



EXHIBIT A

PROJECT DESCRIPTION

WEB ACCESS SYSTEM FOR FLOOD STUDIES CONDUCTED
IN THE CARSON RIVER WATERSHED

1. GENERAL DESCRIPTION

This project announcement is looking for an engineering firm to develop of a Web Access System (WAS) for the Carson Water Subconservancy District (CWSD) for the various LOMRs, Area Drainage Master Plans (ADMP), flood mitigation studies that have been conducted over the past six years. The selected professional engineering firm agrees to provide services to accomplish the work under the direction of a Registered Engineer within the State of Nevada in the appropriate discipline.

This contract will be considered a “not to exceed – lump sum contract.” The work performed in this contract is intended primarily to be through development and completion of individual work assignments, tasks, and specified deliverables. The selected consultant will work with the Carson Water Subconservancy District and representatives from the counties in the Carson River Watershed to develop a more detailed scope prior to entering into a professional services contract.

1.1 Background

Since 2005, CWSD has been coordinating several flood studies utilizing funding from FEMA Cooperating Technical Partners (CTP) program. During this period several LOMRs, Area Drainage Master Plans (ADMP), flood mitigation studies have been completed.

Under prior work efforts, series of 2-dimensional hydrologic and hydraulic models have been developed for large portions of CWSD’s jurisdiction. The spatial and tabular output from these models is useful in helping to inform stakeholders, including members of the public and CWSD stakeholder agencies, in development practices as well as identifying and mitigating flood hazards. Due to the volume and complexity of data produces by these models, an interactive medium is well-suited to facilitate communication and dissemination of model data.

1.2 Project Purpose & Need

The primary purpose of the WAS is to enable counties staff, developers, and engineering firms the ability to utilize the hydrologic and hydraulic models already been developed for several drainages in the Carson River Watershed.

1.3 Contract Schedule

Release of the RFQ:	October 6, 2020
Statements of Qualifications Due:	November 4, 2020
Select Consultant for Consideration:	November 20, 2020
Approval of Scope of Work and Contract:	January 20, 2021

2. PROJECT SERVICES AND TASKS

Once an engineering firm has been selected, a detailed scope of work shall be prepared by the consultant in consultation with CWSD and representatives from the counties in the watershed. It is anticipated that the scope of work will include the following but may be modified based on meeting with CWSD and the counties:

TASK 1.0 PROJECT MANAGEMENT

1.1 **Project Manager.** The selected consultant will name the Project Manager who will be the official point of contact between the Client Team and the Consultant Team for all issues related to the project.

1.2 **Project Coordination Meetings.** The Consultant Team will participate in monthly project coordination meetings with the Client Team via teleconference and WebEx meetings if necessary.

1.3 **Invoicing.** The consultant will invoice the Carson Water Subconservancy District monthly with a percent complete estimate for each task. The invoice will include a brief progress report per task.

TASK 2.0 DEVELOP SYSTEM ARCHITECTURE AND IMPLEMENTATION PLAN

2.1 The Consultant will coordinate with CWSD and county representatives in the Carson River Watershed to develop a system architecture and implementation plan. This plan will form the backbone for the implementation of the individual elements in subsequent tasks. Due to multiple possible implementation strategies, not every element may be required in the final implementation plan. Elements to be addressed in the plan include:

- System Configuration
 - Network
 - Domain Registration, if necessary
 - SSL Certificate Purchase/Installation
 - Hardware
 - On-Premise vs. Cloud
 - Network Infrastructure Needs
 - Software
 - Identify software needs
 - Identify Software Costs and Licensing
 - Assess ArcGIS Online suitability
 - GIS
 - Study/Model Hierarchy (cross-indexed with Website)
 - Model Data Symbology and levels of detail
 - Anticipated Geoprocessing Tools (cross-indexed with Website)
 - Hydrograph-By-Line
 - Feature Hydrograph

- Water Surface Elevation By Line
- Map Print to PDF
- o Website
 - User Access Levels
 - Study/Model Hierarchy (cross-indexed with GIS)
 - Anticipated Geoprocessing Tools (cross-indexed with GIS)
 - Associated Widgets
 - Develop Web App Builder Application
- System Hosting Options
 - o On-Premise vs. Cloud
 - Procedures
 - o Initial Publishing
 - o Updating
 - o Maintenance

TASK 3.0 HARDWARE AND SOFTWARE PURCHASE AND INSTALLATION

3.1 Hardware Acquisition and Setup

The Consultant will assist CWSD and counties in the Watershed in selecting a physical server for system, as necessary. As an alternative to a physical server, a cloud-based server may be selected for use. Funds for hardware purchase and/or cloud-based server use are not included in this scope/fee and will vary depending upon the needs identified by CWSD and counties. This scope assumes use of a single physical/cloud server for web hosting, ArcGIS Enterprise installation, and file storage. The web host may be CWSD or one of the other counties in the Watershed.

3.2 Network Infrastructure Coordination

The Consultant will coordinate, as needed, to implement a physical server or cloud solution with CWSD's or County's existing network infrastructure. This task may require coordination with other CWSD or County vendors or consultants to implement necessary firewall rules or network configuration.

3.3 Software Purchase

The Consultant will coordinate with CWSD to purchase appropriate software and software licenses for the WAS, as necessary.

TASK 4.0 SYSTEM SOFTWARE/SITE DEVELOPMENT

4.1 ArcGIS Enterprise Installation

The Consultant will install ArcGIS Enterprise software on the physical/cloud-based server procured per Task 3.1. ArcGIS Enterprise installation will include installation of ArcGIS Server and the ArcGIS Server Web Adapter and ArcGIS Portal; use of Microsoft Internet Information Systems is assumed (this is a free feature in Windows systems).

4.2 Develop Model Symbology and Layers

The Consultant will develop a standard set of symbologies and layers for model map services. Template ArcGIS map documents will be developed for use by two classes of users: technical users and public users. The technical user map documents will include a greater range of model input and output variables for review by technical users, such as engineers and agency technical staff.

4.3 Generate Model Spatial Data

The consultant will post-process CWSD's currently finalized LOMR's, flood mitigation studies, and ADMP's to generate spatial data for use in the published maps. This post-processing will use the Flood Control District of Maricopa County's Command Line Tools to generate spatial and tabular data.

4.4 Geoprocessing Service Publishing

The Consultant will publish geoprocessing services for hydrograph-by-line and water-surface-elevation-by-line functions to the ArcGIS Server instance configured in Task 4.1.

4.5 ArcGIS Server Publishing

The Consultant will publish map services to ArcGIS Server installed per Task 4.1 or to ArcGIS Online, as necessary. These map services will consist of ADMP FLO-2D model data processed per Task 4.3 and symbolized in ArcGIS maps per Task 4.2.

4.6 Website Configuration

The Consultant will configure a website on the server procured per Task 3.1. The viewing system will incorporate ArcGIS Server map services published in Task 4.4. Installation of an Secure Socket Layer (SSL) certificate for the website may be included.

4.7 Web App Builder Site Development

The Consultant will develop an ESRI Web App Builder site, or similar, to view ADMP- and model-level data on the website configured in Task 4.6. Two Web App Builder sites will be configured, one for members of the general public and one for technical users. These sites will utilize map services based upon the ArcGIS map documents developed in Task 4.2. The technical user site will include the custom geoprocessing services published in Task 4.4.

Task 5.0 System Documentation and Roll-Out

5.1 System Documentation

The Consultant will prepare a user's manual and administration manual. Topics to be covered in the user's manual include, basic site features, geoprocessing features, and how to print from the site. The administration manual will include elements such as site management protocols and credentials as well as procedures for adding or updating individual models or studies.

5.2 Response to Testing

The Consultant will make adjustments to site aesthetics based upon stakeholder feedback and concurrence from CWSD. This task is intended to aid in ease of use of the site and does not include modifications to geoprocessing services, model symbology, or published map services.

5.3 Training

The Consultant will provide training to appropriate staff at CWSD and counties on how to utilize this web access system. This task is intended to aid in ease of use of the site and does not include modifications to geoprocessing services, model symbology, or published map services.

Task 6.0 As-Needed Support

The Consultant will provide as-needed support for the site on a time-and-materials not-to-exceed basis for 1-year. This support can be renewed annually to provide for site maintenance, troubleshooting, and addition of additional models, as they are developed in the future.