DRAFT SCOPE OF WORK OUTLINE
RECHARGE FEASIBILITY STUDY
Dated August 12, 2016

Introduction

Through hydrological, geological, hydrogeological, and geotechnical investigation the feasibility of an urban enhanced runoff recharge facility on locations identified in the Phase 1 Site Investigation on Coyote Wash (Bella Vista) will be assessed, with the goal of increasing baseflows in the San Pedro River to the maximum extent possible.

Project deliverables will include an identified location for a recharge project and a conceptual design, based on the analyses and field work. Further design tasks are not part of this scope of work; the following paragraphs discussing potential design focus areas are intended to guide this scope of work and development of future phases and budgets. If recharge proves to be feasible, budgeting for future phases will include 100% design and bid package deliverables.

Summary of Approach

The approach to recharge feasibility study will include decision points following each primary field task that may affect the type and/or extent of subsequent investigations due to the different recharge options being evaluated and their dependence on site-specific conditions. The goal is to maintain flexibility in the approach to ensure a cost-effective program for obtaining sufficient and critical data to evaluate feasibility of potential recharge methods to meet the project's recharge goals, while acknowledging that significant departure from scope could have substantial effects on cost and schedule.

Scope of Work Outline

The tasks listed below are the proposed elements to this draft scope of work. Exact tasks and deliverables achievable with available budget will be determined at time of SOW finalization.

Task 1: Project Management

A Consultant shall:

- Identify a project manager responsible for managing the budget, schedule, and deliverables throughout the project, including the management of budget, schedule, and deliverables of any Sub consultants, as well as report directly to the County's project manager;
- Identify all Sub consultants who will be involved in the project;
- Participate in and/or lead as appropriate all monthly conference calls/meetings;

- Suggest modification of project scope details, including phasing, critical path items and decision points, as the project progresses;
- Suggest modifications to clarify and prioritize recharge goals/approaches;
- Suggest additional milestones leading to ensure achievement of project goals; and
- Assign roles and communication system for Consultant and Sub-consultant project team members.

Task 2: Data Collection and Evaluation

Data collection and evaluation of existing documentation appropriate to the project and related to other aquifer recharge efforts, and build upon the 'living document' prepared during previous work on Riverstone and Bella Vista site investigations by adding documents and references to that bibliography as appropriate. The Contractor shall finalize the Bibliography with additional data and documentation appropriate to the project, and finalize the updated bibliography during the final task.

Task 3. Conduct Deeper Subsurface Recharge Feasibility Study

The Contractor shall conduct deeper subsurface geologic, hydrogeological, and geotechnical site characterizations at locations identified in Phase I. Resulting data will include engineering soil descriptions, graphic logs, cross sections, and contoured geophysical survey results.

Task 4. Install Shallow Monitor Wells

Install a minimum of three to a maximum of five shallow (exact depth to be determined) monitoring wells at each property in a method and at locations based upon previous study findings. Three monitoring wells are the minimum number capable of determining groundwater flow direction and gradient. Also, conduct aquifer pumping tests for determining transmissivity of the alluvial or shallow regional aquifer (depending on aquifer that is present below the site).

Task 5. Coordination Meeting to Present Deeper Subsurface Feasibility Study Results and Recommendations for Additional Field Investigations/Tasks

A visual presentation summarizing the results of the Detailed Feasibility Study and recommendations for the additional field investigations if necessary.

Task 6. Perform additional tasks. Cost to be negotiated if required.

The Contractor shall perform additional tasks as determined in Task 5 if needed to refine recharge methods and locations.

Task 7. Preparation of Draft and Final Conceptual Recharge Facility Technical Memorandum

A draft and final Technical Memoranda that summarizes and analyzes recharge feasibility results. Conceptual designs (10% level designs, maximum 2 locations/facilities) shown on letter-size sheets will also be developed, including engineering calculations on facility sizing and resulting impacts to flood flow/low-flow conditions and elevations. The results from any associated groundwater modeling efforts will also be included. The Project Team will present its recommendations to the Cochise Conservation and Recharge Network Leadership Team for conceptual design review and approval. This report shall recommend recharge facilities for Coyote Wash (Bella Vista) including recharge method(s), locations, and source water quantities according to the conceptual designs of potential future facilities. The Consultant shall also review the Revised Regulatory Review Report (Mulhern, 2014) and identify the state, federal and local requirements for the conceptual designs.

Schedule

The Contractor shall work closely with the County's project manager to develop a schedule for review and approval by the Project Team within 10 days of contract award.