INTRODUCTION

The Sustainable Groundwater Management Act ("SGMA") delineated groundwater basins and subbasins in California and charged local agencies with managing groundwater for long-term sustainability. The Santa Ynez River Valley Groundwater Basin ("Basin") comprises three groundwater sustainability agencies ("GSAs") representing three management areas: the Western Management Area ("WMA"), Central Management Area ("CMA"), and Eastern Management Area ("EMA"). Through a coordination agreement, the three GSAs are cooperatively implementing their Groundwater Sustainability Plans ("GSPs") to manage groundwater in the Basin. Increased stormwater runoff control and infiltration for groundwater recharge is a management action identified in all three of the GSPs.

In the Basin, the likely approach for infiltration and recharge will utilize either infiltration basins or dry wells, depending on the depth to groundwater and subsurface geologic conditions.

> Infiltration basins consists of an earthen basin constructed in naturally pervious soils with a flat bottom and an inlet structure to dissipate energy of incoming flow, and an emergency spillway to control excess flows. Infiltration basins retain stormwater and allow it to percolate into the underlying soils. Infiltration basins can increase groundwater recharge and help remove pollutants from stormwater.[1]
>
> Dry wells are a relatively straightforward design and a system commonly used in stormwater management. Stormwater drywells have a variety of designs and may be referred to by other names including stormwater drainage wells, bored wells, and infiltration galleries.

The Santa Barbara County-Wide Integrated Stormwater Resource Plan (revised March 1, 2021) identified priority projects and provided conceptual plans for three (3) projects located in the Basin. One (1) is a high priority project located in the EMA (Hans Christian Andersen Park Infiltration Basin), one (1) is a medium priority project located in the WMA (County of Santa Barbara Vandenberg Village Infiltration Basin), and one (1) low priority project located in the CMA (Buellton Agricultural Runoff Infiltration Basin). Collectively, these three (3) projects provide control and infiltration of almost 100 acre-feet per year (AFY) of stormwater and dry weather runoff. As part of compliance activities related to their Small Municipal Stormwater Permit, the City of Lompoc has identified a potential project to capture and infiltrate stormwater runoff generated within the City most likely utilizing one (1) or more infiltration basins (City of Lompoc River Front Infiltration Basin). The general locations of these four (4) projects are shown in Figure 1, and when implemented can provide benefits to water quality, water supply, food management, environment, and the community. For example, the more than 100 AFY of combined recharge from these projects represents a significant contribution toward GSA efforts to increase groundwater recharge and maintain a sustainable water supply in the Basin.

SCOPE OF WORK

This study includes five (5) tasks designed to systematically provide outreach and engagement, characterize and confirm physical conditions at conceptual project sites, and select one (1) to three (3) of the projects to develop 30% design plans.

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[1] https://www.epa.gov/system/files/documents/2021-11/bmp-infiltration-basin.pdf

- **Task 1:** Project Management.
- **Task 2:** Outreach and Communications.
- **Task 3:** Inspection and Geotechnical Confirmation of Promising Projects.
- **Task 4:** 30% Project Design.
- **Task 5**: Project Summary Report.

The planned sites for focus in this study may be modified during implementation if outreach and engagement efforts or site confirmation data collected reveal unexpected conditions that constrain project feasibility. Under these conditions, alternative sites may be selected for confirmation and design activities.

Task 1: Project Management ($15,000)

Task 1 includes overall project management activities, including project budgets, schedule, staff assignments, contractor coordination and management, records management, and contract compliance. Tasks include accounting of expenditures of allocated funds, preparation of progress reports, invoices, and associated documentation, and as-needed communications with Santa Barbara County Grant Manager and Community Environmental Council.

Task 2: Community Outreach and Engagement ($50,000)

Task 2 will develop a brief Technical Memorandum that guides Stakeholder Communication and Engagement (SCE) during site investigation, selection, and design. The SCE TM will consider input from Santa Barbara County, Community Environmental Council, the three (3) Stakeholder Outreach and Engagement Plans of the GSAs from their GSPs, and the GSAs Community Advisory Groups. A key aspect of this plan is to identify the groups and community members to engage, the input needed from them, and a strategic plan for meetings and events to solicit their input relevant to the promising projects.

Task 3: Inspection and Geotechnical Confirmation ($130,000)

Task 3 of the water percolation feasibility study includes conducting soil and percolation studies and exploratory subsurface geophysical surveys at potential sites to confirm site suitability. For budgeting purposes, it is assumed that confirmation studies will be conducted at up to 3 sites, with the goal, if feasible, of exploring one (1) site in each GSA.

3.1 Percolation Studies

Percolation tests will be conducted at each potential site to quantify site specific percolation rates for sizing the infiltration basin. Percolation tests indicate how quickly water moves through soil and are used to evaluate the ability of the soil to absorb and percolate the water. Percolation tests generally involve digging at least three evenly spaced holes as deep as the proposed project, filling the holes with water until the soil becomes saturated, and measuring the percolation rate the day after the saturation process. The calculated field percolation rate will be utilized to confirm or refute site suitability and provide information for project design.[2]

[2] https://extensionpublications.unl.edu/assets/html/g1472/build/g1472.htm

3.2 Geophysical survey and soil core sampling

Spatial variations in subsurface soil conditions and their potential influence on the deep percolation of infiltration will be assessed with a detailed interpretation of subsurface conditions using geophysical survey results. A surface geophysical survey utilizing the Electrical Resistivity Profiling (ERP) or similar method and data post-processing to generate insight into the thickness, extent, and continuity of potential fine-grained layers at depth that can impede infiltration and reduce project effectiveness. This information is critical to making the decision on whether infiltration basins or dry wells are the most effective approach to directing the water for storage in the aquifer and design the project accordingly.

Task 4 : Preliminary Project Design ($100,000)

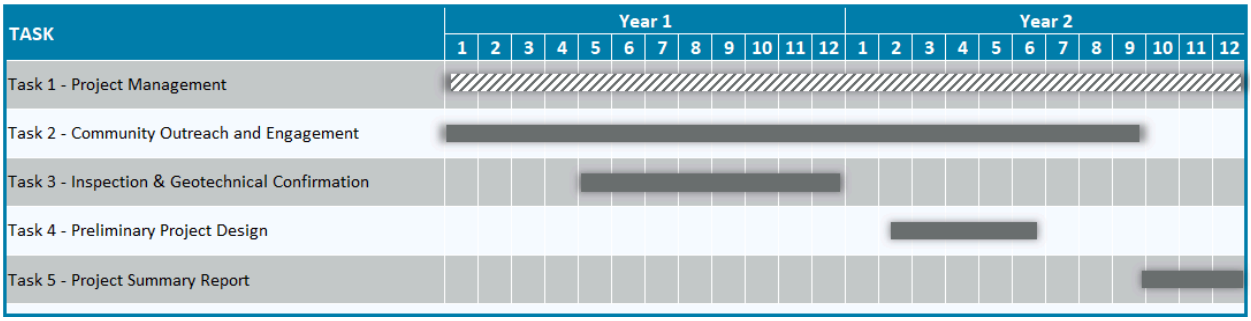
Prepare preliminary design of selected projects for the local agencies or GSAs to permit and build the projects more efficiently. Task 4 includes a field topographic survey of one (1) to two (3) project sites and preparation of 30% design plan layout sheets with a preliminary grading plan and a schematic of an assumed gravity diversion structure. A geotechnical report is not included in this task but is likely needed to assess earthwork requirements as required for subsequent detailed design submittals (60%/90%/100%).

Task 5 : Project Summary Report ($20,000)

A Technical Memorandum will be prepared to summarize project findings, provide the design plan layout sheets, and report and archive the data collected,

Schedule

Work will begin upon authorization. Task 1 Project Management spans over the entire project timeline and Tasks 2 through 5 have an expected duration of three to 21-months long.



Costs

The table below summarizes the expected budget for each task.

TASK	DESCRIPTION	COST
1	Project Management	$15,000
2	Outreach, and Engagement	$50,000
3	Inspection and Geotechnical Confirmation	$130,000
4	Preliminary Project Design(s)	$100,000
5	Project Summary Report	$20,000
	TOTAL	**$315,000**