

# Vina GSA Grant Groundwater Recharge Projects

**Component 4**  
**Lindo Channel Recharge Feasibility**

**Component 5**  
**Groundwater Recharge Identification and Analysis**



engineers | scientists | innovators

**March 25, 2025**

**SGM Grant Projects Panel Discussion**

# Overview – Questions for Successful Groundwater Recharge

Where in Subbasin can recharge water infiltrate?

Where will the recharge water go after infiltration?

Are there landowners that will support the project?

Where will the recharge water come from - source?

How will recharge water get to project area – conveyance?

What are the benefits of the recharge water?

Who can use the recharge water – legal?

What approvals are needed - permitting?

How much does the water cost?

## Groundwater Recharge Identification and Analysis

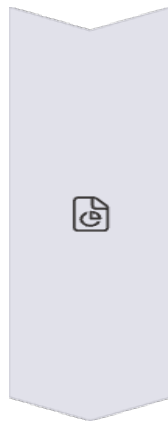
### Grant Component 5

# Recharge Project Identification Process



#### Initial Screening (7-10 Potential Sites)

- Verify consistency with Groundwater Sustainability Plan\Recharge Action Plan
- Review Airborne Electromagnetic (AEM) data and other information to assess recharge suitability
- Contact landowners and conduct initial site visits
- Gather additional relevant site information

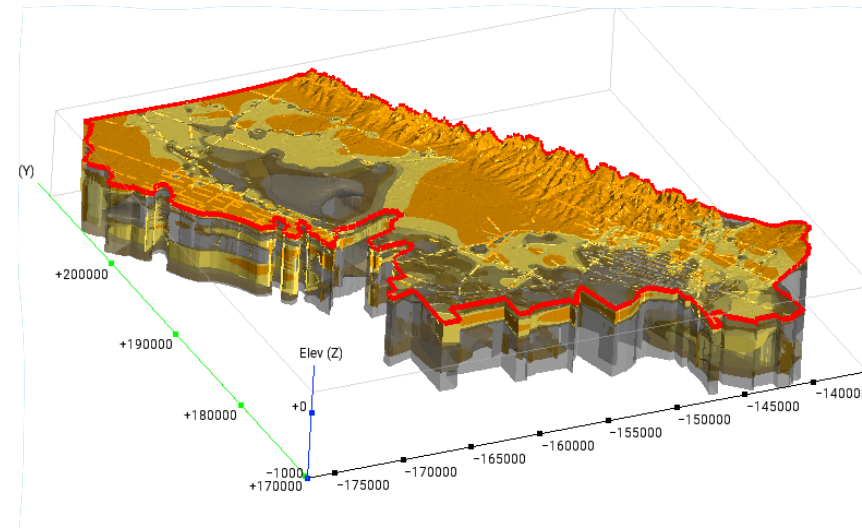
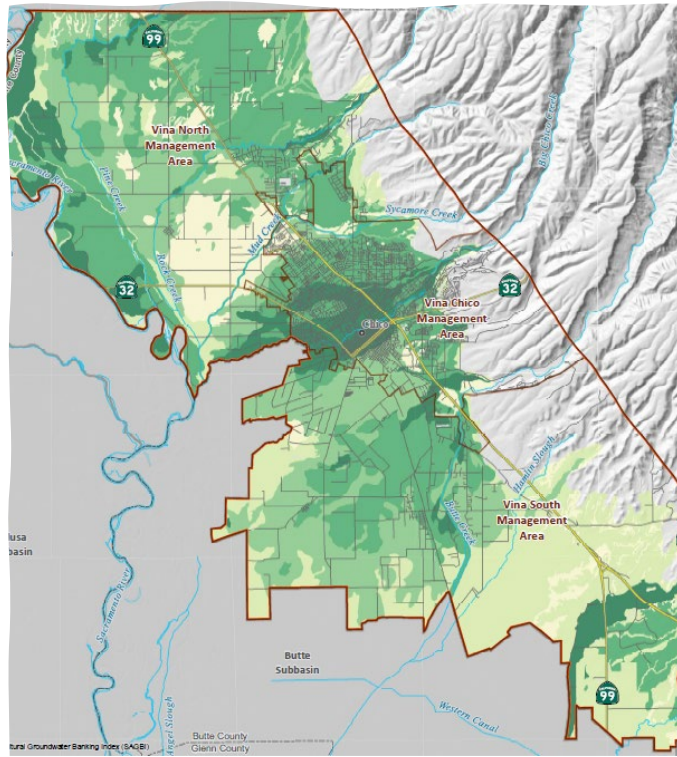
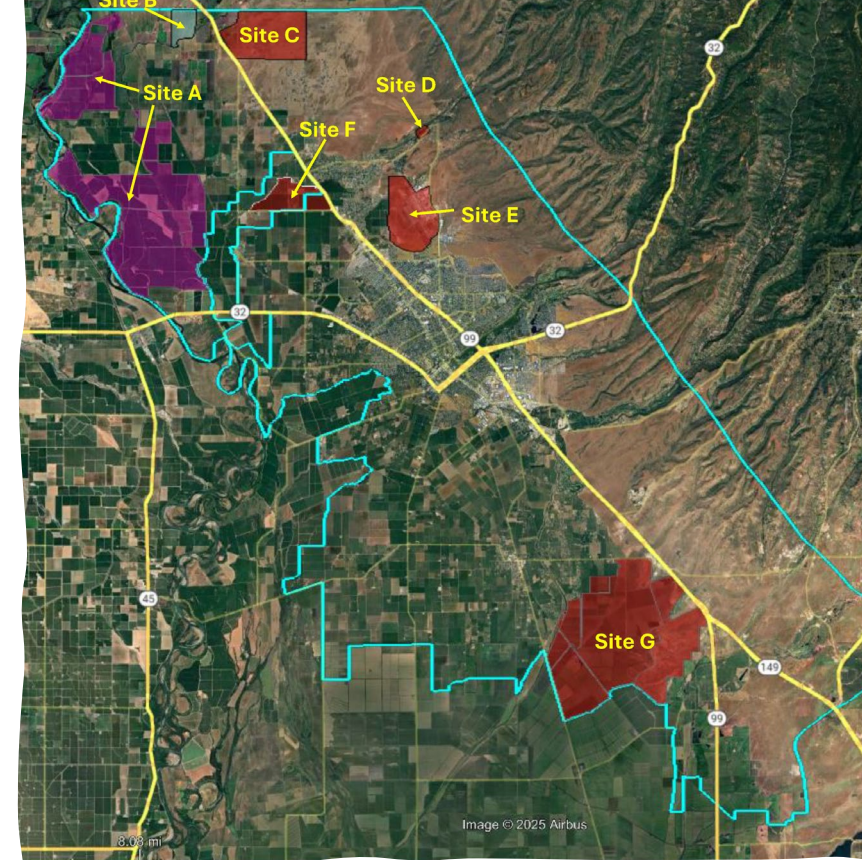
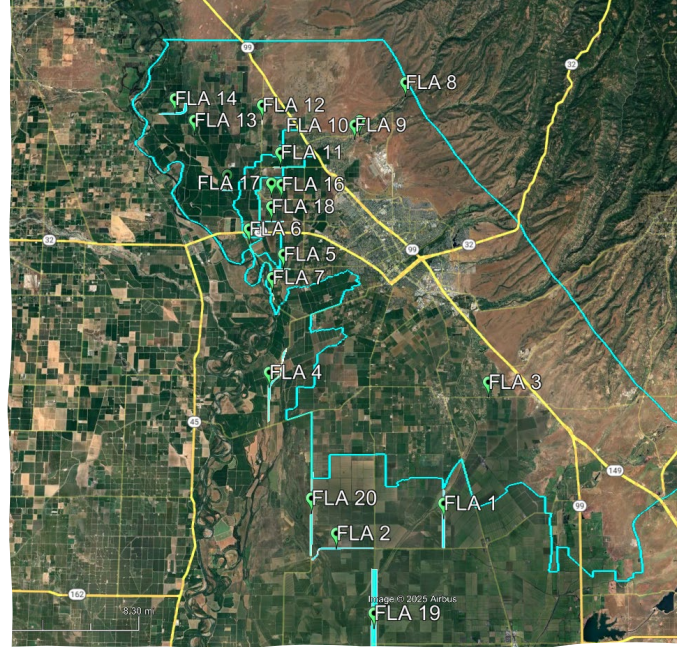


#### Feasibility-Level Analysis (Top 2 Sites)

- Identify water sources and access
- Evaluate conveyance methods and identify potential constraints
- Assess reliability and average recharge potential
- Conduct comprehensive cost-benefit analysis, including:
  - Project design costs
  - Construction expenses
  - Long-term operations and maintenance costs

# What has been done?

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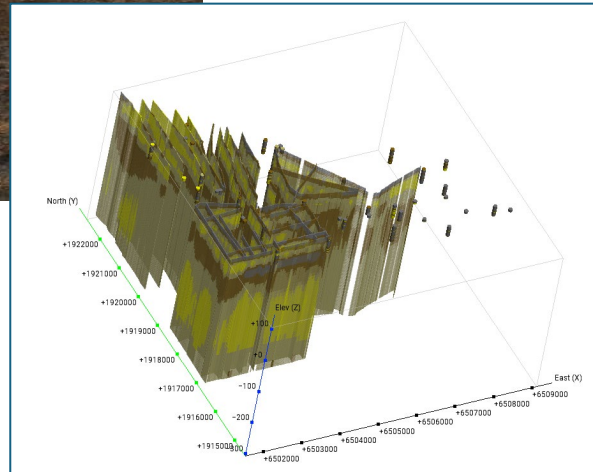


## Next Phase

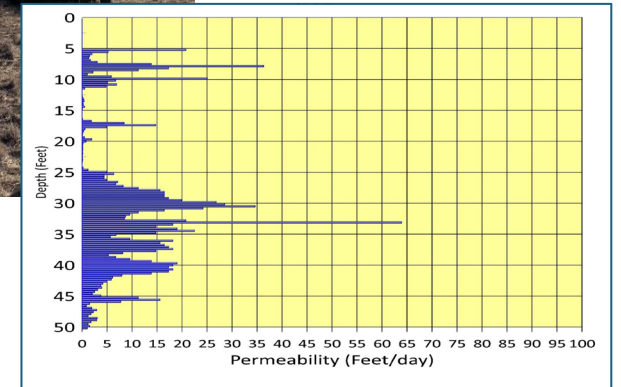
- Starting Feasibility Level Analysis for top 2 to 3 Sites.
- Analysis will Be Summarized in Technical Memorandum
- Field investigations will be conducted at top site(s) described in Technical Memorandum
- Pilot tests will be conducted at sites to begin learning how to conduct recharge in the Subbasin

# Types of field investigations

## tTEM – land application of AEM



## Cone penetrometer testing



Permeability profile in feet/day

## Other Activities

- Well Installation
- Physical and Chemical Testing of soil and water samples
- Down-hole permeability testing
- Water level monitoring

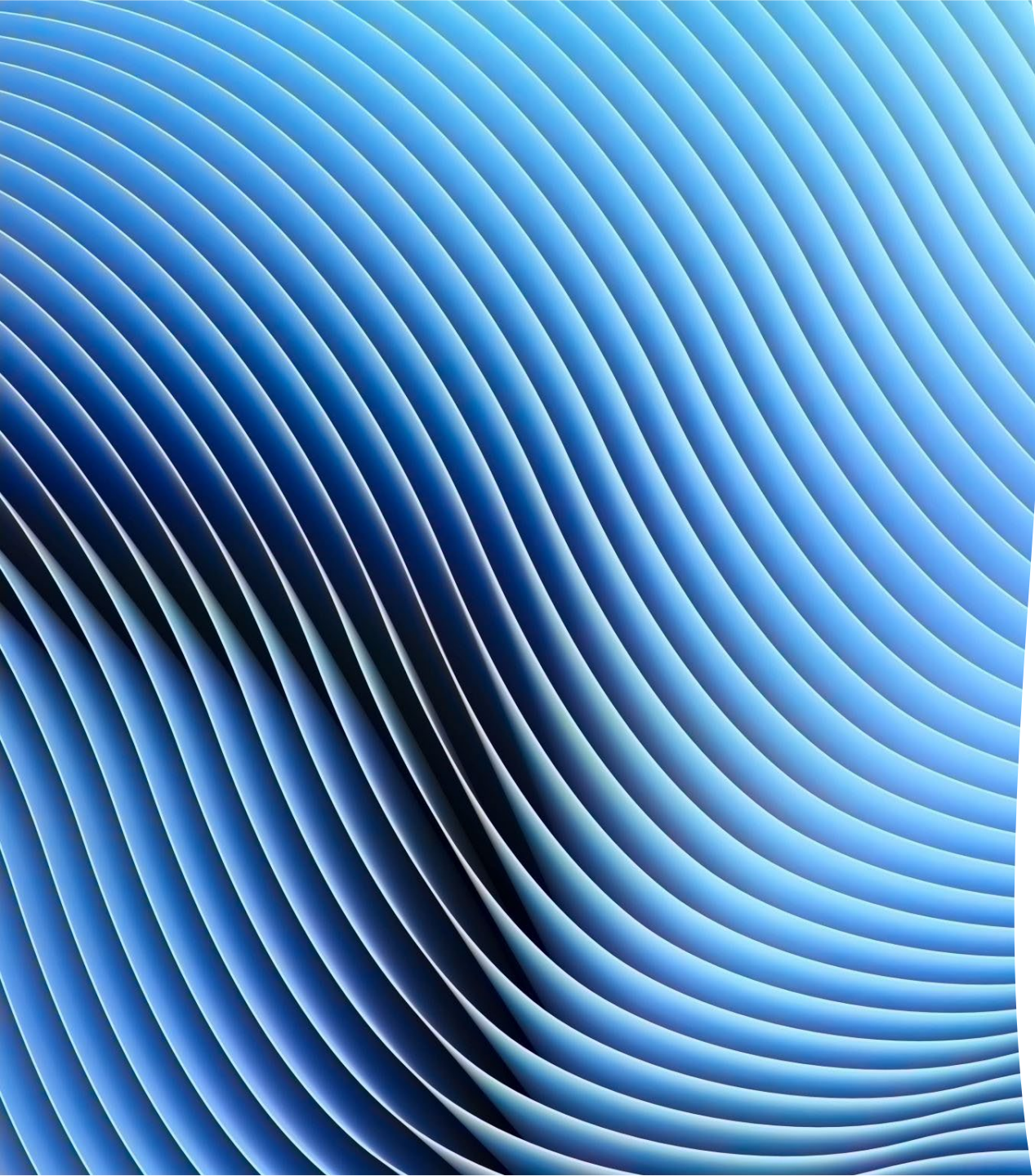
# Types of Pilot Tests



Small Basins

Managed Flooding





# Summary –Grant Component 5

## What will we learn?

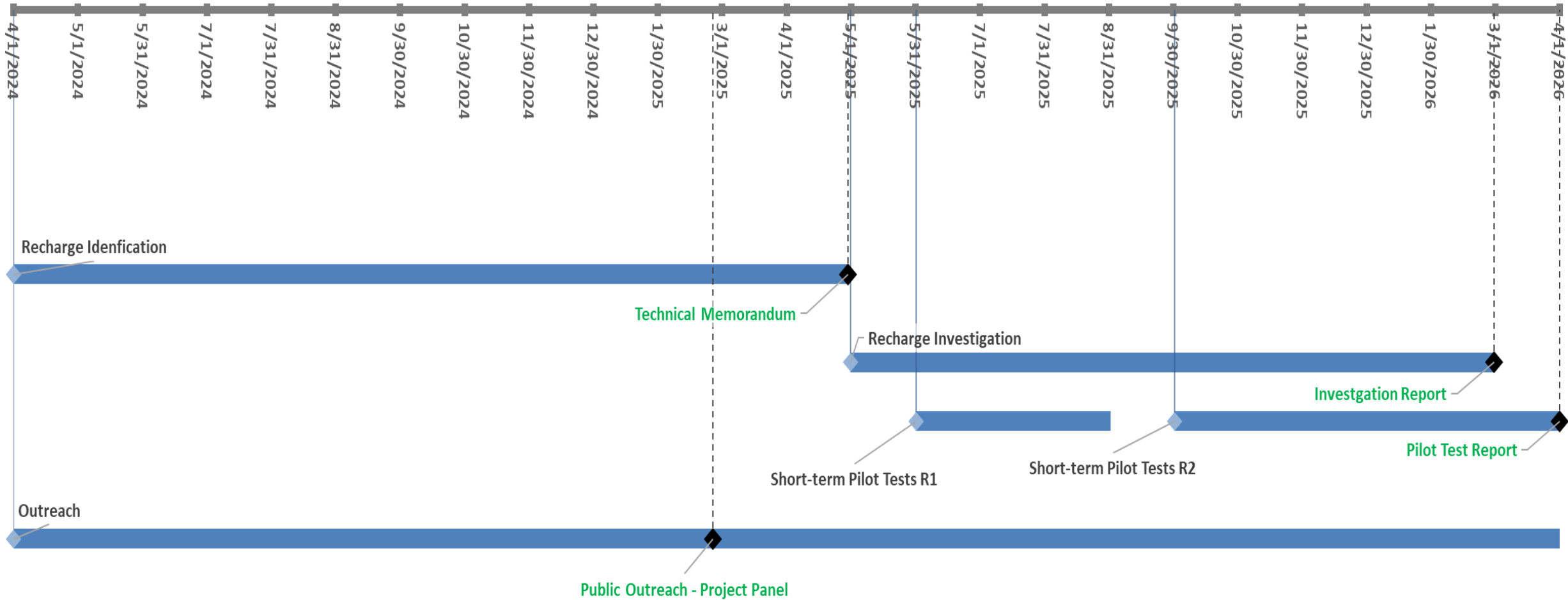
Where are the best areas in the Subbasin to conduct groundwater recharge.

Groundwater recharge performance potential

How to conduct groundwater recharge projects



# Schedule – Component 5 – Groundwater Recharge



# Lindo Channel Recharge Feasibility

## What will the project do?

### 1. Feasibility Analysis to:

- Assess how much water can be diverted to Lindo Channel and how much will recharge to groundwater
- Assess environmental and regulatory permitting needs.
- Evaluate if there are any improvements to infrastructure needed.
- Provide design of project to implement additional groundwater recharge in Lindo Channel.

### 2. Field Investigation and Data Collection

- Install monitoring equipment to assess groundwater recharge.

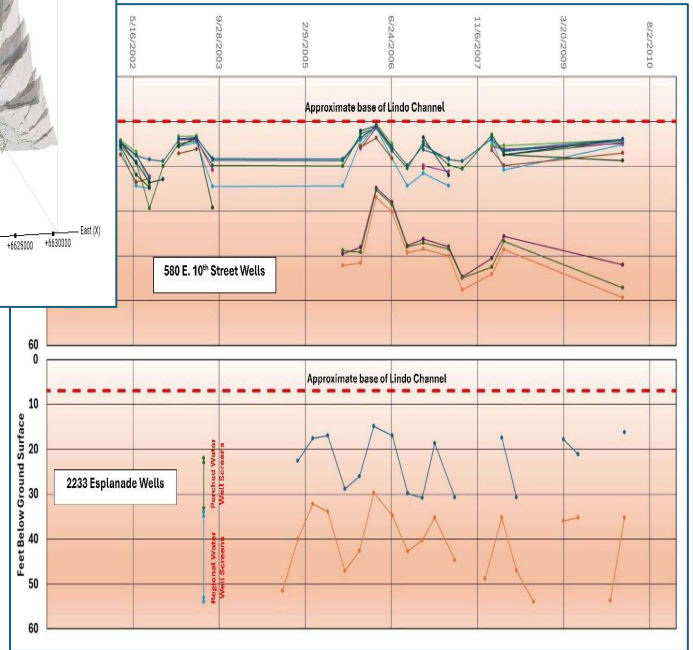
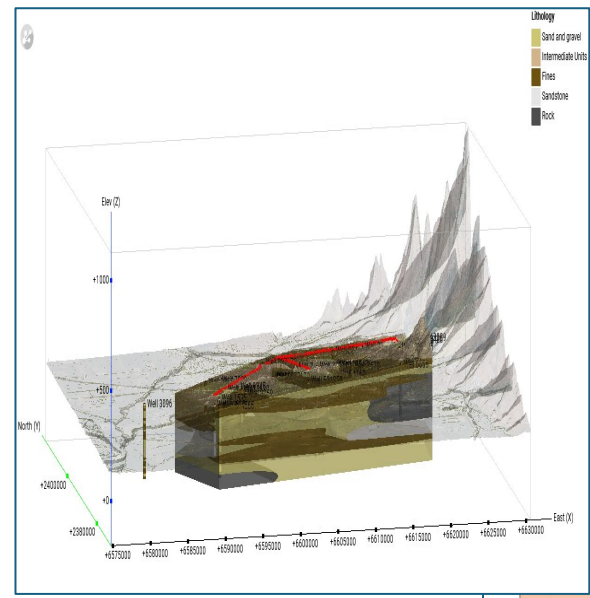
# What has been done?

## Component 4 – Lindo Channel



Field Testing

## Review Existing Data and Models



# Future Activities and Timeline



Stream Gauging



Well Installation

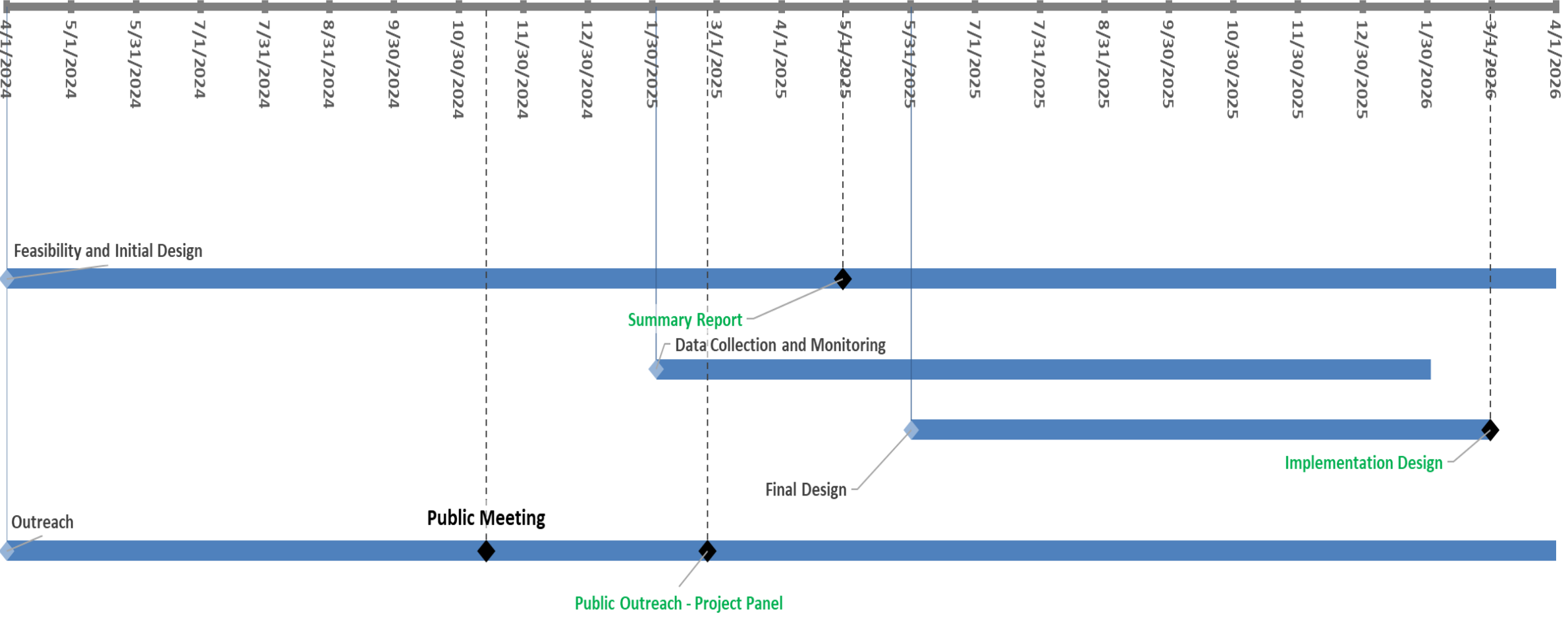


Continuous Water Levels

Data will be used for:

- Modeling of surface water flows
- Recharge potential
- Potential needed improvements
- Design of proposed project

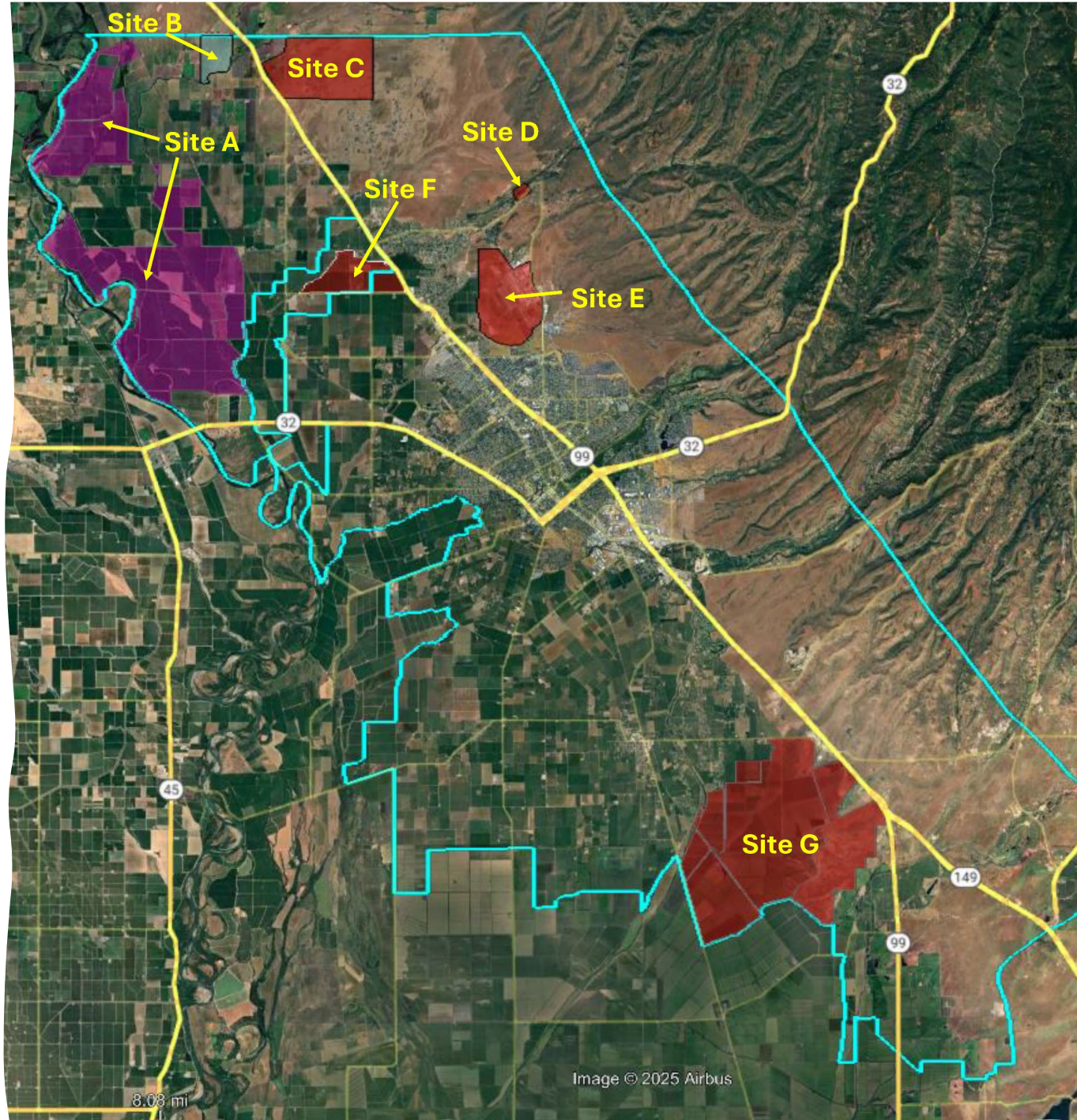
# Schedule – Component 4 – Lindo Channel



# Summary: What will we learn?

- Quantify the potential of additional recharge along Lindo Channel and estimated costs (\$/acre-feet)
- Identify sites for recharge and quantify costs and benefits of conducting recharge at selected sites
- Additional monitoring and data collection to understand where recharge water goes and what benefits recharge at the site may have (ex. increased water levels for irrigation or domestic wells, shallower groundwater levels for groundwater dependent ecosystems, interconnected surface water).

Back up Slides



Site B

Site C

Site A

Site D

Site F

Site E

Site G

8.08 mi

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