

FOX CANYON GROUNDWATER MANAGEMENT AGENCY

800 S. Victoria Avenue | Ventura, CA 93009-1610 | Tel: (805) 654-2014 | FCGMA-GSP@ventura.org



Project Evaluation Checklist

BACKGROUND INFORMATION	
Project Name:	Seawater Intrusion Injection Barrier Feasibility Study
Purpose of Project:	Water Supply
Project Type:	Project Update
Sponsoring Agency:	Fox Canyon Groundwater Management Agency
Groundwater Basin:	Oxnard Subbasin
Location:	Saline Intrusion Management Area
Project Description:	Investigate installation of a network of injection wells to increase groundwater elevations at the coastline and reverse the landward migration of seawater.
Implementation Trigger (if applicable):	N/A
Evaluation Criteria	Response (Applicant to Complete)
Water Supply	
Annual increase in Sustainable Yield (AFY):	Unknown; anticipated to exceed 5,000 AFY
Annual increase in supplemental water in lieu of pumping (AFY):	N/A
Groundwater demand reduction (AFY):	N/A
Sustainability indicators addressed:	Seawater Intrusion
Project documentation included?	Yes
Timing/Feasibility	
Project Implementation Timeframe	
Current Project status:	Conceptual - no feasibility or design
Estimated time to Project completion (years):	May be operational by 2040 but uncertain.
Timeline / feasibility documentation included?	No
Environmental	
CEQA/NEPA type:	Both CEQA/NEPA
Status of CEQA/NEPA review and permitting:	Permit requirements not identified or unknown
Will the Project likely be permitted?	Yes
Sensitivity of location:	This will depend on the final design.
Permitting	
Permits required:	None required for feasibility study. Exact set of permits for the project has not yet been identified.
Status / time required:	Unknown; Permit timing anticipated to be 1 to 2 yrs.
Likelihood of Project being permitted:	Medium

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Project Complexity	
Does the Project use new technology:	No
Does the Project require land acquisition:	Yes
Status of the land acquisition process:	Required, not started and/or potential eminent domain
Is the Project dependent on other unbuilt or unfunded projects:	No
Is the Project dependent on funded projects currently under construction:	No
Description of Operation and Maintenance (if applicable):	Specifics of the operations and maintenance requirements have not yet been determined, but O&M will be required.
Project Lifespan	
What is the projected lifespan of the Project:	50 years
Project Phasing	
<i>Please provide documentation of anticipated project phasing, including schedules and costs (capital and O&M) for each phase, as an attachment to this form.</i>	
Does Project require multiple phases of construction?	Yes
No. of anticipated construction phases:	To Be Determined
Description of phases:	To Be Determined
Phasing timeline:	To Be Determined
Total cost per phase:	To Be Determined
Project phasing documentation attached?	No
Cost and Funding	
Total capital cost:	Feasibility Study \$200,000; Capital Cost > \$20,000,000
Total annual Operations & Maintenance (O&M) Cost:	To Be Determined
Is the project Proponent providing a funding match to construct the project?	To Be Determined
Is there a funding source other than FCGMA for ongoing operation and maintenance costs?	To Be Determined
Additional Benefits	
Does the project benefit disadvantaged or under-represented communities:	Yes
If yes, please describe the benefit(s):	Improves groundwater supply reliability in the Subbasin, which includes underrepresented communities.
Project Proponent Contact Information	Response (Applicant to Complete)
Name:	Kim Loeb
Title:	Groundwater Manager
Organization:	Fox Canyon Groundwater Management Agency
Email:	kim.loeb@ventura.org

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Project Evaluation Checklist

Phone:	805-650-4083
Date:	9/29/2023

Seawater Intrusion Injection Barrier Feasibility Study

Project Description

Seawater intrusion, which primarily occurs in the vicinity of Point Mugu and Port Hueneme, is the primary sustainability indicator that causes undesirable results in the Oxnard Subbasin. This project would investigate the feasibility of preventing seawater intrusion in these targeted areas of the Oxnard coastline through installation of a network of injection wells to increase groundwater elevations at the coastline and reverse the landward gradient in the lower aquifer system by creating a ridge of freshwater within the affected aquifers. Preliminary groundwater modelling suggests that in the lower aquifer system (LAS), installation of 5 to 10 injection wells landward of the eastern edge of the existing seawater intrusion front, injecting a total of 2,400 AFY, has the potential to eliminate any further inland migration of seawater in the Fox Canyon aquifer. This type of seawater barrier has been used, successfully, to prevent seawater intrusion in the West Coast Basin and the Orange County Groundwater Basin. Water supplied to the injection wells in these areas comes from a combination of advanced treated recycled water and imported water. Additional technical evaluation needs to be done to assess: (1) the feasibility of an injection barrier in the LAS, (2) the potential volume and sources of water available to inject, (3) the volume of injected water that would be recovered by inland wells, (4) the feasibility of implementing this project along with the seawater extraction barrier project proposed for the Point Mugu area, and (5) the infrastructure requirements, cost, and feasibility of constructing the project and delivering water to stakeholders west of injection barrier.

The goals of the feasibility study are:

- Use existing data and models to refine the understanding the volume of injection required to eliminate seawater intrusion in the Fox Canyon Aquifer
- Evaluate potential increase to the sustainable yield of the Oxnard Subbasin
- Evaluate potential water sources for the seawater intrusion barrier
- Determine preliminary capital cost assumptions (-30% to +50%)
- Determine preliminary O&M cost assumptions (-30% to +50%)
- Estimate cost per acre foot of increase in the sustainable yield (-30% to +50%)

Relationship to Sustainability Criteria

Relationship to Minimum Thresholds

The feasibility study does not directly impact the minimum thresholds in the Subbasin. The results from this feasibility study may inform future revisions to the minimum thresholds.

Relationship to Measurable Objectives

The feasibility study does not directly impact the measurable objectives in the Subbasin. The results from this feasibility study may inform future revisions to the measurable objectives.

Expected Benefits

The benefit of this project would be to understand whether a seawater injection barrier, in conjunction with other proposed projects, is feasible and would contribute to an increase in the sustainable yield of the Oxnard Subbasin.

Timetable for Implementation

The feasibility study can be completed within one year. Construction of an actual seawater intrusion injection barrier, if found to be feasible, may be completed by 2040.

Economic Factors and Funding Sources

The feasibility study would be funded by the Fox Canyon Groundwater Management Agency. The anticipated cost of the feasibility study is \$200,000. If found to be feasible, funding sources for the project would need to be identified. The infrastructure required to complete a seawater injection barrier is substantial. A replenishment fee implemented by the FCGMA Board could be a potential funding source. Grant funding would be sought to help offset local costs for this project.

Any action taken by the FCGMA Board, acting as the Groundwater Sustainability Agency for the portion of the Oxnard Subbasin in its jurisdiction, to impose or increase a fee shall be taken by ordinance or resolution. Should the FCGMA Board decide to fund a project through imposition of a replenishment fee, it will need to seek voter approval. This will generally require mailing written notice to the owner of each parcel on which the proposed fee will be imposed and conducting a public hearing at least 45 days after the notice.