WEST DES MOINES WATER WORKS

REQUEST FOR PROPOSALS

PROFESSIONAL ENGINEERING SERVICES

FOR

A.C. WARD WATER QUALITY STUDY

May 6, 2026

INTRODUCTION

The West Des Moines Water Works (WDMWW) is soliciting competitive proposals from qualified engineering firms for services in conducting and completing a preliminary water quality study. This study will investigate options for resolving water quality challenges and operational constraints at the A.C. Ward Water Treatment Plant due to these source water challenges.

PROJECT DESCRIPTION

The A.C. Ward Water Treatment Plant provides potable water service to the citizens of West Des Moines, Iowa. The A.C. Ward plant, which is owned by CIWW and managed by WDMWW, was initially built in 1953 and has seen multiple expansions and renovations through the years. The treatment facility utilizes water from both the Jordan and alluvial aquifers, and experiences an array of water quality characteristics that this study will focus on. Due to the Jordan water source, treated water from A.C. Ward contains sulfate and total dissolved solids that exceed secondary standards. The Jordan wells also deliver fluoride concentrations that result in relatively high finished water averages. The 2025 fluoride average concentration was 1.15 mg/L, but it has ranged as high as 1.7 mg/L. The major alluvial well source challenges include PFAS contamination in a handful of specified wells and quantity limitations. Water Works has been pursuing potential new alluvial well fields in the vicinity of the existing raw water network the last several years, but that task has demonstrated to be difficult and complex. The water quality of both sources currently necessitates blending the Jordan and alluvial water to manage these parameters, but there may be treatment options that can better maximize the source water available. This study aims to provide treatment suggestions at A.C. Ward that will improve these operational and finished water challenges.

The engineering consultant whose principals are registered professional engineers in the State of Iowa must have a minimum of five (5) years of experience in the design, construction, operations, plant troubleshooting, and maintenance of similar-sized water treatment facilities. WDMWW intends to enter a contract with the selected consultant in July 2026, with the objective of completing the water quality study by the end of 2026.

West Des Moines Water Works will make a complete collection of water quality data accessible to the selected firm.

A.C. WARD DESCRIPTION OF TREATMENT PLANT PROCESS

Basic Plant Information

A.C. Ward Water Treatment Plant, located at 1505 Railroad Avenue in West Des Moines, Iowa was originally constructed in 1953. The facility is a Grade IV lime softening plant, and maintains a plant capacity of 10 MGD. The average day demand is 7 MGD. The water treated at A.C. Ward typically serves two of the five pressure zones in West Des Moines and is sourced by 17 alluvial wells and 4 deep Jordan wells. Pressure zone three, which normally receives water from DMWW, occasionally will receive water from A.C. Ward during the high demand season. The differing water quality is noticed by customers, particularly the difference in sulfate and TDS, and the outcome of this study intends to reduce this variation in water quality. Chemicals applied at A.C. Ward include sodium hypochlorite, lime, soda ash, ferric chloride, phosphate, and carbon dioxide.

Plant Process

When the water is first pumped to the plant, it is received by two aerators located on the south side of the facility and adjacent to the main plant office. These aerators are WesTech Model AWF 105-19 aluminum force draft aerators that have capacities of 4,000 gpm each. Each aerator has a dedicated detention tank that had prior utilization in the past for pre-chlorination and removal of perchlorate. While no longer used for those reasons, the detention tanks are still used to settle out precipitated iron.

Following aeration, water is sent to the solids contact units, which were constructed in sets as part of two different plant expansions. SCUs 1 and 2 were originally constructed in 1962, and have diameters of 60 feet and side water depths of 14.1 feet. SCUs 3 and 4 were constructed in 1996, and have diameters of 60 feet and side water depths of 19.1 feet. During typical operation for most of the year, A.C. Ward will operate two clarifiers at once. During the peak demand season, it is common to have three SCUs in operation.

A.C. Ward has 13 gravity filters that are sectioned in three groups, according to consecutive plant expansions over the year. The filters vary in sizing across the three groups, but receive the same air backwash flow rates. Filter backwashes occur at a frequency of about every 120 hours of filter runtime.

Lime sludge produced in the lime softening process is pumped via a wet well and a couple transfer pumps in building No. 2 to the lime thickening building. Ultimately, sludge from the thickener tank gets transferred to the lime press building where it will be pressed into solids and hauled off-site to be applied to agricultural fields.

PROJECT SCOPE OF SERVICES

The selected Consultant shall provide engineering services to identify and compare treatment alternatives to address PFAS, fluoride, TDS, and sulfate. The following deliverables shall be included in this project:

1. Schedule and manage an in-person kick-off meeting with the Owner. During the kick-off meeting, Water Works can have additional water quality data available to review as requested.

2. Meet monthly with the owner to discuss project progress. Monthly progress meetings can be virtual, or in-person.

3. Provide a completed study report that describes four (4) treatment alternatives and comparison of options that can remove or reduce PFAS, fluoride, TDS, and sulfate. Each alternative should discuss the following considerations: both construction and on-going operations costs, effect on plant capacity and source water needs, effect on labor & maintenance for operation, space needs and location within the existing plant layout, impact on existing process infrastructure, considerations of plant residuals, and permitting.

4. Provide a draft of the study report to be reviewed by the Owner at least a couple of weeks prior to finalizing the completed document. Comments and edit suggestions will be sent back to the Consultant.

5. A budgetary cost analysis and breakout of each treatment alternative shall be developed and presented in the completed study report. Assumptions utilized in the life-cycle cost analysis shall be stated and described.

6. Prepare a separate Preliminary Engineering Report. The Consultant shall develop and draft a preliminary engineering report on the Owner-selected treatment alternative that can be submitted by Water Works to IDNR for approval and inclusion on an existing SRF application. The intent is to add a future plant modification project to the scope of an existing SRF project that has already been approved for the Intended Use Plan and Project Priority List. This project will be considered for PFAS Loan Forgiveness.

7. This study shall address the challenges of the Jordan/alluvial water blend ratio, and provide strategies that will reduce the operational limitations of needing to blend the water source types, including evaluating the designation of Jordan water as the primary source.

MINIMUM QUALIFICATIONS OF ENGINEERING FIRM

Please provide an attachment to the Professional Services Proposal confirming the following minimum qualifications for the engineering firm. This attachment should be signed by the firm.

1. The proposing firm must have full-time engineers that hold current engineering registrations in applicable categories. Engineers in responsible charge shall have been licensed in their home state for a minimum of five years and maintain State of Iowa Engineering licensure while working on this project. The principal to be assigned to this project must be available for meetings with WDMWW, as required.

2. The firm must employ an in-house staff of full-time persons or have established relationships with other firms specializing in the following areas:
    a. Water Treatment Infrastructure Design
    b. Site Plan Preparation

3. The firm, or principal assigned to the project, must have previous experience in the above areas of expertise and have performed at least five related projects within the last ten years.

4. The volume of the firm's current workload must not adversely affect its ability to immediately initiate work and complete work in a timely manner.

PROPOSAL QUESTIONS

Questions regarding this Request for Proposals should be submitted via email to Daria Dilparic, Civil Engineer – Water Production, at daria.dilparic@wdmww.com, no later than 4:00 pm on May 29, 2026. Submitted questions and answers will be posted on or about 4:00pm on June 2, 2026, at http://www.wdmww.com/2026waterqualitystudy.aspx.

Site visit requests may also be submitted via email to daria.dilparic@wdmww.com.

PROPOSAL SUBMISSION

Submit proposal package in a sealed envelope to include the following:

1. Letter of Interest

2. Summary of Qualifications and Experience. Provide detailed descriptions of related projects and who on the team was involved in the project. Emphasize experience related to similar water quality studies or facility plans. Contacts for references should be provided for each project listed.

3. Short bio of key staff directly involved in this project and their availability to meet the proposed project schedule.

4. If more than one firm is submitting, please include examples of how you have teamed within the last ten years.

5. A Form of Contract shall be submitted that includes the legal terms and conditions.

Include the following information in a separately sealed envelope.

1. Fee Proposal that identifies a breakdown of hours by project personnel, scope, and proposed fee. The Fee Proposal shall break out the costs associated with the Preliminary Engineering Report separately.

All costs incurred in preparing this proposal will be the responsibility of the Consultant. Submission shall include either five (5) hard copies and a reproducible PDF on a flash drive or PDFs submitted via email. If submitted via email, the fee proposal shall be included as a separate, specified attachment. The submission should not exceed 15 pages in length.

Deadline for the response is Thursday, June 11th, 2026, at 10:00 a.m. Proposals should be delivered or emailed to:

Engineering Services Proposal for A.C. Ward Water Quality Study
Daria Dilparic, Civil Engineer – Water Production, daria.dilparic@wdmww.com
West Des Moines Water Works
1505 Railroad Avenue
West Des Moines, IA 50265

SELECTION CRITERIA

Proposals will be evaluated and pre-selected for Board approval based on the following criteria:

1. Letter of Interest and Project Approach
2. Project Related Experience
3. Personnel Assigned to Project

WDMWW reserves the right to negotiate the fee seeking the best qualified consultant in the best interest of WDMWW. Technical proposals will be evaluated prior to reviewing fee proposals.

SCHEDULE OF WORK

Release of RFP ..... May 6, 2026
Deadline for submitting questions ..... May 29, 2026
Answers to submitted questions emailed to interested firms ..... June 2, 2026
RFP Submittal Deadline..... June 11, 2026
Consideration of submittals and consultant selection (Tentative) ..... June 19, 2026
Agreement for Professional Services Executed (Tentative) ..... July 15, 2026
Study Start (Tentative)..... July 20, 2026
Study Finish (Tentative) .....December 2026
Preliminary Engineering Report Completed (Tentative) ..... February 2027

SOURCE WATER QUALITY DATA

Well Water Quality Data:

The data shown in the table below represent averages of each parameter following three sampling sets per well. Well #7 was out of service for maintenance repairs for most of 2025. Shaded lines denote Jordan Aquifer wells.

Well	Total Hardness	NC Hardness	Total Ammonia	Calcium Hardness	TDS	Nitrate	Fluoride	Sulfate	Total Alk	pH	Iron
5	395	102	0.28	290	645	0.65	0.45	70	340	7.22	0.54
6	423	100	0.12	318	673	1.280	0.45	55	330	7.16	0.39
7	262	26	0.32	236	746	0.23	0.36	73	326	7.35	1.02
8	490	94	0.21	346	581	0.15	0.43	79	400	7.08	2.48
9	548	134	0.06	326	509	0.17	0.40	20	414	7.04	2.24
14	264	32	0.13	268	625	0.37	0.31	53	248	7.42	0.11
15	319	69	0.02	240	547	0.4	0.30	48	250	7.47	0.31
16	527	157	0.31	373	555	0.18	0.32	80	359	7.13	1.69
17	339	80	0.33	243	414	0.11	0.36	23	259	7.27	1.02
18	328	66	0.56	223	371	0.07	0.36	27	267	7.27	2.49
19	389	99	0.02	279	572	0.79	0.39	50	291	7.23	0.25
20	242	26	0.82	153	265	0.13	0.28	1	217	7.29	2.26
21	363	47	0.73	221	398	0.26	0.33	17	301	7.23	3.55
22	348	64	0.01	279	527	0.65	0.38	44	275	7.44	0.11
23	503	74	0.03	376	643	0.44	0.36	106	379	7.09	0.39
24	495	135	0.08	351	551	0.10	0.37	75	355	7.11	1.10
25	374	80	0.03	269	536	0.20	0.33	50	271	7.43	0.78
1	331	54	1.34	162	727	0	2.38	575	263	7.53	0.33
3	371	107	1.26	219	907	0.03	2.49	520	253	7.43	0.19
4	370	101	1.29	193	891	0.03	2.49	502	264	7.56	0.29
26	322	56	1.24	213	886	0.02	2.50	578	275	7.53	0.03
Alluvial Avg:	383	87	0.40	274	603	0.30	0.58	151	304	7.30	1.14
Jordan Avg:	349	80	1.28	197	853	0.02	2.47	544	264	7.51	0.21

Shallow Wells Average Annual Pump Rate (gpm):

Well	2020	2021	2022	2023	2024
5	161	226	96	168	88
6	161	53	134	138	164
7	226	136	56	288	123
8	77	183	115	75	30
9	177	227	193	185	60
14	123	81	149	83	0
15	142	70	140	121	102
16	80	91	147	102	196
17	169	183	75	161	169
18	69	127	120	143	113
19	170	222	211	139	54
20	79	145	88	71	0
21	254	190	133	191	109
22	100	148	226	141	126
23	181	117	0.0	287	143
24	174	129	53	160	64
25	116	48	265	141	241

*Value of 0 implies well was out of service.

Shallow Wells PFAS Concentrations (ng/L):

Well	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFBS	PFHxS	PFOS	SUM	HI
5	5.2	5.5	3.7	0	0	7.5	7.10	4.6	33.6	0.71
6	4.2	8.3	6.3	3.3	2.40	2.2	4.7	16.0	47.4	0.47
7	3.3	1.9	0	0	2.6	5.4	3.4	8.0	24.6	0.34
8	3.2	0	0	0	0	2.6	2.3	0	8.1	0.23
9	15	54	45	14	29	7.4	2.2	3.1	169.7	0.22
14	5	0	0	0	0	5.7	0	3.1	13.8	0.00
15	5.1	0	0	0	0	6.7	0	2.3	14.1	0.00
16	1.9	0	0	0	0	2.4	0	0	4.3	0.00
17	2.7	0	0	0	0	2.2	0	0	4.9	0.00
18	3.2	0	0	0	0	2.8	0	0	6	0.00
19	7	4.2	3.7	0	5.2	5.2	6.3	9.9	41.5	0.63
20	3.6	0	0	0	0	1.9	0	0	5.5	0.00
21	0	0	0	0	0	2.1	0	0	2.1	0.00
22	9.5	11	9.3	3	6.8	6.4	0	3.5	49.5	0.00
23	11	47	37	8.3	18	4.3	0	2.3	127.9	0.00
24	2.1	0	0	0	0	2.8	0	7.1	12	0.00
25	4.6	1.9	0	0	0	5.2	0	2.3	14	0.00

2025 Finished Water Trends (TDS & Sulfates):

The table below shows the average monthly concentration values of total dissolved solids and sulfate by each month in 2024 and 2025.

2024	TDS	Sulfate
January	568	373
February	611	385
March	642	404
April	670	418
May	617	354
June	662	396
July	660	395
August	650	380
September	626	344
October	616	349
November	568	303
December	533	245
Average	619	362

2025	TDS	Sulfate
January	546	274
February	567	284
March	589	419
April	594	365
May	614	450
June	621	387
July	583	329
August	552	246
September	611	266
October	581	251
November	648	261
December	588	276
Average	591	317

The variations shown month to month are attributed to varying well combinations. Generally, TDS and sulfate concentrations will trend together.

A.C. WARD DIAGRAM OF TREATMENT PLANT FLOW

See following attachment for treatment plant flow diagram.

Link to PDF

WATER SUPPLY
- shallow wells (50')
- deep wells (2,500')

AERATION
- removes iron and manganese

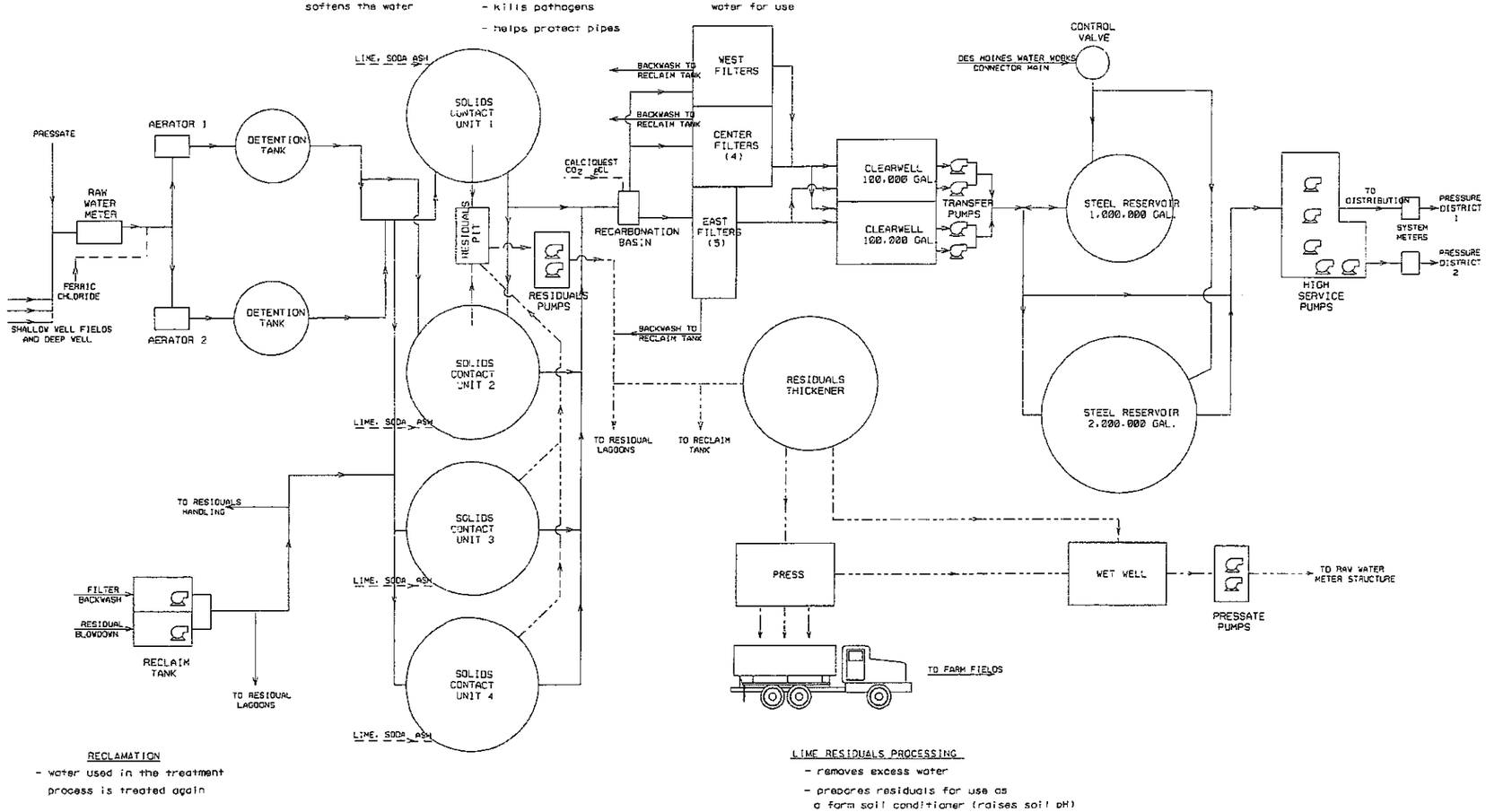
COAGULATION, SEDIMENTATION AND SOFTENING
- removes particles and softens the water

RECARBONATION, DISINFECTION AND SEDIMENTATION
- lowers the pH of the water
- kills pathogens
- helps protect pipes

FILTRATION
- removes fine particles
- finishes preparing the water for use

DRINKING WATER STORAGE
- stores water until needed by the community

HIGH SERVICE PUMPING
- sends water to the distribution system



RECLAMATION
- water used in the treatment process is treated again

LIME RESIDUALS PROCESSING
- removes excess water
- prepares residuals for use as a farm soil conditioner (raises soil pH)

A.C. WARD MUNICIPAL WATER TREATMENT PLANT TREATMENT PROCESSES AND FLOW DIAGRAM