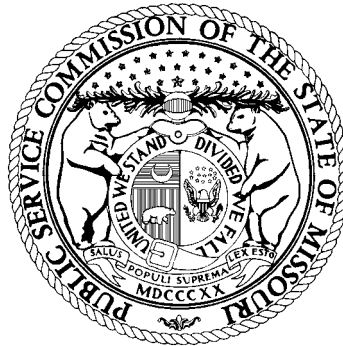


# **MISSOURI PUBLIC SERVICE COMMISSION**

## **STAFF REPORT**

### **CLASS COST-OF-SERVICE & RATE DESIGN**



**MISSOURI-AMERICAN WATER COMPANY**

**CASE NOS. WR-2008-0311 AND SR-2008-0312**

*Jefferson City, Missouri  
September 3, 2008*

# CLASS COST-OF-SERVICE & RATE DESIGN REPORT

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# **STAFF CLASS COST-OF-SERVICE & RATE DESIGN REPORT**

## **I. Executive Summary**

### **A. Staff Class Cost-of-Service and Rate Design Objectives**

The Staff's class cost-of-service and rate design objectives are:

1. To develop rates reflecting the class cost-of-service (CCOS) in all districts except the Brunswick and Warren County districts. Customers pay their actual cost of receiving service and the Company has an opportunity to recover their actual cost of providing service (including an opportunity to receive a return on their investment) by assigning the results of the CCOS to each customer classification;
2. To move the rates closer to the CCOS in the Brunswick and Warren County districts. Staff believes each customer in each district should pay their true cost of service; however, Staff also recognizes that this would place a burden of extremely high rates for the customers of the Brunswick and Warren County districts;
3. To eliminate the declining block rates by developing single block rates in each customer classification for each district. Single block rates are easy for the customer to understand and will eliminate the increased burden placed on the small volume user in the first block of a declining block rate structure;
4. To collect the Commission-ordered overall increase or decrease in revenues.

### **B. Staff's Plan to Accomplish These Objectives**

To accomplish these objectives, Staff recommends the following actions:

1. Adoption of Staff's proposed rates, which reflect the results of Staff's CCOS Study that allocates costs to each customer classification in each district.
2. Reduce the amount of the subsidy to the Brunswick and Warren County districts from the Saint Louis district;
3. The Commission adopts the single block rates within each customer classification for each district recommended by Staff.
4. Any Commission ordered overall revenue increase/decrease be implemented according to each rate component of each rate schedule recommended by Staff.

## **II. Class-Cost-of-Service Water Operations**

### **A. Overview**

The purpose of Staff's CCOS study is to determine and provide the Commission with a measure of relative class cost responsibility for Missouri-American Water Company's (Company or MAWC) overall revenue requirement on a district specific basis. For individual costs, class cost responsibility can be either assigned or allocated to customer classes using reasonable methods for determining the class responsibility for that cost. The results are then summarized so that they can be compared to revenues being collected based on current rates.

The CCOS does not include any allowance for a true-up estimate as provided in the Staff's Accounting work papers. The primary reason is because it is not possible to accurately spread this estimate among the various cost allocation factors without knowing which specific accounts are affected by the true-up.

### **B. Base-extra Capacity Method**

Staff allocated each district's total cost using the "base-extra capacity" method, which is an industry-wide accepted method. This method involves allocating the various cost components based on data pertaining to operating costs, operating revenues, system capacity, customer usage and customer numbers. The results of these allocations show the relative cost-of-service for each customer class and the appropriate revenue levels that should be recovered from each customer class. Rates are then designed to recover the costs that are allocated to each class.

In the base-extra capacity method, costs are generally separated into four primary cost components: base costs, extra capacity costs, customer costs and direct fire protection costs.

Base costs vary with water consumption and are allocated to customer classifications according to the amount of water consumed.

Extra capacity costs are the costs associated with meeting the requirements that are in excess of the average load conditions. The extra capacity costs include operation and maintenance expenses and capital costs for system capacity above what is required for average rate of use.

Customer costs are those costs associated with the number of customers, regardless of consumption. These costs include customer accounting and collection expenses, meter-reading expenses, billing expenses and return on and of plant related to meters and services.

Fire protection costs are those costs directly assigned to fire protection functions.

Allocation of each of these costs is accomplished by applying class allocation factors. These class allocation factors are applied to the annualized and normalized expenses, plant, rate base and return on investment to determine the total costs to be recovered in each district.

The customer class allocation factors developed are based on the Staff's district specific cost-of-service allocations as of the Staff's direct filing and, as noted above, do not include the recovery of any true-up allowance.

### **C. Schedules included in the CCOS Study**

Schedule 1 includes the CCOS study for each district, which summarizes the current cost of service, revenues at present rates, revenues at proposed rates and the amount of increase/decrease for each customer class within each operating district.

Schedule 2 shows the allocation of the Auditing Department's cost-of-service by customer class and then to the functions of base use, maximum day use, maximum hour use,

meter cost and service cost, billing and collection cost and fire service cost for each operating district.

Schedule 3 shows the development of the allocation factors used in the allocation between customer classifications shown in Schedule 2.

Schedule 4 includes the number of meter and services for each operating district with an appropriate weighting factor for each customer class.

Schedule 5 shows the allocation to public and private fire service costs in proportion to the relative potential demands placed on each system by public fire hydrants and private fire services.

#### **D. Allocation Factors**

Factor 1 is the allocation of costs that vary with the amount of water consumed. This factor is used in the allocation of such costs as purchased water, purchased power, and chemicals. These types of costs vary with the amount of water consumed and are considered base costs.

Factors 2 and 3 are the allocation of costs associated with facilities serving base and maximum day extra capacity functions, and the allocation of costs associated with facilities serving base, maximum day extra capacity and fire protection functions. These factors are calculated by the allocation of such costs as source of supply expenses (excluding purchased water) and water treatment expenses (excluding chemicals). These types of costs are costs associated with meeting usage requirements in excess of the average, the costs associated with meeting maximum day requirements.

Factors 4 and 5 are the allocation of costs associated with facilities serving base and maximum hour extra capacity functions, and the allocation of costs associated with storage

facilities. These factors are calculated by the allocation of costs related to mains 8" and less and storage facilities such as tanks and standpipes. These costs are allocated partly on average consumption and maximum hour extra demand. These types of costs are related to facilities that are designed to meet maximum hour and fire protection requirements.

Factor 6 is the allocation of costs associated with power and pumping facilities. This factor is calculated by the weighting of factors 2, 3 and 4 for each customer classification.

Factor 7 is the allocation of costs associated with transmission and distribution mains. This factor is calculated from the weighting of factors 3 and 4.

Factor 8 is the allocation of costs associated with fire hydrants. This factor is calculated by the allocation of costs directly associated with the maintenance of fire hydrants and the fire hydrants

Factor 9 is the allocation of costs associated with meters. This factor is calculated by the allocation of costs associated with the maintenance of meters and the meters. These costs are allocated to the customer classifications based on the size and quantities of meters serving each customer classification.

Factor 10 is the allocation of costs associated with services. This factor is calculated by the allocation of costs associated with the cost of service by customer classification.

Factor 11 is the allocation of transmission and distribution operation supervision and engineering and miscellaneous expenses. This factor is calculated by the allocation of operation costs.

Factor 12 is the allocation of transmission distribution maintenance supervision and engineering, structures and improvements and other expenses. This factor is calculated by the allocation of maintenance costs.

Factor 13 is the allocation of billing and collection costs. This factor is calculated by the total number of customers for each customer classification.

Factor 14 is the allocation of meter reading costs. This factor is calculated by the number of metered customers for each customer classification.

Factor 15 is the allocation of administrative and general expenses and cash working capital. This allocation includes all other operation and maintenance expenses except purchased water, power, chemicals and waste disposal.

Factor 16 is the allocation of labor related taxes and benefits. All direct labor expenses are included in this factor.

Factor 17 is the allocation of organization, franchises and consents, miscellaneous intangible plant and other rate base elements. This factor is based on original cost less depreciation for each customer classification.

Factor 18 is the allocation of income taxes and income available for return.

Factor 19 is the allocation of regulatory commission expenses, assessments and other water revenues.

#### **E. Transmission Mains and Distribution Mains**

One of the major differences in the various CCOS studies is the allocation of transmission and distribution mains. Staff believes that the main distinction between transmission mains and distribution mains is based on function and is not based on size. All transmission and distribution mains used to provide water to a certificated service territory are used to transmit and distribute water to customers. When larger mains are used to directly serve customers, the main also has a distribution function. Thus, the distinction between major transmission facilities and local distribution lines is blurred. In small utilities or small



districts, an 8” main may be considered a part of the transmission system. In a large utility or large district, a 12” main may be considered a local distribution line.

The Company does not classify its mains by function in most of its districts. Rather, the Company makes the assumption that mains that are larger than 10” are transmission mains and mains that are 10” or smaller are distribution mains. Staff assigned the total footage of mains to the maximum hour consumption in factor 7.

#### **F. Results of Class Cost-of-Service Study**

Staff believes the CCOS correctly allocates the cost of providing service to each customer classification in each district. Since the CCOS in the Brunswick and Warren County Districts continues to be extremely high, and would cause an undue burden to those ratepayers, Staff is proposing that the rates for these districts continue to be subsidized, albeit at a lesser level than the previous rate case. The subsidization of rates avoids this undue burden and allows more “reasonable” rates to the customers in the Brunswick and Warren County Districts.

### **III. Rate Design Water Operations**

#### **A. Overview**

Staff’s rate design for the Company’s water operations is based on the actual revenue requirement for each district and that district’s CCOS to determine each customer class’ cost-of-service. The rates generally consist of a fixed monthly customer charge and a usage (commodity) charge, which are generally based upon the number of customers in the class and the usage characteristics of those customers.

## **B. Design of Block Rates**

Staff is proposing the elimination of the declining block structure in the Brunswick, Joplin, Jefferson City, Mexico, Parkville, St. Charles, St. Joseph and Warrensburg districts. The existing declining block rates result in the small users in a customer class paying much more of the costs to provide their water than large customers pay.

## **C. Results of Rate Design**

The results of the rate design for all the Company's districts (except the Brunswick and Warren County districts) are fairly consistent among the districts. The proposed first block tends to be slightly lower or slightly higher than the current first block and the subsequent proposed blocks have a greater percentage increase. The proposed changes in the commodity rates are consistent with Staff's expectations in changing from a declining block rate design to single block rate design.

Staff's proposed rates continue to be significantly higher in the Brunswick and Warren County Districts when compared to the Company's other districts. The proposed commodity charge for the Brunswick District is almost three times the Warren County proposed commodity charge. The proposed customer charge and proposed commodity charge for the Warren County District are approximately twice as high as the average of the other operating districts of the Company. Staff recommends ratepayers in the Saint Louis district continue to assist with these two districts' high cost-of-service.

# **IV. Class-Cost-of Service Sewer Operations**

## **A. Overview**

Staff did not perform a CCOS Study for the Company's sewer operations. Staff's audit and development of cost-of-service (COS) for MAWC's sewer operations is based on the Water & Sewer Departments small company rate design methodology. The Company's sewer operations are relatively small and generally consist of residential customers.

Warren County (Incline Village) has two commercial customers consisting of the Homeowner's clubhouse. The usage characteristics for these two sewer customers mirror the usage of a residential customer. The Cedar Hill District has commercial customers; however, none of these systems have the complexities of allocating costs between varied customer classes.

## **B. Results**

The COS indicates that the customer base for the Warren County district is insufficient to distribute the high cost of providing service and plant investment at a reasonable level among the existing customers.

The COS for the sewer districts do not include any allowance for a true-up allowance for the same reasons stated earlier in the overview of the CCOS for the water operations.

# **V. Rate Design Sewer Operations**

## **A. Overview**

Staff's rate design for the Company's sewer operations is based on the Water & Sewer Departments small company rate design methodology. The customers of the Parkville and Warren County sewer districts are based on a flat rate while the customers of the Cedar Hill District have a customer charge and a commodity charge for any usage above 6,000 gallons.

## **B. Design of Rates**

Schedule 6, 7, and 8 are the rate design worksheets for the Company's sewer operations and contain the following pages: Rate-Making Income Statement, Revenues-Current Rates, Rate Design, Revenues-Proposed Rates and Residential Customer Billing Comparison.

The Rate-Making Income Statement worksheet is a summary of the Company's operating revenues at current rates and the Company's cost-of-service determined by the Staff's auditing department. The last line on the worksheet is the overall revenue increase that Staff is recommending for each sewer district.

The Revenues-Current Rates worksheet summarizes Staff's annualized number of the Company's customers for each sewer district. The Cedar Hill sewer district is further summarized by customer type and whether the customers are metered or non-metered. In addition, the center of the worksheet summarizes Staff's annualized commodity volumes over 6,000 gallons for the customers of the Cedar Hill District. The Company's other revenues are summarized for each district and the bottom of the page summarizes the total operating revenues for each district.

The Rate Design worksheet computes the amount of the increase from the Company's current approved rates to Staff's proposed rates. Staff is proposing an equal percentage increase for the customer and commodity charge in the Cedar Hill sewer district.

The Revenues-Proposed Rates worksheet is similar in layout to the Revenues-Current Rates worksheet. The primary differences between the two sheets are this sheet computes Staff's proposed rates based on the proposed rates listed on the preceding Rate Design

worksheet and the last two lines of the worksheet compares Staff's increase in revenues at proposed rates verse Staff's recommended increase in operating revenues.

The Residential Customer Billing Comparison worksheet compares the current residential customer rates to Staff's proposed residential customer rates. The worksheet also summarizes the proposed increase by dollar and percentage amounts.

### **C. Results of Rate Design**

Since the COS in the Warren County District continues to be extremely high, and would cause rate shock to the ratepayers, Staff is proposing that the rates be subsidized. Staff recommends ratepayers in the Saint Louis district continue to assist with this districts high cost-of-service.

## **VI. Miscellaneous Tariff Changes**

The Staff is recommending that the Company standardize the way it computes the amount of interest to be paid on customer deposits.

Presently, Rule 23.0 of the St. Louis County water tariff states:

“...On all deposits for residential customers, interest at the rate of one percent above the prime lending rate as published in the Wall Street Journal for the last business day of July preceding the receipt of the deposit, and shall be adjusted annually on August 1 each year to prospectively reflect such published rate....On all deposits for non-residential customers, interest shall be credited at the rate of one percent above the prime lending rate as published in the Wall Street Journal for the last business day of July preceding the receipt of the deposit, and shall be adjusted annually on August 1 each year to prospectively reflect such published rate.”

The remainder of the Company's water and sewer district tariffs has language similar to the following sentence: "Interest at the rate of six percent per annum compounded annually shall be payable on all deposits."

The Staff recommends that the Company change the language in all of their tariffs to the language in the St. Louis County water tariff. In addition, the Staff recommends that the wording the last business day of July be changed to the last business day of December, and, the wording shall be adjusted annually on August 1 be changed to shall be adjusted annually on the first business day in January.

Staff Expert: James M. Russo

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

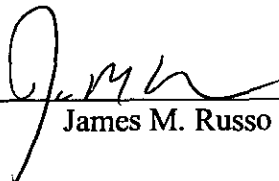
In the Matter of Missouri-American Water )  
Company's request for authority to )  
implement a general rate increase for )  
water and sewer service provided in )  
Missouri Service Areas )

Case No. WR-2008-0311

**AFFIDAVIT OF JAMES M. RUSSO**

**STATE OF MISSOURI**     )  
                                      ) ss  
**COUNTY OF COLE**     )

James M. Russo, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Staff Report in its entirety; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

  
\_\_\_\_\_  
James M. Russo

Subscribed and sworn to before me this 29<sup>th</sup> day of August, 2008.



SUSAN L. SUNDERMEYER  
My Commission Expires  
September 21, 2010  
Callaway County  
Commission #06942086

  
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Notary Public