Farmington
Groundwater Recharge Program

Making Water a Crop for Eastern San Joaquin County's Future

Groundwater Recharge

An Investment for Today and Tomorrow

Located in the heart of California, San Joaquin County is the state's sixth leading agricultural producer with nearly $1.4 billion in annual farm revenues, and is a region home to more than 600,000 residents and a solid industrial base. From grapes to nearly $11 billion in retail sales and industrial production, it is a region that is dependent on a limited groundwater supply, leading to its aquifer being in a condition of critical overdraft.

The Farmington Groundwater Recharge Program is an investment to protect and restore the region's aquifer — the Eastern San Joaquin County Basin, a groundwater resource that has suffered from the migration of saline tainted water from the west as aquifer levels have steadily declined due to overdraft. More than 50 years of municipal and agricultural use of the aquifer has resulted in a situation where 220,000 acre-feet of surface water per year is needed to restore the Basin to a recovered level. The Farmington Program is ideally suited to immediately address current and future water supply and quality issues.

Locally lead by Stockton East Water District in partnership with the Sacramento District of the U.S. Army Corps of Engineers, the Farmington Program is a $33.5 million effort that during its initial phases seeks to recharge an average of 35,000 acre-feet per year of available surface water through spreading on up to 1,200 acres of land. Program participation is voluntary through short- and long-term agreements with landowners, who are compensated for the use of their land.

A core objective of the Farmington Program is to construct clusters of groundwater recharge facilities to be supplied with available flows from the Stanislaus, Calaveras, Littlejohns and Mokelumne watersheds. A combination of existing and new conveyance systems will be used to deliver water to recharged facilities. These conveyance and recharge facilities will be sized to meet immediate and future groundwater recharge needs in the Eastern San Joaquin County Basin.

© Joyce Gross

At full capacity, the Farmington Program delivers:

Basin-wide

- Stops saline intrusion to Stockton area wells
- Stabilizes a half-century of groundwater overdraft
- Provides drought protection and water supply reliability
- Provides a vehicle for expanded groundwater recharge

Agriculture

- Ensures a high-quality water supply for the region's high-value crops
- Reduces water costs by raising the water table
- Makes water a crop by rotating recharge activities with traditional land use

Wildlife & Environment

- Provides seasonal waterfowl habitat on the Pacific Flyway
- Develops a hydraulic barrier to further saline intrusion of the high quality groundwater supply

Urban

- Provides a continued supply of high-quality drinking water for the Stockton metropolitan area
- Prevents closure of additional municipal wells to saline intrusion
- Augments flood control by providing diversion of a portion of flood flows to off-stream storage

Program Zone

Construction, Operation and Maintenance

	Capital Cost ($1,000)[3]	Annual O&M Costs ($1,000)	Annual Cost $/acre-feet
Flooded Fields (80 acre site)	$517[1]- $531[2]	$32[1]- $40[2]	$28[2]-$50[1]
Spreading Basins (80 acre site)	$1,966	$33	$117
Excavated Recharge Pits (40 acre site)	$909	$23	$413

Source: Farmington Groundwater Recharge Seasonal Habitat Study

Notes:
1. Assumes infiltration rate of 0.25 ft/day.
2. Assumes infiltration rate of 0.5 ft/day.
3. Capital costs include all first costs including land acquisition, construction, PED, contingency, etc.

Groundwater Recharge

An Investment for Today and Tomorrow

Located in the heart of California, San Joaquin County is the state's sixth leading agricultural producer with nearly $1.4 billion in annual farm revenues, and is a region home to more than 600,000 residents and a solid industrial base. From grapes to nearly $11 billion in retail sales and industrial production, it is a region that is dependent on a limited groundwater supply, leading to its aquifer being in a condition of critical overdraft.

The Farmington Groundwater Recharge Program is an investment to protect and restore the region's aquifer – the Eastern San Joaquin County Basin, a groundwater resource that has suffered from the migration of saline tainted water from the west as aquifer levels have steadily declined due to overdraft. More than 50 years of municipal and agricultural use of the aquifer has resulted in a situation where 220,000 acre-feet of surface water per year is needed to restore the Basin to a recovered level. The Farmington Program is ideally suited to immediately address current and future water supply and quality issues.

Locally lead by Stockton East Water District in partnership with the Sacramento District of the U.S. Army Corps of Engineers, the Farmington Program is a $33.5 million effort that during its initial phases seeks to recharge an average of 35,000 acre-feet per year of available surface water through spreading on up to 1,200 acres of land. Program participation is voluntary through short- and long-term agreements with landowners, who are compensated for the use of their land.

A core objective of the Farmington Program is to construct clusters of groundwater recharge facilities to be supplied with available flows from the Stanislaus, Calaveras, Littlejohns and Mokelumne watersheds. A combination of existing and new conveyance systems will be used to deliver water to recharged facilities. These conveyance and recharge facilities will be sized to meet immediate and future groundwater recharge needs in the Eastern San Joaquin County Basin.

At full capacity, the Farmington Program delivers:

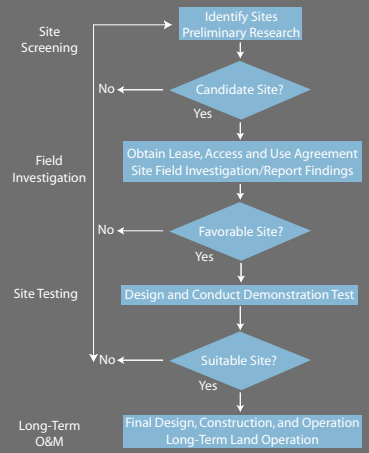
Basin-wide
- Stops saline intrusion to Stockton area wells
- Stabilizes a half-century of groundwater overdraft
- Provides drought protection and water supply reliability
- Provides a vehicle for expanded groundwater recharge

Agriculture
- Ensures a high-quality water supply for the region's high-value crops
- Reduces water costs by raising the water table
- Makes water a crop by rotating recharge activities with traditional land use

Wildlife & Environment
- Provides seasonal waterfowl habitat on the Pacific Flyway
- Develops a hydraulic barrier to further saline intrusion of the high quality groundwater supply

Urban
- Provides a continued supply of high-quality drinking water for the Stockton metropolitan area
- Prevents closure of additional municipal wells to saline intrusion
- Augments flood control by providing diversion of a portion of flood flows to off-stream storage

Site Selection Process



Phase One: Site Screening
- Determine landowner interest
- Analysis of potential benefits
- Analysis of site location for environmental review and water supply
- Analysis of parcel size and availability

Phase Two: Field Investigation
- Borehole drilling to sample and analyze soil composition
- Analysis of groundwater and supply water quality
- Environmental assessment, within framework of the National Environmental Policy Act and the California Environmental Quality Act

Phase Three: Site Testing
- Lease agreement with landowner
- Site preparation for demonstration testing
- Field-flooding operations, including monitoring of surface water quality and quantity
- Installation of monitoring wells for groundwater level, quality and distribution

Phase Four: Long-term Operations
- Long-term land agreements
- Final design, construction and operation
- Site management and monitoring

For more information, please contact:

Patrick Dwyer
USACE Program Manager
(916) 557-7802

Kevin Kauffman
SEWD General Manager
(209) 948-0333

or visit:
www.farmingtonprogram.org

Farmington
Groundwater Recharge Program

c/o 1228 "N" Street, Suite 5
Sacramento, CA 95814

Program Sponsors

US Army Corps of Engineers

STOCKTON EAST WATER DISTRICT

DeCarli Square photo courtesy of City of Stockton

Program Supporters

California Water Service Company
Central and South Delta Water Agencies
Central San Joaquin Water Conservation District
City of Lodi
City of Stockton
North San Joaquin Water Conservation District
San Joaquin County
San Joaquin County Flood Control and Water Conservation District
San Joaquin Farm Bureau Federation
Woodbridge Irrigation District