

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of)	
Aqua Ohio, Inc. to Increase Its Rates and)	Case No. 22-1094-WW-AIR
Charges for Its Waterworks Service.)	

**DIRECT TESTIMONY
OF
NICHOLAS A. SANFORD
ON BEHALF OF
AQUA OHIO, INC.**

- ☐ Management policies, practice and organization
- ☐ Operating income
- ☒ Rate base
- ☐ Allocations
- ☐ Rate of return
- ☐ Rates and tariffs
- ☒ Other

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Direct Testimony of Nicholas A. Sanford

I. BACKGROUND, EXPERIENCE AND PURPOSE

Q1. Please introduce yourself.

A. My name is Nicholas Sanford. I am the Engineering Manager for Aqua Ohio, Inc. (Aqua or the Company). My business address is 6550 South Ave., Boardman, Ohio 44512.

Q2. What are your job responsibilities as Engineering Manager for Aqua Ohio?

A. As Engineering Manager, I am responsible for the development and implementation of the infrastructure improvement program for the Company's water and wastewater operations. In this capacity, I provide oversight of long-range planning efforts for each operating division, and detailed review, approval and coordination of individual capital projects. Emphasis is placed on alternatives, costs for possible alternatives and the impact on service and reliability, compliance, and operations and maintenance. My co-workers and I maintain contact with the government agencies (primarily the Ohio Environmental Protection Agency (OEPA), the Ohio Department of Natural Resources (ODNR) and the Ohio Department of Transportation (ODOT)) and business representatives with respect to projects that may result from or are requested by these outside entities.

Q3. Please summarize your education and work experience.

A. I am a 2008 graduate of Youngstown State University where I earned my Bachelor of Engineering Degree in Civil Engineering from the Rayen College of Engineering. From 2007 until 2015, I was employed by the Mentor, Ohio-based consulting firm of CT Consultants, Inc. as a municipal engineering consultant for communities across eastern Ohio; and from 2015 until 2020 I was the Director of the Ashtabula County (Ohio) Department of Environmental Services, an appointed directorate by the Board of County Commissioners of Ashtabula County, Ohio responsible for the budgetary and executive

1 administration of its water distribution and wastewater collection and treatment
2 infrastructure within the unincorporated political subdivisions of the County as provided
3 by R.C. §6103 and §6117, respectively. I joined the Engineering staff of Aqua Ohio, Inc.
4 in March 2020 as a Project Engineer and was promoted to Engineering Manager in May
5 2022, the position I currently hold.

6 **Q4. Have you previously testified before any regulatory agency?**

7 A. No.

8 **Q5. What is the purpose of your testimony in this proceeding?**

9 A. I will testify about the infrastructure improvements that Aqua Ohio has implemented since
10 the last rate case, as well as the factors contributing to the need for these investments.

11 **II. OVERVIEW OF CAPITAL INFRASTRUCTURE IMPROVEMENTS**

12 **Q6. Please describe improvements made on the Company's system since the last rate case.**

13 A. Since the last rate case, the Company will have invested over \$68 million in capital
14 infrastructure improvements among the water systems, inclusive of replacing and installing
15 transmission and distribution mains, valves, service lines, meters and fire hydrants.
16 Improvements have also been implemented at booster stations, tanks, wells, well stations,
17 water treatment plants (WTPs), residuals processing equipment and ancillary equipment
18 and structures. These improvements were necessary to replace aging infrastructure and
19 respond to multiple new rules and regulations promulgated by the Ohio EPA and the
20 USEPA; thereby maintaining service and reliability, obtaining or maintaining regulatory
21 compliance, improving customer service and improving safety and security.

1 **Q7. Will all of the facilities that are included in the utility plant accounts be used and**
2 **useful and necessary for the convenience of the public as of the date certain?**

3 A. Yes. To the best of my knowledge, all the property in this case will be used and useful and
4 necessary for providing safe, adequate and reliable water service as of the date certain.

5 **Q8. What is the Company's program or process for making decisions with respect to**
6 **capital replacement or improvements?**

7 A. As noted in Company Witness Davis' testimony, the Company utilizes information from
8 four main sources in planning capital infrastructure improvements: (1) annual review and
9 modification of the current five-year capital plan (long-range plan); (2) regulatory
10 compliance (including OEPA, ODNR, OPUCO, and OSHA regulations); (3) ongoing
11 monitoring and inspection of the existing facilities; and (4) available funding. Engineering
12 plays a lead role in the annual review and development of the five-year capital plan, and
13 works with operations and compliance personnel to identify and prioritize capital needs
14 resulting from changes related to regulatory updates and ongoing performance of the
15 existing infrastructure.

16 The Company continues to thoroughly evaluate and prioritize infrastructure needs.
17 In particular, the Company has continued utilizing electronic record keeping for
18 distribution plant, *i.e.*, GIS mapping. Ongoing efforts by the Company include
19 standardization of service line cards for compliance with impending changes to the Federal
20 Lead and Copper Rule in 2024 as continuing guidance is published by USEPA.
21 Enhancements have also been made to availability of individual customer data in GIS for
22 real-time use by field crews. Additional and ongoing efforts include coordination of GIS
23 for future risk-based evaluation of contingency planning and prioritization of capital
24 investment.

1 **Q9. Can you please briefly describe some of the major capital improvements reflected in**
2 **this case?**

3 A. Infrastructure improvements have been made at many of the Company's operating
4 locations. As previously noted, the improvements have occurred in the transmission and
5 distribution systems (mains, valves, service lines, meters, fire hydrants, booster stations
6 and tanks), and at the source of supply facilities and treatment plants.

7 Since the last rate case, the Company has replaced more than 97,000 lineal feet of
8 water lines across the operating divisions, representing approximately 1.4 percent of the
9 total waterline footage associated with this filing. Subsequent to the last rate case filing,
10 we have increased our efforts to an annual replacement of mains to approximately 1
11 percent, in alignment with the American Water Works Association's (AWWA's)
12 recommended replacement rate of 1.0 percent, *i.e.*, a 100-year life cycle for pipe, valves
13 and hydrants.

14 The Company utilizes asset age, condition and repair history when prioritizing
15 waterline replacement projects. The waterline projects in this rate case were prioritized
16 based on main-break history, improvements to water quality / elimination of dead ends,
17 improvements to system hydraulics and relocations necessitated from municipal or state
18 projects where the Company's waterlines were located within public rights-of-way.

19 The largest capital projects represented in the total above have resulted from:
20 replacing plant that is nearing or beyond its useful life (service and reliability), and
21 improvements to water quality (aesthetics as well as primary drinking water standards).
22 These projects have also addressed safety and security deficiencies and changes to OEPA
23 regulations.

24 A recap of the Company's capital infrastructure investment since the last rate case

and by major utility account can be found on Schedule B-2.3. A brief summary of the most significant capital projects since the last rate case follows below:

Masury Division

- **Waterline Replacement**

Approximately 8,880 feet of waterline were replaced in Masury. These projects included all or portions of twelve streets or roads and represent 6% of total mains within the Division.

Ashtabula Division

- **Ashtabula Waterline Replacement**

Approximately 23,600 feet of waterline were replaced in Ashtabula and an additional 4,344 feet of waterline were replaced in Jefferson. These projects involved 13 streets or roads.

- **Ashtabula Division Water Storage Tank Improvements**

The 250,000-gal Erie Street Tank in Jefferson, erected in 1959, was completely repainted (inside and out) and rehabilitated. The project addressed all structural, safety and operational deficiencies identified through prior routine inspections. Prior to this juncture, the tank was last painted in 1998 and following 25 years of duty, the paint system had reached its useful life and the structure required repairs.

- **Ashtabula WTP Improvements**

Improvements to the Ashtabula WTP included replacements of three (3) relay transfer pump motors (which convey finished water between clearwells prior to high service) and two (2) variable frequency drives (VFD) as well as a rebuild of three (3)

low-lift raw water pumps; all of which dating back to ca. 2000 for service and reliability purposes as these units were in need of replacement. Filter media was also replaced in the original six (6) filters not rehabilitated as part of the 2021 WTP Improvements for more uniform operational efficiencies; and a new orthophosphate chemical feed process was added in alignment with corrosion control measures to the benefit of the customers of the distribution system and consecutive PWSs.

Mentor (Lake) Division

- **Lake Waterline Replacements**

Nearly 23,000 feet of waterline were replaced in Lake, involving 12 streets or roads.

- **Lake Water Storage Tank Improvements**

The 0.75 MG Alder Court Tank, constructed in 1989 and last painted in 2001, received a new coating system on both the exterior and interior, as well as ancillary repairs and safety features as determined by previous inspection reports and OSHA requirements. Similar improvements were implemented at the Baxter East tank, a 1 MG tank constructed in 1959 and last improved upon in 2000; in the case of Baxter East tank, a passive-type mixer was also replaced as inclusive of the project.

- **Lake WTP**

Upgrades at the Lake WTP included, among other projects, the replacement of one (1) high service pump and variable frequency drive (VFD) and replacement of one MCC; and the replacement of twenty (20) filter valves and actuators for four (4) of the plant's 12 filters, which itself included new program logic controls (PLC) and associated plant SCADA integration, part of an ongoing endeavor to replace all aging

1 filter valves and actuators, all of which (valves) are original to the plant's construction
2 and expansion in 1955 and 1966, respectively.

3 At the low-service lift station, the WTP's intake screen was also replaced in
4 2022 as it was at the end of its useful life.

5 • **Auburn Lakes Water System**

6 Work in the Auburn Lakes system included the installation of a new
7 orthophosphate chemical feed process in alignment of corrosion control treatment
8 measures for the distribution system; as well as capturing service lines in GIS
9 throughout the distribution system, and the installation of a new culvert to provide
10 better access to supply wells No. 2 and 4.

11 • **Seneca Lake Water System**

12 Work in the Seneca Lake system included security enhancements by adding
13 fencing around its wells.

14 • **Shepard Hills Water System**

15 Work in the Shepard Hills system included building improvements inclusive
16 of a new roofing system, and new doors and siding.

17 **Mansfield/Portage/Mohawk Division**

18 • **Portage Waterline Projects**

19 Approximately 5,200 feet of waterlines were replaced along two public
20 streets/roads within the Portage Division.

21 • **Mansfield Waterline Replacement**

22 Approximately 3,850 feet of waterline were replaced in two of the Mansfield
23 systems, involving System Nos. 5 and 6.

1 • **Mansfield System Upgrades, Systems 1-11**

2 SCADA upgrades were performed at all systems inclusive of comprehensive
3 remote monitoring capabilities of all operational systems with cellular modems at
4 each location. At System No. 5, two (2) pressure tanks, beyond useful life, were
5 replaced with a single hydro-pneumatic tank for optimized service.

6 **Marion/Tiffin Division**

7 • **Marion Waterline Replacement**

8 10,159 feet of waterline were replaced throughout the Marion service area,
9 involving 13 streets or roads.

10 • **Marion – WTP Recarbonation Tank Improvements**

11 Resultant from inspection of the structure, the 0.1 MG WTP Recarbonation
12 Tank, a process component original to a 1927 expansion and most recently painted
13 in 1989, received extensive rehabilitation of the concrete foundation and coating
14 systems of both the exterior and interior as the existing coating system was well
15 beyond its useful life and concrete repairs at the foundation were found to be
16 necessary.

17 • **Marion Water Distribution Storage Tank Improvements**

18 The Gurley Ave. tank, a 0.3 MG elevated multi-leg tank constructed in 1945
19 and most recently improved upon in 2002, was likewise repaired and received a new
20 coating system of the exterior and interior. As with all Aqua tanks, this tank was
21 outfitted with a tank top access platform and fall protection, as well as a reconfigured
22 overflow pursuant to OEPA rule changes.

1 • **Marion WTP Improvements**

2 Upgrades implemented at the facility as part of this filing included the
3 replacement of piping and appurtenances relating to carbon dioxide process chemical
4 feed in poor condition and beyond its useful life, the construction of three (3) wells
5 (Well Nos. 38, 39 and 40) to replace underperforming wells; and miscellaneous site
6 improvements surrounding the WTP relating to the main access road to eliminate
7 flooding issues.

8 • **Tiffin Waterline Replacement**

9 Approximately 6,460 feet of waterline were replaced in Tiffin, involving 5
10 streets or roads; of which, this includes a major replacement of mains and critical
11 valves to accommodate the local jurisdiction's planned replacement of the Ella Street
12 bridge, which is adjacent to the WTP.

13 • **Tiffin WTP Improvements**

14 Treatment process equipment beyond its useful life were replaced as part of
15 this filing, inclusive of a clearwell mixer (necessary to reduce/eliminate algae growth
16 in an open-air setting), variable frequency drives (VFD) at one (1) low-service pump,
17 one (1) transfer pump, and one (1) high-service pump; and laboratory equipment
18 requisite for in-house personnel to perform necessary water quality analyses
19 including a post-filtration chlorine analyzer and fluoride analyzer.

1 **Franklin County/Lawrence/Lake White Division**

2 • **Waterline Replacement**

3 Approximately 7,900 feet of waterline were replaced in Franklin, involving 5
4 streets or roads. In Lawrence, the totals were approximately 2,200 feet of waterline
5 involving 2 streets/roads.

6 • **Water Storage Tank Rehabilitation and Repainting – Worthington Hills WTP**
7 **Ground Storage Tank**

8 The Worthington Hills Water Treatment Plant's ground storage tank,
9 constructed in 1969 and 200,000-gallons in volume, was improved pursuant to
10 recommendations provided by recent inspection reporting. This included a
11 completely new coating system of the exterior and interior, extending the useful life
12 of the tank.

13 • **Timberbrook WTP Improvements**

14 The Timberbrook WTP, with rated capacity of 0.180 MGD originally
15 constructed in the 1970s and consisting of an Aeralator treatment process, was
16 replaced with new dual-media filtration treatment using six (6) pressurized filters and
17 a new 10,200-gallon concrete clearwell constructed for finished water capacity
18 storage. As part of this improvement, a new building for the filtration process, high
19 service and filter backwash pumping, and chlorine chemical feed process was
20 constructed, and associated site work completed.

1 • **Remote SCADA Monitoring Upgrades**

2 As part of this filing, SCADA upgrades were performed inclusive of
3 comprehensive remote monitoring capabilities of all operational systems with
4 cellular modems at each location.

5 • **WTP Improvements – Franklin Division**

6 Ancillary improvements throughout the Franklin Division WTPs included
7 replacement and installation of well pumps and motors, chemical feed systems,
8 filters, and safety-related improvements. In addition, reverse osmosis (RO) process
9 equipment and related components, beyond their useful life and in need of
10 improvement at the Huber Ridge WTP, were thusly addressed.

11 **Q10. Does this conclude your direct testimony?**

12 A. Thank you, yes it does.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Direct Testimony of Nicholas A. Sanford was served by electronic mail to the following persons on this 13th of January 2023:

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Summary: Testimony Direct Testimony of Nicholas Sanford electronically filed by
Ms. Nicole R. Woods on behalf of Aqua Ohio, Inc.