BEFORE THE
STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES
OFFICE OF ADMINISTRATIVE LAW

IN THE MATTER OF THE PETITION OF
NEW JERSEY-AMERICAN WATER COMPANY, INC.
FOR APPROVAL OF INCREASED TARIFF RATES AND
CHARGES FOR WATER AND WASTEWATER SERVICE,
CHANGE IN DEPRECIATION RATES,
AND OTHER TARIFF MODIFICATIONS

OAL Docket No. PUC 02409-2024 S

BPU Docket No. WR24010056

Supplemental Direct Testimony of

DONALD C. SHIELDS

in Support of 9&3 Update

April 23, 2024

Exhibit P-5S

NEW JERSEY-AMERICAN WATER COMPANY, INC.

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

A. My name is Donald C. Shields, and my current business address is 1 Water Street, Camden, New Jersey 08102.

2. Q. By whom are you employed and in what capacity?

A. I am employed by American Water Works Service Company, Inc. ("Service Company") as Vice President of Engineering supporting New Jersey-American Water Company, Inc. ("NJAWC" or the "Company"), Virginia-American Water Company and Maryland-American Water Company.

3. Q. Are you the same Donald C. Shields who filed Direct Testimony on January 19, 2024 in this proceeding, marked as Exhibit P-5?

A. Yes, I am.

4. Q. What is the purpose of your Supplemental Direct Testimony in this proceeding?

A. The purpose of my Supplemental Direct Testimony is to describe the updates and revisions to both replacement and investment projects that have been included on Schedule DCS-1.

5. Q. Has an update of Schedule DCS-1 that was filed with your Direct Testimony been prepared?

A. Yes. Please see updated Schedule DCS-1, attached to this Supplemental Direct Testimony.

6. Q. Please describe the updates that were made for projected additions to utility plant in service in Schedule DCS-1.

A. The following paragraphs discuss updates and revisions to Schedule DCS-1 that are included for recovery in this rate case. Please see the updated Schedule DCS-1 for a complete listing, including costs and in-service dates, of all Test Year and Post-Test Year projects included in this base rate proceeding.

Recurring Project ("RP") updates are shown on updated Schedule DCS-1, but are not discussed herein, as the scope of the changes are normal for RPs. The updates for both RPs and Investment Projects ("IPs") result in a net increase of approximately $23 million. Projects designated with an asterisk (*) were not able to be completed for various reasons, including delays in receiving materials, permitting applications, design changes and related issues. Other projects have revised in-service dates that have moved beyond the test year to be completed in the post-test year period.

All projects are expected to be completed with in-service dates as shown on the schedule. Note that many of the projects' budget variances and in-service date variances are the result of changes in scope, unforeseen conditions, and delays due to various issues such as weather, manufacturing and equipment delivery delays, etc.

7. Q. Why has the Company included additional projects on Schedule DCS-1_9&3 Update for consideration in this proceeding?

A. The Company has identified additional projects to enable the Company to continue to provide safe, adequate and proper service. As a result, and in light of other project movements, the Company re-allocated capital funding for these projects. NJAWC was

thus able to accelerate certain capital projects that will facilitate the Company's provision of safe, adequate, and proper service.

Individual descriptions and updates for the added projects are included below:

I18250138 - Belle Mead Ops Admin HVAC Improvements: This project consists of replacement of an aging, inefficient 40-ton rooftop HVAC unit (RTU)with a new, energy efficient 50-ton unit, as well as removal and replacement of two aging, inefficient 500,000 BTU boilers at the Belle Mead Operations Center. The project also includes replacements of temperature control systems, variable air valves ("VAV"), zone valves, circulating pumps, etc.

I18350006 - Long Hill Wastewater Cleaning & Lining: The work under this project is needed to reduce infiltration and inflow ("I&I") in an area of the Long Hill sewer system with significant I&I. The work includes cleaning and lining of over 3,500 linear feet of 14" vitrified clay/asbestos cement pipe ("VCP/ACP"), 1,400 linear feet of 12" VCP/ACP, as well as the rehabilitation of 20 manholes.

I18250079 – Raritan Millstone WTP ("RMWTP") Ammonia Handling Facility Improvements: This project includes design and construction of a new aqua ammonia handling facility to replace the existing anhydrous ammonia handling system at the RMWTP. The existing anhydrous (gas) ammonia handing has been in use for many decades at the RMWTP and is at the end of its useful life. In addition, the use of ammonia gas presents a safety concern and replacement of the system with a suitable, less hazardous alternative will prevent the negative impacts of an accidental release and

mitigate safety concerns. The 2017 comprehensive planning study ("CPS") recommended replacement of the anhydrous system with a 19% ammonium hydroxide (aqua ammonia) system which is less hazardous. A new ammonia building will be constructed on the north side of the filter building and will house two bulk storage tanks, a day tank, transfer pumps, and feed pumps. Double walled containment piping will be used between the ammonia building and the five feed points, and safety eyewash/showers, SCADA, fire suppression, fire alarm, security and other ancillary work is included in the project. The anhydrous ammonia system will be demolished and retired after the new system has been placed in operation. This project encountered significant delays in completion due to timing and delay of local building permits as well as significant issues with groundwater leakage within the building foundation which required extensive design and field work to complete.

I18250137 - Kent Ave Well Station Arsenic Removal: Kent Avenue Well Station has been using an Isolux arsenic adsorption system to remove arsenic from local groundwater supply. The existing treatment vessel is undersized and has had significant clogging concerns when pumped at the well's rated capacity. This project includes replacing the Isolux treatment system with an AdEdge Water Technologies arsenic adsorption system, which is more cost effective. This project encountered significant delays in permitting and construction due to local permitting challenges and delays in receiving equipment.

Two projects had added costs due to additional work needed after the project was placed into service. These projects are listed on DCS-1_9&3 Update as follows:

I18180050 36" Rumson Place Little Silver: additional site restoration and paving work was required due to settlement issues around the new main that also required extensive grouting of the soils in the vicinity of the pipeline installation. It was determined that the jack and bore installation as well as groundwater control methods caused the settlement. The roadway settlement issue is now resolved.

I18130147 Beckett Station PFAS Removal: after the installation of new PFAS removal equipment (tanks, GAC, etc.) the plant clarifiers were operated and found to be in need of repairs in order to maximize the plant throughput. These repairs were completed and the plant can now run at full flow with greater efficiency.

8. Q. Why was it necessary to update Schedule DCS-1?

A. This schedule was originally prepared early in the planning process. Not all projects were bid at that point. Local permit approvals were still pending for certain projects as well. It is very common to develop alternatives or adjustments to planned investment projects during the design, permitting, approvals and bidding processes based on changing needs, priorities or circumstances. Projects are added to or removed from the portfolio of projects based on changing priorities and/or individual project progression or delay. Scope, cost estimates and schedules can also be impacted by various factors during the permitting and local planning board approval process in advance of bidding.

It is also important to note that the effects of COVID-19 are still impacting the construction industry. Material supply order delays are significant. For example, ductile iron pipe that historically was ordered and delivered within a two-week timeframe is now running at a delivery time of 12-16 weeks. Emergency generators for

booster stations and other facilities are running well over 26 weeks for delivery. These are but two examples of significant delays in materials, but the issue affects all components of the Company's projects: semiconductors for SCADA equipment and other instrumentation and control equipment, steel for plant structures, meters, pumping equipment, valves, etc. Moreover, availability of workers is an ongoing issue that hampers contractors' ability to staff and execute projects. Some contractors have declined to bid on work due to lack of personnel.

Despite the issues mentioned above, the Company is now well into the construction phase for these projects, with approvals having been received, projects having been bid and construction contracts signed and in nearly all cases work is underway. The projects on Schedule DCS-1 are scheduled to be completed by the "In Service" dates shown in this schedule.

9. Q. Does this conclude your Supplemental Direct Testimony?

A. Yes.

NJAW Additions to Plant in Service 07/01/23 - 12/31/24									
				Original Filing		9 + 3 Update			
Project	Ref	Description	Service	Project Total	Est In Service Date	Test Year 7/01/23 - 06/30/24	Post-Test Year 07/01/24 - 12/31/24	Project Total	Est In Service Date
Investment Projects									
I18180050		36" Rumson Pl Little Silver	Water	1,682,011	04/01/21	2,531,311		2,531,311	04/01/21
I18130147		Beckett Station PFAS Removal	Water	1,593,788	12/01/22	2,052,130		2,052,130	12/01/22
I18260100		Jerusalem Rd Booster Sta Imprv	Water	3,735,525	07/05/23	3,735,525	-	3,735,525	07/05/23
I18260115		2023 Transmission Main Inspection	Water	501,251	07/17/23	501,251	-	501,251	07/17/23
I18120050		Coastal South A&C Upgrades Phase 6	Water	598,515	07/28/23	598,515	-	598,515	07/28/23
I18340002		2nd Ave Lift Station Replacement	Wastewater	2,449,709	08/01/23	2,449,709	-	2,449,709	08/01/23
I18190049		Howell Field Ops Center	Water	4,904,553	08/01/23	5,110,387		5,110,387	08/01/23
I18250126		CRWTP Alum Tank Replacements	Water	2,469,512	08/07/23	2,469,512	-	2,469,512	08/07/23
I18260114		2022 Transmission Main Inspection	Water	2,555,335	08/07/23	2,555,335	-	2,555,335	08/07/23
I18300002		Vincentown Supply Reliability	Water	4,587,655	08/10/23	4,587,655	-	4,587,655	08/10/23
I18190055		Farmingdale Transmission Loop	Water	2,045,270	08/29/23	2,045,270	-	2,045,270	08/29/23
I18190054		Rt 9 Water Main Replacement	Water	10,675,860	08/30/23	10,675,860	-	10,675,860	08/30/23
I18260134		North Plainfield C&L	Water	2,531,165	08/31/23	2,531,165	-	2,531,165	08/31/23
I18180100		JBWTP Belt Filter Press	Water	770,739	09/18/23	770,739	-	770,739	09/18/23
I18120049		Mill Rd-N.Linwood Iron Removal	Water	16,846,817	09/28/23	16,846,817	-	16,846,817	09/28/23
I18240002		Pottersville Sewer Addison Rd Rehab A-26	Wastewater	1,205,501	09/29/23	1,205,501	-	1,205,501	09/29/23
I18170008		Oxford Sta Treatment Upgrades	Water	3,657,503	11/30/23	3,657,503	-	3,657,503	11/30/23
I18150114		Phase 6 NRW 2023	Water	618,124	11/30/23	618,124	-	618,124	11/30/23
I18250138		Belle Mead Ops Admin HVAC Impr	Water	-		1,206,843		1,206,843	12/21/23
I18280004		Fawn Run-Plant Upgrades IF-1 2022	Wastewater	1,257,000	10/30/24	(417,769)	989,000	571,231	12/29/23
I18350001		Long Hill WW Vac Truck Building IF-4	Wastewater	7,762,398	12/31/23	10,056,561	-	10,056,561	12/31/23
I18260137		NRW Management 2023 - Central	Water	2,047,523	12/31/23	2,047,523	-	2,047,523	12/31/23
I18350006		Long Hill Wastewater C&L	Wastewater	-		1,323,820	-	1,323,820	01/31/24
I18250079		RMWTP Ammonia Hand Facility Impr	Water	-		7,559,566	-	7,559,566	02/05/24
I18250137		Kent Ave Well Station Arsenic Removal	Water	-		2,719,803	-	2,719,803	02/06/24
I18280006		Statewide Sewer A&C Upgrades Ph 2 2023	Wastewater	529,135	12/31/23	529,135	-	529,135	03/31/24
I18230014		Pearl St Sewer Upsize (A-5)	Wastewater	149,429	12/31/23	50,691	-	50,691	06/30/24
I18280003		Glen Meadows-TreatUnitUpgrd IF-2 2022	Wastewater	4,556,387	04/30/24	5,597,584	-	5,597,584	06/30/24
I18350003		Long Hill PS Improvements Project - IF-2	Wastewater	2,715,637	06/30/24	3,076,467	-	3,076,467	06/30/24
I18130157		Lawnside Ops Center: Block-C	Water	3,641,236	12/31/23	3,641,236	-	3,641,236	06/30/24
I18270004		Homestead Chem Feed & Storage	Wastewater	1,289,390	12/27/24	-	2,448,284	2,448,284	12/27/24
I18190052		Bay Head HDD and Main	Water	1,762,809	04/26/24	1,775,363	700,000	2,475,363	12/27/24
I18250127		CRWTP Solar Inverter&Panel Repl- A-16	Water	3,800,000	12/27/24	-	3,800,000	3,800,000	12/27/24
I18190063		Point Pleasant I/C	Water	1,401,746	08/31/24	-	767,064	767,064	12/29/24
I18010037		2023 LEUP Program	Water	750,000	12/29/24	-	450,000	450,000	12/29/24
I18150093		Basking Ridge BS Generator	Water	800,000	12/29/24	-	800,000	800,000	12/29/24
I18250077		RMWTP Filter 31 36 Iso Gates Imprv	Water	1,500,475	12/29/24	-	1,545,320	1,545,320	12/29/24
I18260094		Oak Tree Booster Sta Upgrades A-18	Water	8,349,985	12/30/24	-	7,186,946	7,186,946	12/30/24
I18270005		Hawk Pointe WW Plant Upgrade (IF-4)22	Wastewater	3,076,480	12/31/24	-	2,568,480	2,568,480	12/31/24
I18350010		LH Aerial Crossing Mitigation - IF-7	Wastewater	1,152,717	12/31/24	-	1,161,636	1,161,636	12/31/24
I18230020		Ridge Ave/Negba St Sewer Up-size (A-11)	Wastewater	2,118,365	12/31/24	-	2,152,036	2,152,036	12/31/24
I18350004		WWTP Filter and Pump Improvements - IF-1	Wastewater	6,979,759	12/31/24	-	8,311,883	8,311,883	12/31/24
I18350020		LH WW Sys SCADA Upgrades IF-6	Wastewater	450,000	12/31/24	-	922,948	922,948	12/31/24
I18270007		Crossroads WWTP Imprv(A-7)2022	Wastewater	1,500,000	12/31/24	-	1,500,000	1,500,000	12/31/24
I18280007		Statewide Sewer A&C Upgrades Ph 3 2024	Wastewater	1,400,004	12/31/24	-	1,325,787	1,325,787	12/31/24
I18350008		2024 Long Hill WW C&L	Wastewater	1,000,000	12/31/24	-	1,000,000	1,000,000	12/31/24
I18150132		Irvington LSL Replacement - Company Owned	Water	11,241,688	12/31/24	8,894,976	2,346,712	11,241,688	12/31/24
I18260136		Central LSL Replacements 2023 - Company Owned	Water	38,479,043	12/31/24	33,236,772	5,242,271	38,479,043	12/31/24
I18180081		Coastal North JB/SR A&C Upgrades Phase 4	Water	1,611,845	12/31/23	-	1,372,931	1,372,931	12/31/24
I18260131		Linden 36in PCCP Replacement-Phase 4	Water	7,400,904	02/28/24	8,699,316	-	8,699,316	12/31/24
I18150133		Chester Booster Pump Upgrade	Water	29,167	10/30/24	-	500,000	500,000	12/31/24
I18260068		Central A&C Upgrades Ph 6e,g	Water	2,771,666	12/31/24	-	2,567,062	2,567,062	12/31/24
I18180096		Tinton Falls 30" Concrete Main	Water	6,442,866	12/31/24	-	6,644,009	6,644,009	12/31/24
I18130024		Cooper Ivy Radium Removal (A2)	Water	12,982,817	12/31/24	-	12,853,484	12,853,484	12/31/24
I18190062		Oak Street PFAS	Water	5,862,899	12/31/24	-	5,914,273	5,914,273	12/31/24
I18180088		Swimming River Intake Rehab	Water	1,020,118	12/31/24	-	1,020,118	1,020,118	12/31/24
I18250125		RM FilterHouse Dehumi & HVAC Impr	Water	9,019,406	12/31/24	-	9,396,396	9,396,396	12/31/24
I18130138		Burlington Main to North Creek Xing	Water	1,900,731	12/31/24	-	1,982,306	1,982,306	12/31/24
I18250167		RM Permanganate Chemical System Upgrades	Water	2,008,261	12/31/24	-	2,347,795	2,347,795	12/31/24
I18260135		Green Brook Well Sta 5 MGD Transfer Mod	Water	1,208,759	12/31/24	-	2,048,547	2,048,547	12/31/24
I18120058		Smithville Generator Replacement	Water	510,958	12/31/24	-	501,912	501,912	12/31/24
I18130115		Southwest A&C Upgrades Phase 6	Water	2,162,614	12/31/24	1,891,571	-	1,891,571	12/31/24
I18150063		North A&C Upgrades Phase 6	Water	2,477,289	12/31/24	-	2,273,484	2,273,484	12/31/24
I18250158		CRWTP Raw Water 40 MGD Pump	Water	3,001,843	12/31/24	-	3,005,278	3,005,278	12/31/24
I18120059		Somers Point Storage	Water	1,084,170	12/31/24	-	876,873	876,873	12/31/24
I18150088		CBWTP Raw Wtr Intake Impr A11	Water	3,523,398	12/31/24	-	2,975,453	2,975,453	12/31/24
I18150130		North A&C Upgrades Phase 7	Water	1,562,500	12/31/24	-	1,125,000	1,125,000	12/31/24
I18170032		ITC Main Extension	Water	2,000,000	12/31/24	-	1,400,000	1,400,000	12/31/24
I18180083		Coastal North JB/SR A&C Upgrades Phase 5	Water	1,500,000	12/31/24	-	1,325,000	1,325,000	12/31/24
I18250084		RMWTP LowLift to EHL Wtr Line Imprv Comp	Water	360,000	12/31/24	-	360,000	360,000	12/31/24
I18260123		2024 Transmission Main Inspection	Water	2,500,000	12/31/24	-	2,575,000	2,575,000	12/31/24
I18260142		NRW Central 2024	Water	1,500,000	12/31/24	-	1,587,907	1,587,907	12/31/24
I18250146		CRWTP Phosphoric Acid System Impr	Water	1,552,867	12/31/24	-	2,717,470	2,717,470	12/31/24
I18190056	*	Coastal North - Corrosion Control Optimi	Water	501,861	12/31/24	-	-	-	06/30/25
I18180092	*	Monmouth County Trans Main Inspection	Water	1,218,748	10/31/24	-	-	-	11/26/25
I18220010	*	Bay Avenue Sanitary Sewer Imprv	Wastewater	2,562,800	12/27/24	-	-	-	12/27/25
I18070002	*	EDC Bed 1 PS Improvements	Wastewater	84,831	12/31/24	-	-	-	12/31/25
I18230038	*	Yellowbrook Station Sanitary Relocation	Wastewater	451,172	12/31/24	-	-	-	12/31/25
I18130132	*	Ranney Sta New Shallow Wells A2	Water	2,501,142	12/31/24	-	-	-	12/31/25
I18130097	*	Pipeline Condition Assessment (A15)	Water	1,060,000	12/31/24	-	-	-	12/31/25
I18180098	*	Glendola Intake Structure Improvements	Water	1,033,625	12/31/24	-	-	-	12/31/25
I18130150	*	AMI Installations – Delran	Water	1,573,824	12/31/24	-	-	-	12/31/26

NJAW Additions to Plant in Service 07/01/23 - 12/31/24

				Original Filing		9 + 3 Update			
Project	Ref	Description	Service	Project Total	Est In Service Date	Test Year 7/01/23 - 06/30/24	Post-Test Year 07/01/24 - 12/31/24	Project Total	Est In Service Date
I18180087	*	AMI Installations Shrewsbury	Water	880,210	12/31/24	-	-	-	12/31/26
		Various Investment Projects	Water	3,001,250	Various	6,380,670	-	6,380,670	Various
		Various Investment Projects	Wastewater	691,297	Various	721,530	-	721,530	Various
Total Investment Project Spend				$264,695,875		$163,933,967	112,588,661	$276,522,633	
Recurring Projects (RP)									
RP-A		New Mains	Water	19,897,182	Various	11,626,247	7,500,000	19,126,247	Various
RP-B		Replaced Mains	Water	189,180,759	Various	140,059,789	51,585,000	191,644,789	Various
RP-C		Unscheduled Main Replacements	Water	19,935,013	Various	13,735,064	7,000,002	20,735,066	Various
RP-E		New Hydrants & Valves	Water	6,444,134	Various	3,891,598	2,368,902	6,260,500	Various
RP-F		Replaced Hydrants & Valves	Water	29,369,045	Various	18,113,259	10,500,000	28,613,259	Various
RP-G		New Services	Water	24,685,709	Various	15,842,711	8,695,302	24,538,013	Various
RP-H		Replaced Services	Water	82,275,183	Various	57,252,283	26,942,628	84,194,911	Various
RP-I		New Meters	Water	4,947,977	Various	2,388,008	1,804,878	4,192,886	Various
RP-J		Replaced Meters	Water	57,514,956	Various	43,961,698	17,811,204	61,772,902	Various
RP-K		ITS Equipment & Enterprise Solutions	Water	37,258,377	Various	18,418,346	1,401,912	19,820,258	Various
RP-L		SCADA	Water	3,860,783	Various	2,596,472	1,825,752	4,422,224	Various
RP-M		Security	Water	2,725,357	Various	1,145,846	1,072,500	2,218,346	Various
RP-N		Offices & Facilities	Water	3,531,025	Various	4,430,944	1,500,000	5,930,944	Various
RP-O		Vehicles	Water	18,625,067	Various	17,317,376	4,000,000	21,317,376	Various
RP-P		Tools & Equipment	Water	3,293,164	Various	1,608,379	1,151,358	2,759,737	Various
RP-Q		Plant Process Equipment	Water	41,625,154	Various	37,333,127	15,263,523	52,596,650	Various
DV		Developer Funded Projects	Water	23,348,101	Various	21,756,528	6,000,000	27,756,528	Various
RP-B		Replaced Mains	Wastewater	6,032,606	Various	1,450,976	2,415,000.00	3,865,976	Various
RP-C		Unscheduled Main Replacements	Wastewater	665,513	Various	1,086,119	-	1,086,119	Various
RP-E		New Hydrants & Valves	Wastewater	44,094	Various	66,269	-	66,269	Various
RP-F		Replaced Hydrants & Valves	Wastewater	1,400,765	Various	518,029	616,508.00	1,134,537	Various
RP-G		New Services	Wastewater	3,565,741	Various	2,245,618	1,331,800.00	3,577,418	Various
RP-H		Replaced Services	Wastewater	3,969,033	Various	2,847,368	1,399,250.00	4,246,618	Various
RP-L		SCADA	Wastewater	797,961	Various	474,454	322,500.00	796,954	Various
RP-M		Security	Wastewater	50,000	Various	12,500	25,000.00	37,500	Various
RP-N		Offices & Facilities	Wastewater		Various	21,168		21,168	Various
RP-P		Tools & Equipment	Wastewater	326,142	Various	137,974	95,639.00	233,613	Various
RP-Q		Plant Process Equipment	Wastewater	8,086,428	Various	6,543,197	3,366,034.50	9,909,231	Various
DV		Developer Funded Projects	Wastewater	2,252,305	Various	4,588,588	-	4,588,588	Various
Total RP/DV Spend				$595,707,574		$431,469,935	$175,994,692	$607,464,627	
Total Additions to Plant In Service 07/01/2023 - 12/31/2024				$860,403,449		$595,403,902	$288,583,354	$883,987,261	

* Project has been delayed beyond the end of the Post-Test Year, 12/31/24.