

STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

AQUARION WATER COMPANY OF NEW HAMPSHIRE, INC.

DOCKET NO. DW 20-184

DIRECT TESTIMONY OF

**JOHN F. GUASTELLA
GUASTELLA ASSOCIATES, LLC.**

ON BEHALF OF

AQUARION WATER COMPANY OF NEW HAMPSHIRE

December 18, 2020

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

2 A. John F. Guastella, Guastella Associates, LLC, 775 N. Highway A1A, Suite B103, Jupiter,
3 Florida 33477.

4 **Q. Please describe Guastella Associates, LLC.**

5 A. Guastella Associates provides utility management, valuation and rate consulting services
6 on behalf of both regulated and unregulated utilities.

7 **Q. What has been your experience in utility regulation and rate setting?**

8 A. My entire professional career has been in the field of utility regulation and rate setting;
9 first as a regulator and then as a consultant.

10 **Q. Is Appendix A attached to this testimony a summary statement of your
11 qualifications and experience?**

12 A. Yes.

13 **Q. What is the nature of your involvement in this proceeding?**

14 A. Guastella Associates, Inc. has been retained by the Aquarion Water Company of New
15 Hampshire (“Aquarion” or “Company”) to conduct a cost of service and rate design
16 study, to be used in conjunction with its application to the New Hampshire Public
17 Utilities Commission for a rate increase.

18 **Q. What is the cost basis for your study?**

19 A. My study is based on the pro forma revenue requirement that the Company has used to
20 support its rate increase.

1 **Q. Would you briefly describe your scope of work?**

2 A. Yes. All source data was obtained from the Company. We examined financial and
3 operating data, including detailed asset, revenue and expense schedules as well as
4 production data. We examined billing data in order to develop a billing analysis. We had
5 numerous telephone discussions with Company representatives in order to compile data
6 and confirm that no significant changes in the operation of the utility have occurred that
7 would significantly impact the study.

8 **Q. Have you prepared an exhibit containing the results of your cost of service study?**

9 A. Yes. The cost of service study is set forth in Exhibit JFG-1.

10 **Q. What method did you use to perform the cost allocation study?**

11 A. The cost allocation study is based on the Base-Extra Capacity method. This method,
12 which is described and illustrated in the American Water Works Association (“AWWA”)
13 Water Rates Manual (M-1), identifies and classifies the various cost components which
14 comprise the revenue requirement, functionalizes those cost components according to the
15 general design criteria and operation of a water utility, and allocates the functionalized
16 costs to the customer classes. It also incorporates a fire service allocation within the
17 format of the study.

18 **Q. How did you classify and functionalize costs?**

19 A. Aquarion’s investment in utility plant in service was analyzed according to the primary
20 plant accounts of the prescribed Uniform System of Accounts, which classify different
21 components of the utility system. Those components are then functionalized according to
22 the design and use of the system in meeting the demands of the customers. The functions
23 used in the base-extra-capacity method are: Base, Extra Capacity Maximum Day, Extra

1 Capacity Peak Hour and Customer (Meters/Services and Billing and Accounting) costs.
2 Base costs are those that tend to vary according to average use.
3 Extra Capacity costs, Maximum Day and Peak Hour, are costs that tend to vary according
4 to the maximum day or peak hour demands on the system.
5 Customer costs for such items as billing, accounting and collecting (also referred
6 to as commercial costs) do not vary with either average or maximum demands but instead
7 according to the number of bills. Similarly, customer costs for meters and services tend
8 to vary according to the equivalent number of such units. After costs have been classified
9 and functionalized, they are allocated to the various customer classes according to the
10 relative average, maximum day and peak hour demands of each class, and the relative
11 bills and equivalent meters of each class.

12 **Q. Is the base-extra capacity cost allocation method you described set forth in**
13 **Exhibit JFG-1?**

14 A. Yes.

15 **Q. Would you please describe Schedule 1?**

16 A. Schedule 1 summarizes the allocation of the revenue requirement by functional
17 classification to the customer classes. In other words, it quantifies the portion of the
18 revenue requirement that should be recovered through rates for service from each class of
19 customer. As shown, the customer classes include Residential, Commercial, Industrial,
20 Public Authority, Seasonal and Fire Service.

21 **Q. Is Schedule 1 used as the cost basis to develop the rate design?**

22 A. Yes. Schedule 1 shows the revenues to be generated by each class of customer through
23 rates. Subsequent schedules show the specific calculation of rates.

1 **Q. Would you please explain how you “functionalized” the costs that are**
2 **reflected in Schedule 1?**

3 A. Yes. The allocation of cost components to the functions of Base, Extra Capacity
4 Maximum Day, Extra Capacity Peak Hour, Customer and Hydrants, is accomplished as
5 shown on Schedules 2 through 9.

6 **Q. Before proceeding with an explanation of your schedules in numerical order, how**
7 **did you establish the total system demands used for the cost allocation?**

8 A. As a first step, analyses were made of the total system water demands. Based on these
9 analyses, system demand ratios of 1.70 and 2.70 were established from maximum day
10 and peak hour demands in relation to the average day demand, respectively. Schedule 9
11 sets forth the average day, maximum day and peak hour system demands in million
12 gallons per day and the ratio of each to the average day. Also shown on Schedule 9 is the
13 fire demand, which has been established at 4,500 gallons per minute (gpm). The 4,500
14 gpm fire demand equates to a rate of flow of 6.48 million gallons per day (mgd). The fire
15 demand is based on a review of guidelines established by the Insurance Service
16 Organization (and its predecessor, the National Board of Fire Underwriters), and
17 judgment as to the size and characteristics of the service area. It is noted that while a fire
18 demand that is even higher appears warranted, we believe it is appropriate to use 4,500
19 gpm in order to mitigate the impact of fire demands for a relatively small water system.

20 **Q. Would you please explain Schedule 2?**

21 A. Schedule 2 summarizes the allocation of the various revenue requirement components to
22 functional classifications and is supported by Schedules 3 through 8. The numerical
23 “Code” next to each revenue requirement component references explanations of the
24 allocations, which are found on Schedule 8, pages 1 through 4. Schedule 8, page 1,
25 provides a summary listing of each allocation code and percentage. Pages 2 through 4 of
26 this schedule provide explanations and, where warranted, calculations of the code.

1 Schedule 3 sets forth the allocation of the pro forma rate base, by component. The
2 results were used to allocate utility operating income and income taxes on Schedule 2.
3 Schedule 4 sets forth the allocation of utility plant, the results of which were carried
4 forward on Schedule 3. The utility plant allocation was also used to allocate property
5 taxes on Schedule 2. The accumulated depreciation allocation is shown on Schedule 5,
6 and the results carried forward on Schedule 3, and were also used to allocate deferred
7 taxes on that schedule. Schedule 6 sets forth the allocation of pro forma operation and
8 maintenance expenses, the results of which were carried forward to Schedule 2 and
9 were also used to allocate cash working capital on Schedule 3. Pro forma annual
10 depreciation expense is allocated on Schedule 7, and the results carried forward to
11 Schedule 2.

12 **Q. Would you please describe Schedule 10, which summarizes the customer class**
13 **allocation factors?**

14 A. Yes. Schedule 10 sets forth estimated non-coincidental water demands by customer
15 classes. Customer demands were determined by using typical customer demand ratios
16 and by taking into consideration the volume of water use by each customer class, the
17 overall system demands, other consumption and demand data and the results of other
18 studies, and judgment. Also included on Schedule 10, are the average day, maximum day
19 demands and the demand for fire service which total annual use is estimated 1% of total
20 system average day. The maximum day fire demand is based on a coincidental fire
21 demand of 4,500 gpm for 4 hours duration, which equals 1.08 mg. The peak hour fire
22 demand is the 4,500 gpm or a rate of 3.24 mgd on the basis of a 12-hour day in order to
23 recognize that for smaller systems the fire demands are disproportionately higher than the
24 general service demands. Accordingly, without such an adjustment, the fire service rates
25 would be higher than that of a “typical” water rate structure. This adjustment is made in
26 order to temper the impact on the fire service rates. The demands shown on of Schedule
27 10 are non-coincidental, indicative of the maximum day and peak hour demands that
28 could be anticipated without diversity of demand among customer classes. The billing
29 information by customer group shown on Schedule 10 is detailed on Schedule 11. The

1 allocation percentages for each customer class shown on Schedule 10 are used to allocate
2 the dollar amount of functionalized costs from Schedule 2 (Base, Maximum Day, Peak
3 Hour, Customer-Meter/Service and Customer-Commercial) to the customer classes, as
4 reflected on Schedule 1.

5 **Q. Having allocated the revenue requirements to customer classes, how did you**
6 **then calculate the proposed rates needed to yield the allocated costs?**

7 A. With respect to general metered rates, the first step was to establish the “Customer”
8 charges, by size meter, as shown at the top half of Schedule 12. The customer charges
9 are designed to recover the costs allocated to the “Customer” function. The charge
10 for a 5/8-inch meter is calculated by dividing the number of equivalent 5/8-inch meters
11 served into the total cost allocation to the “Meters and Services and Billing and
12 Accounting” function. The customer charges for other meter sizes are based on the meter
13 capacity relationships to the charge for a 5/8-inch meter, similar to the existing
14 relationships among the various size meters in order to maintain the customer charge
15 structure. For designing the Customer Charge Rates, the ERC’s are based on capacity
16 ratios.

17 **Q. How did you calculate the proposed metered rates for each customer class?**

18 A. First, the calculated customer charge revenues to be generated from each customer class
19 were subtracted from the total costs allocated to each customer class in order to establish
20 the required usage revenues. We then established conservation rates using two tier
21 blocks for both the year-round and seasonal single-family residential customers. With
22 respect to the multi-family customers that are year-round and seasonal, it was judged that
23 the diversity and nature of their demands reflect load or demand factors that are better
24 than the single-family customers. Therefore, the conservation, two tier rates were only
25 applicable to single-family residential customers. The consumption applicable to the
26 first block rate is estimated on the basis of non-weather sensitive water use, primarily
27 indoor use during winter months, or the first six (6) hundred cubic feet (ccf) of monthly

1 water use. The second block rate is applicable to all water consumption in excess of 6
2 ccf, with a rate that is 25% higher than the first block rate in order to send a price signal
3 that encourages conservation. In anticipation that this conservation effort will actually
4 result in some reduction in water use, the consumption levels in the second blocks were
5 adjusted downward by a modest one percentage point for each ten percentage point
6 increase in the first block rate. Specifically, the consumption was reduced by 2.5% (25%
7 divided by 10). This is a modest adjustment for price elasticity in terms of magnitude, as
8 well as there is no downward adjustment for price elasticity related to the overall
9 percentage increase in revenue requirement.

10 The multi-family single-block usage rates were established at a level that is 10% greater
11 than the single-family first block rate, also to reflect a price signal, but without a
12 reduction in consumption.

13 All non-residential rates were established by dividing the revenue requirement allocated
14 to usage by the total usage of each class.

15 **Q. How did you calculate fire service rates?**

16 A. The cost allocation to public fire service includes the cost of public fire hydrants
17 plus the capacity cost for the potential fire flow demands throughout the water system.
18 Similarly, the cost allocation to private fire service includes the cost of service
19 connections maintained by the Company plus the capacity costs to meet the potential fire
20 flow demands of the private fire service connections. The capacity costs allocated to fire
21 service include a portion of the capital costs related to the water system facilities that
22 meet the various water demands of all customers, as well as a portion of operating
23 expenses. The allocation of capacity costs is based on the potential water demands of
24 both public and private fire flow requirements in relation to the total demands on the
25 water system. Schedule 13 shows the allocation of capacity costs between private and
26 public fire service. This schedule also summarizes the public fire service costs
27 (capacity, hydrants and billing) and the private fire service costs (capacity, services and
28 billing). The public hydrant charge is calculated by dividing the total costs allocated to
29 public fire service by the number of public hydrants. The costs assigned to fire service

1 are taken from Schedule 1. The capacity costs allocated to total fire service were
2 assigned to public and private fire service on the basis of the relative fire flow capacities
3 of the various sizes of private fire service connections and public hydrants. The billing
4 costs are allocated to each size connection according to the number of bills. The sum of
5 all three cost components is the basis for determining the rates for public and private fire
6 service.
7 Schedule 14, sets forth the rates for public hydrants and private fire service connections.

8 **Q. Have you prepared schedules showing a comparison of present and proposed rates**
9 **and revenues?**

10 A. Yes. Schedules 15 and 16 contain billing analyses under the proposed and private rates
11 and revenues for general metered customers, respectively. Schedule 17 shows a
12 comparison of present and proposed revenues for all customer classes, along with the
13 percentage increases. Schedule 18 contains a range of typical bill comparisons under
14 present and proposed rates, by customer class.

15 **Q. Are the variations in the percentage increases for the various customer classes**
16 **reasonable, in your opinion?**

17 A. Yes. The proposed rates reflect the cost of service results, which is generally considered
18 the starting point of rate design, and also Company policy with respect to conservation.

19 **Q. Does that conclude your testimony at this time?**

20 A. Yes.