



**REQUEST FOR QUALIFICATIONS FOR
DAYTON VALLEY AREA DRAINAGE MASTER PLAN**

**Statement of Qualifications due Friday, November 3, 2017 at 12:00
PM (Pacific Time)**

To the Carson Water Subconservancy District Office

777 E. William Street, #110A

Carson City, NV 89701

775-887-7450

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Statement of Qualification Contents

The Carson Water Subconservancy District (CWSD) is soliciting Statement of Qualifications (SOQ) from qualified firms to provide services for the Dayton Valley Area Drainage Master Plan (ADMP).

The contract period is expected to be completed by July 31, 2019.

The Dayton Valley ADMP project area is located in portions of Lyon County and Storey County. The total area within the Lyon County and Storey County (Lyon County and Storey County Master Plan) is approximately 52 square miles (see attached maps). The primary goal of the ADMP is to reconstruct historic drainage patterns, identify current drainage patterns and flood hazards. This will require development of new hydrologic and two dimensional hydraulic models (FLO-2D or Army Corps of Engineer's HEC-RAS 5.X). The critical portion of the ADMP is to identify drainage deficiencies within the ADMP area and recommend improvements in the drainage network to provide for 25-year 24-hour storm water conveyance. The ADMP will develop a prioritized list of infrastructure and improvements to provide flood protection to the citizens of and an estimated cost of these improvements. The study will also assess infrastructure needs to protect the citizens from a 100-year peak runoff event. Storey County and Lyon County are participating with USGS to collect LIDAR data in this area. This data will be available Spring 2018. In addition, the USACE is conducting an alluvial fan study which will be available by the end of 2017.

SECTION I – SCOPE OF SERVICES

A general scope of work is attached as Exhibit A. The selected consultant will work with the Carson Water Subconservancy District and Lyon County and Storey County staff and consultants to develop a more detailed scope prior to entering into a professional services contract.

SECTION II -SOLICITATION SCHEDULE

The last date for questions and/or requests for clarifications to the SOQ is Thursday, October 26, 2017 at 5:00 PM (Pacific Time), and shall be submitted in writing or email to:

Name: Edwin James

Title: General Manager

Email: edjames@cwsd.org

Phone: 775-887-7456

Fax: 775-782-7450

Statements of Qualifications are due on Friday, November 3, 2017 at 12:00 PM (Pacific time) to the Carson Water Subconservancy District Offices. An Evaluation Committee will evaluate each SOQ according to the Evaluation Criteria in Section III.

SECTION III – STATEMENT OF QUALIFICATIONS SELECTION CRITERIA

The consultant will be selected through a qualifications-based selection process. Firms interested in this project must submit a Statement of Qualifications (SOQ) that addresses the following issues:

Firm's Experience on Similar Projects (0-35 points)

Identify at least two comparable projects (projects for watershed master planning should be comparable. Simple floodplain mapping is not considered comparable) within the last five years in which the project team has completed of this type or comparable projects. For each comparable project identified, provide the following information: (Note: if the project selected is the same as one selected in response to Section above, provide just the project name and the role of the key person.)

1. Description of project, including similarities with respect to the technical analysis and the public and stakeholder involvement aspects for this project.
2. Role of the firm (as a Prime or Sub-consultant)
3. Project's original contracted cost & time and final project cost & time with explanation for any variances.
4. Firm's partnering efforts and successes
5. Include an executive summary from one of the previously completed area drainage master plans. The executive summary shall not count toward the total page count.

Personnel Availability & Experience (0-20 points)

1. For each key person identified to work on this study, list at least two comparable projects in which they have played a primary role in the studies. Please provide the following information:
 - a. Description of project
 - b. Key individual's role on the project
 - c. Project's original contracted cost & time and final project cost & time with explanation for any variances
 - d. Project Owner reference information (two names with telephone numbers per project)
2. List the current availability of key prime firm personnel for the proposed project time frame and their length of time with the firm.
3. List the names, experience and qualifications of any sub-consultants which you are proposing for this project. Describe how the services and experience of proposed sub-consultants will benefit this project including how and where they will work with the prime firm.
4. Provide a project organizational chart showing key prime firm personnel and all sub-consultants.
5. Resumes for key personnel may be attached in accordance with the submittal requirements.
6. List the person(s) and describe experience and name specific projects using FLO-2D (or other similar two-dimensional hydraulic software models) software for hydrologic and hydraulic modeling.

7. For the prime consultant Project Manager, describe your experience in addressing complex stakeholder issues, such as how or if conflicting goals or objectives were resolved, as well as any experience presenting potential contentious issues to the public.

Project Understanding and Approach (0-35 points)

1. Discuss the major issues your team has identified on this project and how you intend to address those issues.
2. Describe your team's project management approach and team organization for planning, managing, scheduling, budgeting, and quality control for this project.
3. Provide an outline showing how many work assignments you anticipate are needed for this project, the major tasks involved with each work assignment, and the anticipated duration for each work assignment that will meet the project's goals and schedule.
4. Explain your approach on how to integrate the flow between multiple interdependent hydrologic and hydraulic models.
5. Explain your approach on model verification.

SECTION IV -SUBMITTAL REQUIREMENTS

Interested Firms should submit a Statement of Qualifications which includes a one-page (1) cover letter plus a maximum of fifteen (15) additional pages to address the SOQ criteria. Resumes, project organizational chart, and executive summary of previously completed ADMP are not counted in the page count and should be attached as an appendix to the SOQ. Resumes for each key team member shall be limited to a maximum length of two pages. Adherence to the maximum page criterion is critical; each page side (maximum 8 1/2" x 11") with criteria information will be counted. Pages that have project photos, charts, and graphs will be counted towards the maximum number of pages. Tab dividers are optional and are not counted in page length. We will allow 8 1/2" x 14" size page for your Organizational Chart.

Provide five (5) printed copies and (1) digital copy of the Statement of Qualifications by Friday, November 3, 2017 at

12:00 PM (Pacific time).

Submittals must be delivered to the:

Carson Water Subconservancy District

777 E. William Street, Suite 110A

Carson City, NV 89701

On the submittal package display: firm name, contact information, and project title

Failure to comply with the following criteria may be grounds for disqualification.

SECTION V – GENERAL INFORMATION

Selection and Negotiations. CWSD will enter into negotiations with the selected firm and execute a contract upon completion of negotiation of fees and contract terms for CWSD Board approval. If CWSD is unsuccessful in negotiating a contract with the best-qualified firm, CWSD may then negotiate with the second or third most qualified firm until a contract is executed, or may decide to terminate the selection process.

Instructions. CWSD and Lyon County and Storey County shall not be held responsible for any oral instructions. Any changes to this Request for Qualifications will be in the form of an addendum, which will be furnished to all registered Request for Qualifications holders.

CWSD Rights. CWSD reserves the right to reject any or all Statements of Qualifications, to waive any informality or irregularity in any Statement of Qualifications received, and shall be the sole judge of the merits of the respective Statements of Qualifications received. CWSD also reserves the right on any publicly advertised selection process to decide whether to select a firm based on the Statements of Qualifications received or whether to hold interviews with the firms CWSD deems best qualified for the project.

Confidentiality. All information submitted by firms and related Evaluation Committee evaluations/rankings shall be considered confidential until after contract execution/award by the Governing Board. Requests for debriefings or to review Statements of Qualifications submitted, shall be made in writing to Edwin James, General Manager Carson Water Subconservancy District.

Questions. Questions pertaining to the selection process or contract issues should be directed to:

Edwin James, General Manager Carson Water Subconservancy District Email:
edjames@cwsd.org Phone: 775-887-7456 FAX: 775-887-7457

SECTION VI – ATTACHMENTS

EXHIBIT A –Scope of Work

[Map 1 Approximate Watershed Area](#)

[Map 2 Approximate Detail Study Area](#)

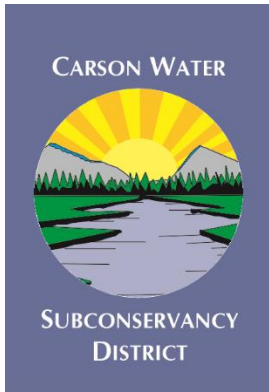


EXHIBIT A

GENERAL SCOPE OF WORK

DAYTON VALLEY AREA DRAINAGE MASTER PLAN

1. GENERAL DESCRIPTION

This scope of work (SOW) is to provide a general overview of services being requested for the Dayton Valley Area Drainage Master Plan (ADMP). 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 Lyon County and Storey County staff and their engineer to develop a more detailed scope prior to entering into a professional services contract.

1.1 Background

Over the last several years, the residential and commercial areas of the Dayton Valley have experienced several floods. During the summers of 2014, 2015, and 2016, these areas experienced flash flooding, and in 2017, the area received considerable damage from severe winter flooding. In February, the federal government issued a Disaster Declaration for these areas. The Nevada Division of Emergency Management (NDEM) is currently conducting a damage assessment to determine the number of properties that were damaged and what the total cost to private homeowners will be. Damage to public infrastructure in the Carson River Watershed portions of Lyon County and Storey County has been preliminarily estimated to be over \$5 million.

Historically, the Dayton Valley area has experienced these types of flood damaging events every 10 years, but recently they have been occurring more often. The citizens of both Lyon and Storey Counties are overwhelmed with these costs; therefore, the counties need to develop flood control alternatives. The counties have requested that an Area Drainage Master Plan (ADMP) be developed for this area. The project area will include the Mark Twain Area and the Dayton Valley Area north of the Carson River. This will be a first significant step necessary to begin to solve the storm water problems that plague these counties.

The ADMP will identify drainage patterns and undersized infrastructure, as well as potential locations and sizes of detention basins, channels, and levees that would be necessary to reduce the flood risk. The ADMP would produce a preliminary cost estimate for these improvements and allow the counties to budget for and prioritize flood control projects.

1.2 Project Purpose & Need

The primary purpose of the Dayton Valley ADMP is to identify the flooding hazards based on existing conditions and provide a prioritized list of projects that will allow the drainage facilities to function to each County's current Standards. This will be accomplished by technical evaluation and data collection using various methods and sources such as hydrologic and two-dimensional hydraulic modeling, field surveys, reviewing previous studies and meeting with each County's Planning Department and other state and federal agencies. The study may include some low cost, immediate projects that could reduce flooding in the area.

The results of the ADMP will be used to prioritize additional actions needed to help existing property owners and development. The results can also be used to guide the future development and help plan drainage infrastructure and flood mitigation measures that are appropriate for the physical and natural environment for both existing and future development.

The primary goals of the Dayton Valley ADMP are:

- Identify and characterize historic drainage patterns.
- Identify and characterize the existing and potential flooding hazards in the study area based on current conditions.
- Assess the risks of the flood hazards and categorize the flood hazards for mitigation consideration.
- Prioritize and provide estimated costs for infrastructure improvements to provide flood protection to the properties within the ADMP geographic boundaries.

1.3 Study Area

The community of Dayton Valley is primarily an area consisting of a mixture of individual custom-built homes and pre-designed production homes, and it is assumed this pattern of development will continue. Mark Twain in Storey County is a residential community of mobile and manufactured homes intermixed with site-built structures. The community and its outlying areas encompass most of the gently sloped alluvial areas at the base of the Flowery Range. Non-residential uses in Mark Twain include a community center and public park located at the Mark Twain Estates subdivision and the Basalite basalt quarry mine located approximately two miles northeast of the estate subdivision. The remaining land in Mark Twain is mostly undeveloped. Storey County has designated the existing Mark Twain Estates to continue this growth pattern until build-out. New residential development outside of the Mark Twain Estates subdivision will be limited to rural uses such as one residence per twenty acres, as well as light industrial uses.

The majority of the valley is high desert scrubland with sparse vegetation. The Carson River flows through the project area in an easterly direction and there is limited farmland within its floodplain. The valley is defined by large alluvial fans that slope towards the river. Surrounding the area are steep sloped mountains with peak elevations ranging between 6,000 feet to 7,000 feet. The attached maps define the limits of the project area which is east of Old Town Dayton, north of the Carson River, and includes the community of Mark Twain to the north. The majority of the valley is within Lyon County; however, the community of Mark Twain and the

surrounding mountains that define the drainage basin are in Storey County. The entire drainage basin is approximately 52 square miles and the Dayton Valley community is approximately 10 square miles.

The predominant existing land uses in the Dayton Valley community are rural and suburban residential, private range, and public open space. Approximately half of the valley is devoted to residential use, with 50% of this land characterized by lots between one-half to one acre in size and the remaining residential areas being planned subdivisions. The only commercial developments are along US Highway 50. The remaining valley is open space that is either owned by the BLM or is privately owned range, agricultural or vacant lands.

1.4 Contract Schedule

Release of the RFQ:	October 6, 2017
Statements of Qualifications Due:	November 3, 2017
Select Consultant for Consideration:	November 17, 2017
Approval of Scope of Work and Contract:	January 17, 2018
Completion of ADMP Report:	July 31, 2019

1.5 Projects Standards and References

The following standards shall be the minimum guidelines used by the consultant:

- The Lyon County and Storey County Design Criteria and Improvement Standards.
- Truckee Meadows Structural Controls Design and Low Impact Development Manual.
- Nevada Revised Statute (NRS) and Nevada Administrative Code (NAC) 535.

Information that will be provided by CWSD, Lyon County, and Storey County:

- USACE Alluvial Fan Study for the Carson River Watershed
- 2017 USGS LiDAR Q1 resolution data for the study area which will be available in the spring of 2018.

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, Lyon County, and Storey County staff and their engineer. After the consultant has been selected, but prior to developing a scope and fee, the consultant shall participate in an all-day scoping meeting. The scoping meeting will include a field trip to the Dayton Valley Area. An additional day will include discussions with the County Public Works Department, Road Operations and Maintenance. It is anticipated that the scope of work will include the following:

2.1 Project Management and Administration

2.1.1 - Develop and update project progress reports, project schedules, and flow charts which meet FEMA's earned value parameters for schedule and cost.

2.1.2 –Submit monthly invoices and progress reports.

2.2 Project Coordination

2.2.1 Coordination with the Carson Water Subconservancy District (CWSD), Lyon County, and Storey County.

2.2.2 - Participate in a minimum of four additional public meetings including:

- Public meeting with the residents of Dayton Valley and Storey County
- A CWSD Board Meeting
- A Lyon County Board of County Commissioner's Meeting
- A Storey County Board of County Commissioner's Meeting

2.3 Data Collection, Review, and Analysis

2.3.1 - Collect, organize, and review the existing data, reports, plans, and records that affect the study area, such as:

- Hydrologic and hydraulic studies and models and other items listed in Section 1.5.
- Historical aerial photographs.
- Lyon County Master Plan and Storey County Master Plan (2016).
- Photographs documenting flooding, erosion, or debris and sediment flow from County Departments and County Residents.

2.3.2 - Obtain necessary topographic and survey data to produce the ADMP. Utilizing the 2017 USGS LIDAR data.

- Field survey (rim and invert elevations) all County owned drainage structures (culverts, storm drain, catch basins, etc.)

2.3.3 - Identify all historic and current flow split locations, which may include the following tasks:

- Review historic aerial photographs to identify flow splits that existed prior to development of parcels and roadway networks.
- Review current aerial photography and topography to identify any current flow splits.
- Classify all flow split locations depending on their characteristics based on the local geomorphology, site visits, and geologic mapping to determine whether the flow splits are stable distributary flow paths, minor locations of uncertain flow distribution, or major locations of uncertain flow path and flow distribution.

- If locations of major uncertain flow paths and flow distributions are identified, additional analyses may be necessary to establish the most appropriate downstream discharges and the most appropriate analysis technique.

2.3.4 - Document the findings and results of the data collection and analysis.

2.4 Hydrologic and Hydraulic Modeling

2.4.1 It is anticipated that two dimensional hydraulic models will be constructed to show:

- Historic drainage patterns
- Current drainage patterns
 - For the 25-year 24-hour design storm
 - For the 100-year peak runoff event

The purpose of the modeling is to use the results to help identify and quantify:

- Deviations from the historic drainage patterns
- Identify deficiencies in the current drainage network during the 25-year 24-hour storm event.
- Identify deficiencies in the current drainage network to safely contain the 100-year peak runoff event.

2.5 Flood Hazard Identification and Prioritization of Mitigation

One of the key end products of this study is to identify and quantify the flood hazards throughout the study area using the modeling results, data collection, previous studies, public and stakeholder involvement, and other evaluation results. Lyon County and Storey County will be able to use this information to determine if flood hazard mitigation solutions are feasible and the types of mitigation measures that are appropriate. Some of the tasks may include:

2.5.1 - Develop maps, tables, and other products or tools that characterize the existing flood hazards in the study area to convey information such as the type of flooding, the peak discharges, the flow depths and velocities, areas with high potential for sediment or debris flow, and the number of parcels subject to flooding.

2.5.2 - Document the results of the flood hazard assessment and the recommended next steps in a report. The report shall include a narrative description of each flood hazard and the approximate number of parcels impacted. The report shall also include a brief description of the potential flood control alternatives to mitigate each of the identified flood hazard.

- The consultant shall review the Truckee Meadows Low Impact Development Handbook to determine if potential to apply Low Impact Development exists.
- The consultant shall evaluate the opportunity for non-structural flood control solutions.

2.5.3 - The consultant shall evaluate and recommend a solution to mitigate flood hazards.

- The consultant shall prepare a priority list of projects to allow the drainage infrastructure to pass the 25-year 24-hour storm.
- Storey and Lyon Counties allowed driveway culverts to be installed at a minimum diameter of 12-inches. This has resulted in numerous undersized culverts installed within the County Right of Way. The consultant shall work with the Counties to identify key streets within the ADMP area that have this undersized culvert issue and recommend an appropriate diameter to allow the driveway culverts to pass the 25-year 24-hour storm.
- The consultant shall prepare a priority list of projects to allow the drainage infrastructure to pass the 100-year peak runoff event. The consultant should recommend if the peak runoff event is based on volume or peak flows.
- Cost estimates shall be provided for all proposed projects
- Prepare a conceptual design (15%) for all proposed drainage infrastructure. The conceptual design should have the approximate horizontal locations for all underground utilities.
- Proposed drainage improvements shall be located within County Right of Way, on County owned parcels, or on public land (BLM). Proposed solutions should not be located on private property which the County would have to obtain.
- Cost estimates for construction shall be provided for all proposed projects
- Life cycle costs for all capital projects shall be calculated

2.5.4 - Sedimentation Engineering Investigation and Analysis

The stormwater runoff from the BLM land contains a significant amount of sediment. Sedimentation loading analysis is considered a critical component to the ADMP. Tasks relating to sedimentation may include:

- Sediment yield analysis must be performed in the hydraulic model.
 - Maintenance cost estimates to remove sediment from proposed capital projects shall be provided.
3. The consultant shall evaluate options for roadside ditch stabilization techniques which would be compatible with roadside maintenance as it relates to sediment impacts to driveway culverts and roadside ditches.

4.

5. EXAMPLE AREA DRAINAGE MASTER PLANS

Examples of what the final executive summary should look like include:

- The Flood Control District of Maricopa County’s “Spook Hill Area Drainage Master Plan”
- Part 1: http://www.cwsd.org/wp-content/uploads/2017/10/1-22_-SpookHillAreaDrainageMasterPlan_LevelIIIAnalysis_ExecutiveSummary.pdf

- Part 2: http://www.cwsd.org/wp-content/uploads/2017/10/18-44SpookHillAreaDrainageMasterPlan_LevelIIIAAnalysis_ExecutiveSummary.pdf
Appendices: http://www.cwsd.org/wp-content/uploads/2017/10/Appendices_A420_222SpookHillAreaDrainageMasterPlan_LevelIIIAAnalysis_ExecutiveSummary.pdf

The Flood Control District of Maricopa County’s “East Mesa Area Drainage Master Plan”

http://www.cwsd.org/wp-content/uploads/2017/10/A442_601EastMesaAreaDrainageMasterPlan_RecommendedDesignReport.pdf

[Map 1 Approximate Watershed Area](#)

[Map 2 Approximate Detail Study Area](#)

