	$609.65
31	Public Fire Protection Revenue		$595,198	$616,720	$638,457	$656,960	$676,894

Schedule 4 Phased Rate Plan and Projected Revenue

		Phase I	Phase II	Phase III	Phase IV	Phase V
	Private Fire Protection					
32	Hydrant	$ 413.06	$ 413.06	$ 413.06	$ 413.06	$ 413.06
33	Sprinkler Head	$ 0.43	$ 0.43	$ 0.43	$ 0.43	$ 0.44
34	Private Fire Protection Revenue	$198,565	$198,565	$198,565	$198,565	$200,253

	Projected Revenues	**Current**	**Phase I**	**Phase II**	**Phase III**	**Phase IV**	**Phase V**
35	Residential Public Fire Protection	$354,031	$383,384	$397,420	$411,479	$423,233	$436,121
36	Base Residential	$1,960,077	$494,770	$546,721	$598,113	$649,550	$701,514
37	Volume Residential		$1,787,647	$1,967,566	$2,111,841	$2,248,848	$2,355,593
38	**Total Residential Revenue**	**$2,314,108**	**$2,665,801**	**$2,911,707**	**$3,121,433**	**$3,321,631**	**$3,493,228**
39	% Change		15.2%	9.2%	7.2%	6.4%	5.2%
40	Commercial Public Fire Protection	$122,402	$132,761	$137,467	$142,285	$146,498	$150,922
41	Base Commercial	$576,452	$65,340	$72,201	$78,988	$85,780	$92,643
42	Volume Commercial		$608,077	$701,824	$806,239	$900,127	$1,001,958
43	**Total Commercial Revenue**	**$698,854**	**$806,178**	**$911,492**	**$1,027,512**	**$1,132,406**	**$1,245,523**
44	% Change		15.4%	13.1%	12.7%	10.2%	10.0%
45	Industrial Public Fire Protection	$21,202	$23,009	$23,817	$24,649	$25,388	$26,151
46	Base Industrial	$178,409	$2,864	$3,165	$3,462	$3,760	$4,061
47	Volume Industrial		$219,579	$266,881	$324,565	$382,328	$452,499
48	**Total Industrial Revenue**	**$199,611**	**$245,452**	**$293,862**	**$352,676**	**$411,476**	**$482,710**
49	% Change		23.0%	19.7%	20.0%	16.7%	17.3%
50	Institutional Public Fire Protection	$68,700	$74,546	$77,169	$79,867	$82,257	$84,731
51	Base Institutional	$419,617	$15,486	$17,112	$18,721	$20,331	$21,958
52	Volume Institutional		$476,498	$563,939	$667,553	$764,373	$876,638
53	**Total Institutional Revenue**	**$488,317**	**$566,530**	**$658,220**	**$766,141**	**$866,961**	**$983,327**
54	% Change		16.0%	16.2%	16.4%	13.2%	13.4%
55	Private Fire Projection	$198,565	$198,565	$198,565	$198,565	$198,565	$200,253
56	**Total User Rate Revenue**	**$3,899,455**	**$4,482,526**	**$4,937,847**	**$5,466,326**	**$5,931,039**	**$6,405,041**
57	**Revenue Requirements**[1]	*$3,888,932*	*$4,509,754*	*$4,984,299*	*$5,452,793*	*$5,922,388*	*$6,394,828*
58	% Change		16.0%	10.5%	9.4%	8.6%	8.0%

[1] Sum of Deficit and Adjustable Operating Revenues on Page 17, Petitioner's Exhibit 11.
[2] Customer charge for each escalated with overall percentage increase required by phase per Petitioner's Exhibit 11.

Schedule 5 Multi-Year Schedule of Rates and Charges

Water Rates					**Phased Rates**		
		Current	**Phase I**	**Phase II**	**Phase III**	**Phase IV**	**Phase V**
Customer Class		**ALL**	**ALL**	**ALL**	**ALL**	**ALL**	**ALL**
Minimum Use		By Meter Size					
Meter Charges with	**Minimum Usage (CCF)**		**Meter Charges, No Minimum Usage Included**				
5/8"	3	$ 11.06	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
3/4"	5	$ 18.00	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
1"	10	$ 31.63	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
1 1/2"	19	$ 48.36	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
2"	37	$ 82.97	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
3"	81	$ 168.14	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
4"	200	$ 335.53	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
6"	328	$ 502.87	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
8"	457	$ 670.25	$ 4.42	$ 4.88	$ 5.34	$ 5.80	$ 6.27
Tier Charge Per CCF							
Tier 1 - 0 - 1.33		$ 3.96	$ 3.96	$ 4.26	$ 4.43	$ 4.48	$ 4.48
Tier 2 - 1.34 - 6.67		$ 3.43	$ 3.43	$ 3.76	$ 3.98	$ 4.28	$ 4.48
Tier 3 - 6.67 - 100		$ 1.95	$ 2.81	$ 3.23	$ 3.72	$ 4.09	$ 4.48
Tier 4 - Over 100		$ 1.30	$ 2.01	$ 2.49	$ 3.09	$ 3.71	$ 4.48
Public Fire Protection by Meter Size, Charged Monthly:			**Public Fire Protection by Meter Size, Charged Monthly:**				
5/8"		$ 3.02	$ 3.27	$ 3.39	$ 3.51	$ 3.61	$ 3.72
3/4"		$ 3.02	$ 3.27	$ 3.39	$ 3.51	$ 3.61	$ 3.72
1"		$ 7.72	$ 8.38	$ 8.67	$ 8.97	$ 9.24	$ 9.52
1 1/2"		$ 17.38	$ 18.86	$ 19.52	$ 20.21	$ 20.81	$ 21.44
2"		$ 30.89	$ 33.52	$ 34.70	$ 35.91	$ 36.99	$ 38.10
3"		$ 69.50	$ 75.44	$ 78.08	$ 80.80	$ 83.23	$ 85.73
4"		$ 123.56	$ 134.11	$ 138.81	$ 143.67	$ 147.98	$ 152.42
6"		$ 278.01	$ 301.75	$ 312.31	$ 323.24	$ 332.94	$ 342.93
8"		$ 494.23	$ 536.44	$ 555.22	$ 574.65	$ 591.89	$ 609.65
Private Fire Protection - Annual			**Private Fire Protection - Annual**				
Per Hydrant		$ 413.06	$ 413.06	$ 413.06	$ 413.06	$ 413.06	$ 413.06
Per Sprinkler Head		$ 0.43	$ 0.43	$ 0.43	$ 0.43	$ 0.43	$ 0.44

Schedule 6 Customer Impacts

5/8" Meter, 1 CCF

93% of ALL Customers have 5/8" Meter

99% of Residential, 64% of Commercial, 29% of Industrial, 40% of Institutional

20% of 5/8" Customers Bills on Annual Basis are 1 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ 11.06	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 3.02	$ 3.27	$ 3.72
Water Volume Charge	$ -	$ 3.96	$ 4.48
Total Water Bill	**$ 14.08**	**$ 11.65**	**$ 14.46**
Change in Bill ($)		**$ (2.43)**	**$ 0.38**
Change in Bill (%)		**-17%**	**3%**

5/8" Meter, 5 CCF

93% of ALL Customers have 5/8" Meter

99% of Residential, 64% of Commercial, 29% of Industrial, 40% of Institutional

75% of 5/8" Customers Bills on Annual Basis are 5 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ -	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 3.02	$ 3.27	$ 3.72
Water Volume Charge	$ 17.85	$ 17.85	$ 22.38
Total Water Bill	**$ 20.87**	**$ 25.54**	**$ 32.37**
Change in Bill ($)		**$ 4.67**	**$ 11.49**
Change in Bill (%)		**22%**	**55%**

Schedule 6 Customer Impacts

1" Meter, 8 CCF

2% of ALL Customers have 1" Meter
14% of Commercial, 23% of Industrial, 11% of Institutional
57% of 1" Customers Bills on Annual Basis are 8 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ 31.63	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 7.72	$ 8.38	$ 9.52
Water Volume Charge	$ -	$ 27.31	$ 35.81
Total Water Bill	**$ 39.35**	**$ 40.11**	**$ 51.60**
Change in Bill ($)		**$ 0.76**	**$ 12.25**
Change in Bill (%)		**2%**	**31%**

1" Meter, 17.5 CCF

2% of ALL Customers have 1" Meter
14% of Commercial, 23% of Industrial, 11% of Institutional
73% of 1" Customers Bills on Annual Basis are 17 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ -	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 7.72	$ 8.38	$ 9.52
Water Volume Charge	$ 44.69	$ 53.99	$ 78.34
Total Water Bill	**$ 52.41**	**$ 66.79**	**$ 94.13**
Change in Bill ($)		**$ 14.38**	**$ 41.72**
Change in Bill (%)		**27%**	**80%**

Schedule 6 Customer Impacts

2" Meter, 14 CCF

2% of ALL Customers have 2" Meter
7% of Commercial, 22% of Industrial, 28% of Institutional
30% of 2" Customers Bills on Annual Basis are 14 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ 82.97	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 30.89	$ 33.52	$ 38.10
Water Volume Charge	$ -	$ 44.16	$ 62.67
Total Water Bill	**$ 113.86**	**$ 82.10**	**$ 107.04**
Change in Bill ($)		**$ (31.76)**	**$ (6.82)**
Change in Bill (%)		**-28%**	**-6%**

2" Meter, 25 CCF

2% of ALL Customers have 2" Meter
7% of Commercial, 22% of Industrial, 28% of Institutional
41% of 2" Customers Bills on Annual Basis are 25 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ 82.97	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 30.89	$ 33.52	$ 38.10
Water Volume Charge	$ -	$ 75.05	$ 111.92
Total Water Bill	**$ 113.86**	**$ 112.99**	**$ 156.28**
Change in Bill ($)		**$ (0.87)**	**$ 42.42**
Change in Bill (%)		**-1%**	**37%**

Schedule 6 Customer Impacts

2" Meter, 50 CCF

2% of ALL Customers have 2" Meter
7% of Commercial, 22% of Industrial, 28% of Institutional
58% of 2" Customers Bills on Annual Basis are 50 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ -	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 30.89	$ 33.52	$ 38.10
Water Volume Charge	$ 108.06	$ 145.25	$ 223.83
Total Water Bill	**$ 138.95**	**$ 183.19**	**$ 268.20**
Change in Bill ($)		**$ 44.24**	**$ 129.25**
Change in Bill (%)		**32%**	**93%**

2" Meter, 155 CCF

2% of ALL Customers have 2" Meter
7% of Commercial, 22% of Industrial, 28% of Institutional
84% of 2" Customers Bills on Annual Basis are 155 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ -	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 30.89	$ 33.52	$ 38.10
Water Volume Charge	$ 277.06	$ 396.11	$ 694.10
Total Water Bill	**$ 307.95**	**$ 434.05**	**$ 738.46**
Change in Bill ($)		**$ 126.10**	**$ 430.51**
Change in Bill (%)		**41%**	**140%**

Schedule 6 Customer Impacts

4" Meter, 118 CCF

22 Customers have 4" Meter

1 Residential, 10 Commercial, 4 Industrial, 7 Institutional

53% of 4" Customers Bills on Annual Basis are 118 CCF or less

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ 335.53	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 123.56	$ 134.11	$ 152.42
Water Volume Charge	$ -	$ 321.80	$ 528.32
Total Water Bill	**$ 459.09**	**$ 460.33**	**$ 687.00**
Change in Bill ($)		**$ 1.24**	**$ 227.91**
Change in Bill (%)		**0.3%**	**50%**

4" Meter, 1,500 CCF

22 Customers have 4" Meter

1 Residential, 10 Commercial, 4 Industrial, 7 Institutional

Only a few bills on an annual basis are higher than 1,500 CCF

	Current (FY 2022) [1]	Unit Rate Alternative (Phase I)	Unit Rate Alternative (Phase V)
Water Customer Charge	$ -	$ 4.42	$ 6.27
Public Fire Protection Charge	$ 123.56	$ 134.11	$ 152.42
Water Volume Charge	$ 2,025.56	$ 3,097.55	$ 6,720.35
Total Water Bill	**$ 2,149.12**	**$ 3,236.08**	**$ 6,879.04**
Change in Bill ($)		**$ 1,086.96**	**$ 4,729.91**
Change in Bill (%)		**51%**	**220%**

[1] Follows City of Marion current structure with minimum use associated with the customer charge for each meter size.