Farmington
Groundwater Recharge Program

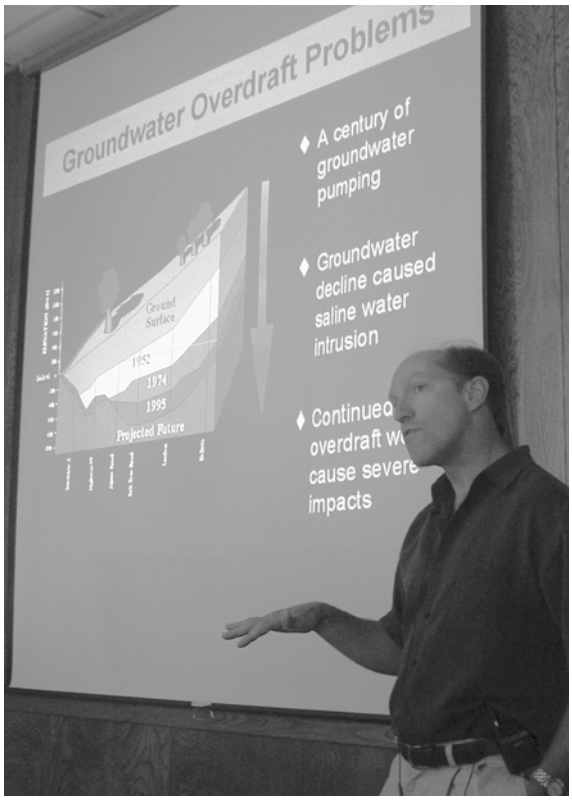
Fall 2003 Newsletter

The Farmington Groundwater Recharge Program is a $33.5 million effort lead by Stockton East Water District in partnership with the Sacramento Division of the U.S. Army Corps of Engineers to halt saline intrusion and begin restoration of the Eastern San Joaquin Groundwater Basin. The Program seeks to rotate water with other land-uses via short- and long-term agreements with landowners. The Program goal is to spread an average of 35,000 acre-feet of water annually on 800 to 1,200 acres of land generally bound by Jack Tone Road on the east, Highway 99 to the west, the Mokelumne River in the north and Temple Creek in the south. For more information, visit www.FarmingtonProgram.org.

New Crop Considered at Open House

Eastern San Joaquin County landowners and growers are considering a new "crop" for rotation with such long-standing staples as beans and tomatoes – water.

The consideration of water as a crop in grower's traditional rotation practices surfaced during the Farmington Groundwater Recharge Program Open House, a June 25, 2003, event hosted by the San Joaquin County Farm Bureau Federation to unveil the $33.5 million groundwater recharge program to area landowners.



Water use in Eastern San Joaquin County exceeds natural groundwater recharge by approximately 200,000 acre-feet per year, program technical expert Bill Swanson said during the Open House presentation.

The open house drew growers, landowners and other interested parties from throughout the region to learn how the Farmington Groundwater Recharge Program can manage and perhaps begin to reverse historic aquifer overdraft through flooded-field water recharge spreading. Stockton East Water District plans to spread an average of 35,000 acre-feet of water annually on 1,200 acres of land enrolled under short- and long-term agreements. *Continued on Page 4*

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Groundwater Recharge Evaluation Begins at City Flood Control Basin

A borehole drilling investigation at the San Joaquin Area Flood Control Agency's Detention Basin No. 1 was just completed in August as part of a four-phased approach to evaluate the parcel's eligibility for groundwater recharge under the Farmington Groundwater Recharge Program.

Conducted by Stockton East Water District, in partnership with the U.S. Army Corps of Engineers, the borehole drilling investigation reached depths up to 15 feet below existing detention basin bottom grade to analyze the soil constituency of the flood control basin.

Located southwest of Highway 99 and Eight Mile road, the basin is owned and operated by the San Joaquin Area Flood Control Agency. It is the first flood detention site to be evaluated under the Farmington program.

"This is just the first of several sites we're going to evaluate during the summer and fall. The effort will keep us on track to begin restoration efforts in the Eastern San Joaquin County groundwater basin by next April," Patrick Dwyer, program manager for the Corps, said.

The topic was among several covered during a panel discussion featuring Watkins, Stockton East Water District General Manager Kevin Kauffman and program consultant Bill Swanson, of MWH America Inc., Sacramento. Information booths and a brief program presentation were other open house features.

If no significant environmental issues are defined, water would be pumped from Mosher Creek into the basin in October to verify recharge performance. If the facility percolates at an acceptable rate, Phase II would be initiated to assess development of full-scale recharge facility at the basin, including revised water conveyance system; installation of an inflow meter and pond height metering system; and installation of at least two monitoring wells. This modification would be used to accurately quantify water inflow as well as provide valuable recharge performance data.

Full-scale recharge activities would then begin in April 2004 and include weekly site visits, collection of groundwater quality samples, and groundwater level monitoring. If included in the Farmington program, the basin would become a multi-use facility for winter flood control, spring/summer groundwater recharge or other future uses.

Trevor Joseph, lead hydrogeologist, conducts soil-boring investigation.

Landowner: Groundwater Recharge Saves Money

San Joaquin County grower Grant Thompson knows groundwater pumping doesn't pay.

"Over the last seven years, I've recouped the cost of buying surface water by not having to turn on my wells," said Thompson, current chair of the Central San Joaquin Water Conservation District.

Thompson's observation is a direct link to why the Farmington Groundwater Recharge Program is vital for eastern San Joaquin County – as the region's groundwater table declines the cost to lift it from the ground increases.

But turning off the pumps isn't an option for many San Joaquin County growers. Surface water in the region is limited and vulnerable to swings in supply due to drought, water policy decisions, flood control operation and environmental requirements. Consequently, historic urban, environmental, flood control and agricultural demand on the aquifer exceeds nature's capacity to replenish the system to manageable levels by approximately 200,000 acre-feet per year.

"Fifty-years-ago the region's groundwater supply seemed limitless..."

Fifty-years-ago the region's groundwater supply seemed limitless, Thompson said, but that is no longer true and aggressive steps must be taken.

"Stockton East and its neighboring water districts have been aggressive in trying to resolve the critical issues faced by landowners in the Eastern San Joaquin Valley," said Thompson. "Without a water recharge program, the water table will continue to plummet, creating a bigger expense for landowners."

Thompson was one of four area landowners that participated in pilot groundwater recharge tests for the then Farmington Groundwater Recharge and Seasonal Habitat Feasibility Study. The summer 2000 test on his property at Jack Tone Road included placement of monitoring wells and excavation of a pit to measure percolation rates.

Three test methods for groundwater recharge were employed during the feasibility study: excavated pit (typically large permanent type facilities with minimal slope), spreading basin (typically a long-term or permanent facility with an engineered 3:1 slope) and flooded field (typically a seasonal or short-term facility with minimal design engineering). Flooded-field is typically the least expensive method of groundwater recharge and is type most likely to be employed by the Farmington Groundwater Recharge Program.

"This area is sandy and the water percolated very quickly," Thompson said.

The three month test on Thompson's property was stopped after monitoring wells provided enough data to demonstrate the value of excavated pit recharge. The test confirmed the impact Thompson found by turning off his groundwater wells and relying on surface water to irrigate his crops: Seven years of surface water irrigation has raised the water table in this area by 12 feet.

Continued on Page 4

Landowner, Continued from Page 3

Thompson acknowledges that Farmington Groundwater Recharge Program can be a mixed blessing for the region's agriculture economy. In the short term, the region-wide value of San Joaquin County crops can decline as farmland is temporarily rotated from farming crops to farming water, he said.

"It impacts not only farmers, but also trucking companies and packing houses," he said. "But San Joaquin County's long-term future is at stake if we do nothing to take control of our future through programs such as the Farmington Program."

Stockton East Water District General Manager Kevin Kauffman said the Farmington Groundwater Recharge Program is focused on relying on the long-term water supply reliability and economic success of the region.

"Farming is an inherently risky business. Each year, a grower plants the seeds for what is hoped will be a profitable crop," Kauffman said. "I don't want to see the cost, availability and quality of water become the difference to whether a crop is profitable. The Farmington Program is our first step to make sure that never happens."

New Crop, Continued from Page 1

"Yes. Water could be considered for growers' crop rotation program ... as long as the district provides the water and pays fair market value for the land," Kenny Watkins, president of the San Joaquin County Farm Bureau Federation, said.

The topic was among several covered during a panel discussion featuring Watkins, Stockton East Water District General Manager Kevin Kauffman and project consultant Bill Swanson, of MWH America Inc., Sacramento. Information booths and a brief Project presentation were other open house features.

In replying to Watkins' statement, Swanson said several factors affect the level of compensation landowners would receive, including property location to existing water conveyance facilities and ability to percolate water. Initial estimates, however, indicate the per-acre rate will range from $100 to $250 per acre per year.

The range reflects current lease rates for typical and choice farmland in San Joaquin County as tracked by the California chapter of the American Society of Farm Managers and Rural Appraisers (see Sidebar).

Kauffman stressed that the Farmington Groundwater Recharge Program arrives during a period where the east county's groundwater aquifer is at significant risk. Decades of overdraft has seen water tables plummet and groundwater pumping costs climb. Overdraft has additionally invited saline-tainted water from the west to intrude into the basin. This intrusion has caused the removal of three City of Stockton municipal wells from service to date.

"Without action now, the region will suffer with more lost wells, reduced agricultural profits and regional economic decline," Kauffman said.

Under the Farmington Program, participating landowners can build and maintain their own recharge facilities for additional compensation, Stockton East Water District General Manager Kevin Kauffman said during the June 25 Open House.

Farmington Groundwater Recharge Program Candidate Property Evaluation

Dear Landowner,

Just as a book shouldn't be judged by its cover, a parcel's capability to recharge groundwater shouldn't be assessed by what is seen at top soil.

From soil composition to prior land use, knowing the answers to these and others factors are necessary steps in evaluating a candidate property's potential for inclusion in the Farmington Groundwater Recharge Program. Lead by Stockton East Water District and the U.S. Army Corps of Engineers, the Farmington Program is an effort to begin restoring the Eastern San Joaquin County groundwater basin through flooded-field spreading of an average of 35,000 acre feet of available water on 800 to 1,200 acres of land. Parcels are enrolled in the program under short- and long-term agreements with landowners, who are paid market rates for their land in the same manner as if it was leased to another party for crops, rangeland or other uses. The duration of these agreements are at the discretion of the landowner through negotiations with the District and may range from as little as one year up to providing a more permanent recharge facility.

This form is intended to serve as a landowner resource to self-evaluate candidate properties for inclusion in the program. In completing this form, you are answering many of the initial questions Farmington Groundwater Recharge Program representatives will use to evaluate and enroll you in the program.

Please invest the time to self-evaluate your property. Your support of this program will pay dividends for generations to come.

Thank you,

Farmington Groundwater Recharge Program Staff

Property Description

- Name/Company _____
- Location _____
- I am the property:
  - ☐ Owner and operator
  - ☐ Owner for lease/rent to others
  - ☐ Lease holder/renter
  - ☐ Other _____
- Size (Acres)
  - ☐ 20 to 50
  - ☐ 50 to 100
  - ☐ 100 to 150
  - ☐ 150 to 200
  - ☐ More than 200
- Current water supply (please note ratio of ground to surface water)
  - ☐ Groundwater _____ %
  - ☐ Surface water _____ %
- Current land use
  - ☐ Fallow
  - ☐ Rangeland
  - ☐ Irrigated Pasture
  - ☐ Row Crops
  - ☐ Field Crops
  - ☐ Permanent Crops
  - ☐ Wildlife Habitat
  - ☐ Industrial
  - ☐ Urban/rural
- Previous land use(s) (check as many that apply)
  - ☐ Fallow
  - ☐ Rangeland
  - ☐ Irrigated Pasture
  - ☐ Row Crops
  - ☐ Field Crops
  - ☐ Permanent Crops
  - ☐ Wildlife Habitat
  - ☐ Industrial
  - ☐ Urban/rural
  - ☐ Unknown

Property Description, continued

- Distance of property to the nearest surface water supply
  - ☐ 0-500 feet
  - ☐ 500-1000 feet
  - ☐ 1000-2500 feet
  - ☐ 2500-5000 feet
  - ☐ >5000 feet or approximately 1 mile
  - ☐ Unknown

Infrastructure & Irrigation

- Number of active wells?
  - ☐ 0
  - ☐ 1
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ More than 5
- Number of inactive wells?
  - ☐ 0
  - ☐ 1
  - ☐ 2
  - ☐ 3
  - ☐ 4
  - ☐ More than 5
- Existing irrigation system
  - ☐ Flood Irrigation
  - ☐ Furrow Irrigation
  - ☐ Portable Sprinkler
  - ☐ Fixed Sprinkler
  - ☐ Micro-irrigation or Drip
- Do some portions of the property need more/less water to sustain crops than others?
  - ☐ Yes, please explain below
  - ☐ No
  - ☐ Unknown

_____

_____

_____

Soil Description

- Surface soil type (check all that apply and approximate portion of your land in percent)
  - ☐ Sand
  - ☐ Sandy loam
  - ☐ Loam
  - ☐ Clay
  - ☐ Hardpan
  - ☐ Rock
  - ☐ Other
- Do you have reason to believe that your soils are highly permeable? Please explain.
  - ☐ Yes
  - ☐ No
  - ☐ Don't know
- If hardpan exists at your property, what is its approximate depth?
  - ☐ Unknown
  - ☐ 0-5 feet below ground surface
  - ☐ 5-10 feet below ground surface
  - ☐ 10-15 feet below ground surface
  - ☐ 15-30 feet below ground surface
  - ☐ 30-50 feet below ground surface
  - ☐ >50 feet below ground surface

My Desired Level of Involvement

- Level of interest in the program
  - ☐ I have no interest
  - ☐ I would like to continue to receive program information
  - ☐ I would like to discuss program with Stockton East Water District
- If I became a participant, I would:
  - ☐ Prefer to construct and maintain facility for additional compensation
  - ☐ Prefer Stockton East Water District construct and maintain facility
  - ☐ Open to discuss

Please return all surveys to:
Farmington Groundwater Recharge Program,
1228 "N" Street, Suite 5
Sacramento, CA 95814

Land Value Remains Stable

Keeping ahead of "cash poor, land rich" is a familiar comment as Central Valley landowners chose their crops for the pending season.

According to the California chapter of the American Society of Farm Managers and Rural Appraisers (ASFMRA), land value trends in San Joaquin County have remained stable with only wine grape land showing a decline.

This stability, says ASFMRA Region 3 Chairman Randal H. Edwards, is being driven more by urbanization than crop values.

"As areas become more densely populated, people are willing to pay more for smaller sites, which has helped stabilize the area," Edwards said.

Historically, typical and choice cropland in San Joaquin County has seen a wide range of land values, with choice cropland the most volatile. Typical cropland is defined as row cropland not suitable for permanent plantings. Choice cropland is defined as row cropland with deep alluvial soils suitable for permanent crops. For example, in 1994, choice cropland ranged from $4,000 to $9,100 per acre, peaking at $5,000 to $12,000 per acre in 1997. In 2002, choice cropland was valued at $5,500 to $9,000, ASFMRA statistics show.

The Farmington Groundwater Recharge Program will use ASFMRA as an initial reference for determining landowner compensation under the program. However, individual properties that show recharge potential may be appraised by a qualified appraiser just prior to the negotiations for the use of the property, and compensation will be based on the fair market value of the property, Stockton East Water District General Manager Kevin Kauffman said.

The table below includes per acre land and rental values for typical and choice cropland in San Joaquin County. Land rental values are based on per year payment. For a complete breakdown of land values, visit: *www.calasfmra.com.*

Land Use	1994 Land Value		1994 Rental Value		2002 Land Value		2002 Rental Value	
	Low	High	Low	High	Low	High	Low	High
Cropland – Typical	$3,200	$3,500	$100	$175	$4,000	$5,000	$100	$150
Cropland - Choice	$4,000	$9,100	$150	$250	$5,500	$9,000	$175	$250

Source: California chapter of the American Society of Farm Managers and Rural Appraisers

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

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www.farmingtonprogram.org

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