



**CAPITAL REGION™**

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**WATER**

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# **Request For Proposals**

Professional Services for  
Geographic Information System and  
Computerized Maintenance Management  
System Platform Support

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October 6, 2023

### 1. Introduction

Capital Region Water (CRW) is requesting proposals for professional consultant services from qualified firms for the further development, expansion, and support of the Geographic Information System (GIS – ESRI) and the Computerized Maintenance Management System (CMMS – Cityworks). While the term proposal is used interchangeably with qualifications package, the materials requested of respondents are of a more general nature consistent with qualifications. Detailed scope and fee proposals will be required of selected firms once assignments are issued following this procurement. The final selection of firms will be quality-based.

### 2. Schedule for Proposal Process

RFP Issued	October 6, 2023
Questions/Clarification Requests Due to CRW	October 20, 2023, at 2:00 PM EDT
Addenda Issued (if necessary)	October 27, 2023
Proposals Due	December 1 by 2:00 PM EST
Interviews (reserve this time now)	December 18 – 20 2023
Selection and Award	January 2, 2024 / January 24, 2024 (Meeting)

### 3. General Information and Background

CRW is a financially independent municipal authority that owns and operates the municipal utility systems, including drinking water, wastewater (sanitary and combined) and stormwater, that serve the City of Harrisburg and surrounding communities. A significant portion of these systems were constructed over 100 years ago, and infrastructure needs are consistent with expectations for a system of this age. Drinking water originates from DeHart Reservoir, which is surrounded by 8,200 acres of forested land and travels 23 miles to the Water Services Center where it is treated and pumped into the distribution system. The whole service area has over 22,000 water service connections serving approximately 60,000 residents. After consumption, the wastewater flows into the collection system of which approximately 80 percent of Harrisburg drains into a combined sewer system, while the remaining 20 percent is a separate sanitary system, MS4. Wastewater from the City and neighboring boroughs and townships is treated at the Advanced Wastewater Treatment Facility (AWTF), one of the largest treatment facilities in the region.

#### Drinking Water System

- 15-MGD Surface Water Appropriation (Clarks Creek and Susquehanna River)
- 6-BG Raw Water Reservoir
- 20-MGD Conventional Filtration Facility
- One (1) 28-MG and Two (2) 6-MG Finished Water Storage Reservoirs (40-MG total)
- 225-mi Distribution Network
- 25-mi Raw Water Transmission Network
- One (1) Raw Water Intake Pump Station.

### Combined Wastewater System

- 45-MGD Advanced Wastewater Treatment Facility (BNR Upgrade Complete 2/2016) Two Major Wastewater Pumping Stations
- 13-mi. Combined Interceptors (59 Permitted Combined Sewer Overflow sites) 135-mi. Collection System
- 3,200+ Manholes
- 3,800+Inlets/Catch Basins
- Separate Storm Sewer System (MS4):
- Estimated 20 percent of City 80 percent Combined)
- Limited Data on Separate Storm.

Respondents can find and are encouraged to review more detailed information on CRW's website:  
<https://capitalregionwater.com/>

### Asset Management Support Systems

Beginning in 2013, Capital Region Water implemented key elements in support of developing a sustainable asset management strategy to address the growing challenges of aging infrastructure. Sustainable asset management is a compliance priority in the detail that CRW is party to a Modified Consent Decree with the United States Department of Justice (DOJ), the U.S. Environmental Protection Agency (EPA) and the Pennsylvania Department of Environmental Protection (PADEP) to address wet weather compliance issues. That document established a compliance schedule for the development of a Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP) Update and associated work. Investment in effective data and information technology solutions set the foundation.

Esri GIS was implemented as the system of record to host core asset inventory records, manage, maintain, analyze, and model all system assets. Currently, CRW utilizes the ESRI ArcGIS Enterprise (10.9) platform along with SQL Server (2019) to manage its GIS. ArcGIS Online (AGOL) is also used for hosting web apps for public display. GIS is utilized to push map services and versioned data for consumption by Cityworks, ESRI Collector and our Portal and AGOL accounts. In 2022, the water data was incorporated into a modified version of the ESRI Utility Network. CRW's sanitary and storm system data is currently data sets and feature classes grouped into a second RDBMS.

CRW launched Cityworks, computerized maintenance management system (CMMS) in 2015, initiating digital tracking of work activities, routine inspections, and service requests for linear assets and in 2019 deployed for vertical assets. As of 2023 Cityworks server versioning is at 15.8.3. The 170 active users include CRW employees (field, plant, and office), consultants, contractors as well as contracted third-party users performing operations and maintenance on CRW systems. The current implementation has four domains:

- Distribution and Collections buried (linear) assets.
- Water Treatment process (vertical)
- Wastewater Treatment process (vertical)
- Administrative Building (vertical)

### Project Highlights

CRW's Cityworks implementation has leveraged Single Sign-On integrated with ArcGIS Portal since Spring of 2022. Users can sign-in with organizational email and password credentials with MFA to keep operational data secure and in compliance with organization IT and ArcGIS secure service best practices.

Starting in 2023 CRW makes use of Standard TV Inspection process for CCTV surveys, leveraging PACP codes in CRW's on-premises modeling software to inform capital planning and rehabilitation activities for the collection system with risk-based approach.

## 4. Proposal Specifications

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### Scope of Work

CRW may select just one or multiple firms, as solely determined by CRW. Should CRW retain more than one firm, the intension will be to distribute assignments relatively evenly over the term of the engagement, but all parties shall agree by participating in this solicitation that practical realities may conspire against such an "equitable" distribution. CRW also reserves the right to make assignment decisions in order to serve the best interests of customers whether that be value of work, delivery schedule, etc.

### GIS Program Support

Seeking innovative, highly qualified vendors with data and technology expertise to provide GIS Program Support. Work to include conducting gap analysis and collaboratively develop a 5-year roadmap to enhance our geographic information system (GIS) capabilities.

#### Work Details

##### GIS Program Support

- Provide ongoing GIS program support and maintenance to ensure the stability and functionality of our existing GIS infrastructure.
- Offer technical assistance to end-users, troubleshoot issues, and provide guidance on best practices in GIS.
- Assist in establishing, documenting, and performing integration of new data sources, software, and technologies into our GIS environment.

##### GIS Gap Analysis

- Perform a comprehensive assessment of our current GIS capabilities, including hardware, software, data quality and personnel skills.
- Identify program gaps and deficiencies.
- Evaluate the alignment of our GIS program with organizational goals and industry best practices.
- Review and implement recommendations and proposed solutions to address identified gaps.

### GIS Roadmap Creation

- Develop a strategic, five (5) year roadmap that aligns GIS with our organizational objectives and addresses the identified gaps.
- Provide a detailed project plan and timeline for implementing the recommended solutions.
- Define key milestones, deliverables, and performance metrics to track progress.
- Identify potential risks and mitigation strategies.

### CMMS Program Support

Professional support to develop, expand and mature the existing implementation of Cityworks AMS in following areas: platform support, dashboard development, platform automations integrations and interfacing with other CRW systems where feasible and provides value to utility stakeholders; and a Roadmap for transitioning to Cityworks Respond platform.

#### **Work Details**

##### Platform Support

- Conduct gap analysis and assessment of current Cityworks implementation identifying areas for improvement and further development.
- Collaborate with Cityworks Administrator and IT each spring in planning and executing annual server upgrades with minimal disruption to service.
- Development of multi-media training materials to potentially include onboarding video series.
- Leverage Cityworks OpX for newly revised processes in support of Capital Improvement Project work activity tracking.
- On-Call support for questions and advice during non-typical conditions for troubleshooting errors or outages
- Ad hoc development requests including, but not limited to Crystal Report templates, process flow documents and complex or advanced SQL queries.

##### Performance Management

- Development of PowerBI dashboards utilizing live data connections for operational and maintenance based Key Performance Indicators (KPIs) sourced from Capital Region Water's Strategic and Tactical Asset Management Plans.
- Display ready products for internal and external publishing benchmark performance as part of standard industry metrics.
- Automations in PowerBI to run/refresh dashboards on a regular interval to point out to a resource folder running dashboard display screens throughout the organization.
- Continued support in maintaining and monitoring dashboards so to remain relevant to Capital Region Water's strategic mission and Key Performance Indicators.

### Automations and Integrations

- Take results from the Asset Management Integrations and Interfaces Assessment Task and provide a plan for executing Cityworks recommendations.
- Collaborate and complete development for Outlook Calendar integration leveraging Microsoft PowerAutomate and Cityworks Action Manager to display work orders as Outlook Calendar events.

### Roadmap for Cityworks Respond Implementation

- Analysis of the requirements for transitioning from Cityworks Office to Cityworks Respond.
- Development of a detailed roadmap including a phased approach, timeline, and resource requirements for a full implementation following best practices and processes outlined through Asset Management Program Collaboration and support in executing the resulting roadmap and recommendations.
- User acceptance testing, documentation, and training programs for a smooth transition.

## 5. General Provisions

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### **Addenda**

Any necessary additions or corrections to this RFP will be made by addenda and issued to all proposers of record. Addenda become part of the RFP and must be acknowledged by each proposer; failure to acknowledge any addenda shall not relieve proposers of compliance with the terms thereof. CRW assumes no responsibility for oral instructions.

### **Economy of Preparation**

Proposals should be prepared simply and economically, providing a straightforward, concise description of the proposer's ability to satisfy the requirements of this RFP.

### **Incurred Expenses**

Proposers are responsible for proposal preparation and submission costs, as well as travel costs incurred in connection with oral presentations if required or other pre-award discussions or activities.

### **Contractor Responsibilities; Subcontractors**

CRW will enter into a contract with the selected proposer, and that proposer shall be responsible for all products and services required by the RFP. Subcontractors, if any, must be approved by CRW prior to engagement, after review of a complete description of their role relative to the proposer.

### **Disadvantaged Business Enterprise Participation**

CRW is committed to assisting in the development of M/W/DBE enterprises to compete successfully in the marketplace outside of CRW's existing program. By responding to this RFP, the proposer agrees to adopt CRW's M/W/DBE policy at the time of each work engagement. The proposer will take all necessary steps to ensure maximum participation with a M/W/DBE participation expectation of 15 percent.

### **Conflicts of Interest**

The proposer shall identify any actual or potential conflicts of interest that exist, or which may arise if the proposer is recommended for award and propose how such conflicts might be resolved.

### **Acceptance Time**

By submitting a proposal under this solicitation, the proposer agrees that CRW has within 90 days after the due date in order to accept the proposal. CRW reserves the right to reject, as unacceptable, any proposal that specifies less than 90 days of acceptance time. Upon mutual agreement between the CRW and the proposer, the acceptance time for the proposal may be extended.

### **Billing and Payment**

The successful proposer shall keep accurate, document records of time, material, and transportation allocable to this contract. Payment will be made on a monthly basis, and related records will be available for audit purposes during normal business hours, as often as deemed necessary. Payment will only be made for work that has first been previously authorized with CRW approval.

### **Applicable Standards/Guidelines**

The Consultant is required to perform all services in accordance with generally accepted standards of professional practice, in accordance with CRW Design Guidelines, and in accordance with all applicable Federal, State, and local codes in effect at the time of these services.

## **6. Submittal Requirements for Qualifications**

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Interested firms shall submit a proposal package highlighting specific experience and resources that qualify them to deliver the services required by CRW. Firms are encouraged to creatively convey their statement of qualifications, but all packages must address the following requirements within the noted page limitations. Again, if qualified, firms may submit separate proposal packages for consideration for each of the system software packages.

### **Vision/Understanding** (limit to 2 pages)

Provide a brief understanding of CRW's needs with an explanation of why the respondent's firm is better equipped to address those needs than their competitors are.

### **Experience and Qualifications** (limit to 10 pages)

Describe firm's experience and qualifications providing similar services as required by this RFP. Information should include:

- Brief history and description of the firm.
- At least three (3) relevant projects with descriptions and reference information.
- Any additional information which would serve to distinguish the project team from other firms submitting proposals such as any special expertise or experience of the firm, etc.

### **Project Team** (limit to 3 pages)

- Provide a specific organizational chart identifying all team members and summarizing their roles for the project.
- Project Management – The Consultant shall identify their designated project manager who will serve as the day-to-day point of contact with CRW. Briefly describe how the project manager will lead the project and identify which of the representative experience projects were managed by the proposed project manager. Prior experience successfully executing similar projects is required.
- Project Team Resumes – Submit a 1-page resume for key project team members in an appendix.

**Note:** If selected, the consultant may not change the staffing assigned to the project without approval by CRW. However, approval will not be denied if the staff replacement is determined by CRW to be of equal ability or experience to the predecessor. CRW may consider changes in key staff as cause to limit assignments.

### **Reference Letters**

Provide three (3) reference letters from clients who received services similar in scope to the requirements of this RFP.

### **Billing Rates**

Provide a fee schedule of hourly rates for all personnel identified as part of the project team. Also provide an expected distribution of time (by percentage) that each personnel class will contribute to the work.

### **Additional Documentation (Appendices) – no page limit**

Provide additional information to demonstrate unique qualifications including examples of work for other clients, staff resumes, etc.

### **M/W/DBE Participation**

Provide a brief history of past collaboration with M/W/DBE's and how you would plan engagement opportunities similar in scope to the requirements of this RFP. Document efforts to identify and engage MWDBE subconsultant support using CRW Business Diversity Program forms.

[Business Diversity Program - Capital Region Water\) - link](#)

## **7. Submission of Qualification and Proposals**

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- Proposals must be received by **2:00 pm on December 1, 2023**.
- The subject line of the submittal email shall include the respondent's name (firm/company) and "GIS/CMMS RFP." The body of the email shall contain the full title of the RFP, name of respondent and point of contact including name, phone, email address. Please note that CRW has an email attachment size limit of 50MB.
- If CRW wishes to conduct interviews, selected firms will be notified by December 13, 2023. Interested firms should prepare to participate in interviews December 18 – 20, 2023.



Submit one (1) electronic copy of the information requested. The electronic copy shall be a PDF file type and 8.5"x11" format. The electronic copy is to be submitted via email to [Thomas.York@capitalregionwater.com](mailto:Thomas.York@capitalregionwater.com)

## 8. Selection Criteria

Evaluation and selection of proposals will be based on content and responsiveness to all proposal requirements. CRW reserves the right to require any firm to submit additional information deemed necessary in evaluating the proposals. It is estimated that the assignment will be awarded at the January 24, 2024, CRW Board of Directors meeting.

### Scoring

Upon receipt of the Proposals, CRW will score the technical aspects of the prospective Consultant project team based upon the following criteria:

Technical Information	Weight
Vision/Understanding	20
Experience/Qualifications	20
Project Team/Project Management	20
Understanding of Local Issues	10
Overall Proposal Quality	10
Rate Schedule	10
M/W/DBE Participation	10

### Interview

After the review of the proposals, CRW may conduct one-hour interviews (30-min presentation, 30 min question/answer period) with firms, if necessary, to make final decisions prior to recommending award to CRW's Board.

## 9. General Terms

- CRW reserves the right to reject any or all proposals and to select the proposal(s) that it determines to be in the best interest of CRW.
- The contract is subject to the approval of CRW's Board of Directors and is effective only upon their approval.
- Proposals will remain effective for CRW review and approval for 90 days from the submission deadline.
- The proposer is encouraged to add to, modify or clarify any scope of work items it deems appropriate to develop a high-quality proposal that delivers the greatest value to CRW. All changes shall be explicitly listed and explained. However, the scope of work proposed must accomplish the goals and work stated in the RFP.

## 10. Additional Resources

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[GeoHUB](#)

[Strategic Asset Management Plan](#)

[Asset Management Roadmap](#)

## General

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This Addendum shall be made part of the Request for Proposals (RFP) dated October 6, 2023, for the CRW Geographic Information System and Computerized Maintenance Management System Platform Support Request for Proposal. Where any part of the RFP is modified by this Addendum, the unaltered information shall remain in effect.

## Responses to Questions and Requests for Clarification

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1. Can you provide more information about the specific modifications made to the Esri Utility Network for your GIS data?

***Modifications of the ESRI Utility Network (UN) for water includes the following: Not all Domain Feature Classes were created/utilized, no Structure Feature Classes were created/utilized, and no Inspection Tables were created/utilized. Additionally, not all choices for attribute domains were included.***

2. What were the primary reasons for modifying the Esri Utility Network for GIS data management, and what benefits have you observed as a result?

***Our water data consisted of several disparate datasets grouped into one large geodatabase. The water UN was modified based on the recommendation of the consultant working on the task. This modification is considered an interim step leading us in the direction of a full UN implementation. The only benefit from the modifications is a less complex database.***

3. Have you encountered any challenges or limitations with the modified Esri Utility Network in managing your GIS data?

***The issues encountered mainly dealt with the fact that the desktop version of Cityworks (Office) does not support subtypes within the UN.***

4. How do you ensure data quality and accuracy when managing water data within the modified Esri Utility Network?

***Currently, we do not have a process in place. However, we are currently working with Data Reviewer to verify the quality of our data. Future plans include setting up attribute rules through ArcPRO.***

5. Esri has separate water, wastewater, and stormwater utility network models. Can you confirm that the modified Utility Network model has one model for water and one combined with wastewater and storm or are you modelling all three in one model?

***Our water data is the only dataset that has been migrated to the Utility Network. For now, our sewer and storm data reside in their original disparate database. Future plans include migrating our sewer and storm data to their respective Utility Networks.***

6. Has the modified Utility Network model been fully enabled so that it is traceable? If so, have subnetworks been enabled? What percentage of the data is fully traceable?

***The modified UN has not been fully enabled. Subnetworks also were not enabled. In 2018, a geometric network was created, and the water data imported. At that time, the data was traceable.***

7. Is there any additional structure data such as casings or pipe support that will be part of the modified Utility Network model?

***At this time, there are no plans for adding additional structure data. However, this could change if the value is substantiated.***