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TECHNICAL MEMORANDUM

To: Edwin Pattison
Calaveras County Water District

From: Rick Hanks, Kevin Johansen, Rick Besecker

Subject: Evaluating the Potential for Agricultural Development in Calaveras County

Date: June 15, 2011

PROJECT BACKGROUND

In response to multiple requests by agricultural interests, the Calaveras County Water District (District) desires to evaluate the potential for irrigated agricultural development in Calaveras County and has authorized preparation of this technical memorandum as a first step toward that evaluation. The District is uniquely positioned to potentially develop available water resources and deliver irrigation water that could support agricultural development that would benefit the local and regional economy.

Development of production agriculture in Calaveras County has been discussed for many years and several studies were previously conducted, notably the 1960 Tudor Engineering Company report by Dr. H.S. Nelson titled The Potential Agriculture of Calaveras County. That report concluded that "approximately 93,000 acres of land in Calaveras County and approximately 85,000 acres of land in the Area of Use outside the county are suitable for irrigation; that crops of olives, apples, walnuts, and pasture presently under production in the area studied can be irrigated by Calaveras County water resource developments...".

During the fifty years that have passed since the 1960 Tudor Engineering study, no surface water resources have been developed in Calaveras County to support widespread irrigated agriculture, and much of the lands have been developed for residential and municipal use, rendering them unsuitable for irrigated agriculture. The limited irrigated agriculture that does exist in the County primarily utilizes groundwater. The purpose of this technical memorandum is to report the findings of an updated preliminary evaluation of the potential for agricultural development in western Calaveras County that could potentially be irrigated with surface water.

IRRIGATED AGRICULTURE IN CALIFORNIA—HISTORY AND FUTURE

Prime agricultural land in California is generally located in the interior valleys, where flat, deep, well drained soils are optimal for irrigated agriculture. Historically, the widespread development of irrigated agriculture in most areas of California was limited by the lack of a reliable surface water supply. With the development of the State Water Project (SWP)

and the Federal Central Valley Project (CVP), a reliable and relatively inexpensive surface water supply was made available to western portions of the San Joaquin Valley that did not have local water supplies.

In contrast, the District has abundant water rights on the three major river systems within or bordering Calaveras County (the Mokelumne, Calaveras and Stanislaus Rivers), and can provide a reliable water supply to support irrigated agriculture, but the soils in the District are generally sloped, shallow, and have other limitations that render them less than optimal for irrigated agriculture. Development of irrigated agriculture within Calaveras County was contemplated in the early 1970's with the formation of the Western Calaveras Irrigation District, whose purpose was to deliver surface water to portions of northwestern Calaveras County for irrigated agriculture. A bond measure to support development of a water conveyance system was narrowly defeated in 1974. Without a surface water supply, agricultural development never got traction in Calaveras County. With adequate water and prime soils, the inland valleys became the preferred lands for agricultural development.

Presently, farmers in the central and southern San Joaquin Valley have been increasingly burdened by two problems associated with their water supplies: decreasing reliability and increased costs. The following factors have helped create these water supply challenges:

- Pumping restrictions in the south Delta are reducing south-of-Delta average allocations for both the State Water Project (SWP) (to an average of 60%[1] of contracted amounts) and the Federal Central Valley Project (CVP), adversely impacting farms located in the central and western side of the southern San Joaquin Valley.
- The San Joaquin River Restoration Program, which will provide year-round flows down the San Joaquin River, is projected to reduce Friant Division CVP allocations by 12-15%[2], adversely impacting farms located on the east side of the southern San Joaquin Valley.
- The Bay Delta Conservation Plan, which contemplates the construction of new conveyance facilities through the Delta, is projected to cost $7.5-$8.5B[3] over the first five years, and will substantially increase water costs to CVP and SWP south-of-Delta water users.
- The groundwater basins in the southern San Joaquin Valley have been identified by the California Department of Water Resources as being in a critical condition of overdraft[4], and continued pumping to supplement reduced surface supplies will exacerbate the overdraft conditions.

[1] The State Water Project Delivery Reliability Report, DWR 2009.
[2] San Joaquin River Restoration Program Fact Sheet April 2009.
[3] Presentation to BDCP Steering Committee July 15, 2010, http://baydeltaconservationplan.com
[4] California's Groundwater, DWR Bulletin 118-03.

It is expected that these factors will ultimately drive the cost of water beyond the ability of some growers in the southern San Joaquin Valley to economically afford to farm, and some of those growers will inevitably migrate to areas in the state that have better water supply prospects. Since the District has a reliable and available supply of surface water, growers may ultimately look to areas within Calaveras County where they could economically farm.

POTENTIAL IRRIGATED ACRES IN CALAVERAS COUNTY

While portions of the mountainous regions of Calaveras County support some irrigated agriculture, i.e., a number of vineyards have developed in the Murphys area that are primarily irrigated with groundwater, for economic development of irrigated agriculture that utilizes surface water it was felt that the greatest opportunity would be in the western, flatter portion of Calaveras County. Working with District staff, we have initially divided the western portion of the County into three study areas, focusing on the Valley Springs Study Area (Valley Springs) in the northwestern portion of the County, the Salt Springs Study Area (Salt Springs) in the central western portion, and the Copperopolis Study Area (Copperopolis) in the southwestern portion of the County (see Figure 1). These study areas were identified by District staff as having the most suitable soils, terrain, and elevation for potential irrigated agricultural development.

For this initial evaluation, only available information about the land in the County was utilized, no new field information has been developed to date. Discussions were held with the current and former County Farm Advisors and with the Natural Resource Conservation Service (NRCS) to gather local knowledge about the potential for agricultural development and what information is available about the land in the western portion of the County. The NRCS is currently in the process of preparing a soil survey of the area that will be available in a few years, but it is interesting to note that NRCS (or the former Soil Conservation Service) did not previously prepare a Calaveras County soil survey when other soil surveys were prepared for most of the other counties in the State. It was agreed that the best available information for evaluating the potential for irrigated agriculture in the County is the Calaveras County Soil-Vegetation Maps that were created in the mid-1960's and subsequently updated and published in handbook form by the Calaveras County Farm Advisors Office in 1982. Using the Soil-Vegetation Maps that were digitized by the County, and overlaying the three study area boundaries, the following data layers were analyzed using Geographic Information System (GIS) software and ranked for agricultural suitability:

- Parcel Size
- Slope
- Soil Depth
- Surface Rockiness
- Soil Stoniness
- Existing Cover
- Irrigated Land Suitability

Each of these criteria were analyzed separately and used to reject properties that did not meet the selected criteria based on economic (size) and agronomic characteristics. The properties that remained were ultimately combined to estimate the maximum potential acreage that could reasonably be developed for irrigated agriculture with the development of a surface water supply. The information shown in Tables 2 through 7 below reflect the acreage within each study area that met the criteria shown in the respective table, which were the choices in the Soil-Vegetation Survey dataset.

Note that this evaluation relies heavily on the Soil-Vegetation Survey dataset. Parcel size information is current data that was gathered from the County Assessor's Office, but all other information used in the evaluation was from the Soil-Vegetation Survey. It appears that this is the best and most comprehensive information available, but the survey data ranges between 30 and 45 years old. The scope of this evaluation did not include a provision for "ground truthing" the results, so the selected lands shown on the figures should not be relied on to locate specific parcels. Rather, the lands that met the selected criteria represent generalized locations of potential agricultural development.

Parcel Size

Modern production agriculture typically relies on economies of scale to offset the large fixed costs of initial development and ongoing operation. Examples of these costs include land acquisition, orchard/vineyard development, equipment acquisition, etc. As such, larger parcels are more suited to production agricultural development as these fixed costs can be distributed over more acreage, reducing the unit cost per acre. For this analysis, parcels 20 acres and larger were selected for initial evaluation. Parcels smaller than 20 acres were not selected for this initial evaluation because they were viewed as being too small to economically develop into a production farming unit. Parcels less than 20 acres may be viable and profitable as small-family or "boutique" farms, but for evaluating the potential for production agricultural development it was felt that the focus of this initial evaluation should be on parcels that are 20 acres or larger because parcels smaller than 20 acres may not be able to afford the large capital investment for a large-scale water diversion and conveyance system.

That is not to say that parcels less than 20 acres are not viable for agricultural production, and our understanding is that the County in fact has seen the greatest agricultural growth in the past fifteen years on parcels that are between 5 and 20 acres. If a water supply conveyance system was ultimately developed to serve agricultural land within the County, then parcels that are less than 20 acres that are relatively close to the conveyance system would likely be able to economically connect to water service.

Table 1 summarizes the resulting acreage that remains after parcels of less than 20 acres were rejected. Figure 2 shows the location of the parcels that were rejected based on small parcel size alone.

Table 1. Summary of Selection by Parcel Size.

Parcel Size	Valley Springs Study Area Parcels	Valley Springs Study Area Acres	Salt Springs Study Area Parcels	Salt Springs Study Area Acres	Copperopolis Study Area Parcels	Copperopolis Study Area Acres	Total Parcels	Total Acres	Selection Result
Less than 5 Acres	6,526	8,645	94	121	21	8	6,641	8,774	Rejected
>5 and <20 Acres	1,618	13,132	79	943	5	56	1,702	14,130	Not selected
20 Acres or Greater	471	32,528	421	70,448	50	22,507	942	125,482	Selected
Total	8,615	54,304	594	71,512	76	22,571	9,285	148,387	
Subtotal Selected	471	32,528	421	70,448	50	22,507	942	125,482	

Source: Calaverous County Assessor's office.

Slope of the Ground Surface

Innovations in irrigation technology have allowed agricultural developers to design irrigation systems for lands that are not necessarily level. For this analysis, lands with slopes greater than 30 percent were rejected as being too steep for production agriculture.

Table 2 summarizes the resulting acreage that remains after lands with slopes greater than 30 percent were rejected. Figure 3 shows the location of lands that were rejected based on excessive slope.

Table 2. Summary of Selection by Slope.

Slope	Valley Springs Study Area Acres	Salt Springs Study Area Acres	Copperopolis Study Area Acres	Total Acres	Selection Result
0%	8,097	6,843	872	15,812	Selected
0 - 30%	39,000	55,965	19,120	114,085	Selected
30 - 50%	6,949	8,607	2,538	18,095	Rejected
50 - 70%	257	97	41	395	Rejected
> 70%	0	0	0	0	Rejected
Total	54,304	71,512	22,571	148,387	
Subtotal Selected	47,097	62,808	19,992	129,897	

Source. Calaveras County Soil-Vegetation Handbook (1982), Calaveras County Farm Advisor's Office.

Soil Depth

While plants need a minimum amount of soil depth to flourish and generally the deeper the soil profile the better, shallow soils can often be altered through mechanical means by ripping and deep plowing before planting and through the use of soil amendments. The County Farm Advisor's office has indicated that while many of the soils on the western edge of the county are shallow, their shallowness is principally due to an impermeable layer that is not bedrock, and that most of these soils can be improved by

deep ripping through such hardpan layer. For this analysis, lands with soil depths less 1 foot were rejected as being too shallow for agricultural development.

Table 3 summarizes the resulting acreage that remains after lands with soil depths less than 1 foot were rejected. Figure 4 shows the location of lands that were rejected based on shallow soils alone.

Table 3. Summary of Selection by Soil Depth.

Soil Depth	Valley Springs Study Area Acres	Salt Springs Study Area Acres	Copperopolis Study Area Acres	Total Acres	Selection Result
Very Shallow (< 1')	10,611	12,963	7,057	30,631	Rejected
Shallow (1' - 2')	26,535	32,976	7,833	67,345	Selected
Moderately Shallow (2' - 3')	7,819	15,709	6,420	29,947	Selected
Moderately Deep (3' - 4')	971	2,627	388	3,986	Selected
Deep (> 4')	271	395	0	666	Selected
Not Classified	8,097	6,843	872	15,812	Rejected
Total	54,304	71,512	22,571	148,387	
Subtotal Selected	35,596	51,706	14,642	101,944	

Source: Calaveras County Soil-Vegetation Handbook (1982), Calaveras County Farm Advisor's Office.

Rockiness of the Soil

Rockiness, or percentage of surface rock, can be a limiting factor to agricultural development, as exposed rock limits the area that can be planted, and generally indicates shallow soils adjacent to the rocks. For this analysis, lands with rocks covering more than 10 percent of soil surface were rejected as being too rocky for agricultural development.

Table 4 summarizes the resulting acreage that remains after lands with rocks covering more than 10 percent of the soil surface were rejected. Figure 5 shows the location of lands that were rejected based on rockiness alone.

Table 4. Summary of Selection by Rocky Soil Surface.

Percent of Surface Rock	Valley Springs Study Area Acres	Salt Springs Study Area Acres	Copperopolis Study Area Acres	Total Acres	Selection Result
0%	48,473	60,894	18,048	127,416	Selected
2 - 10%	0	404	0	404	Selected
10 - 50%	5,393	9,448	4,519	19,360	Rejected
10 - 25%	108	0	0	109	Rejected
25 - 50%	330	766	3	1,099	Rejected
Total	54,304	71,512	22,571	148,387	
Subtotal Selected	48,473	61,298	18,048	127,820	

Source: Calaveras County Soil-Vegetation Handbook (1982), Calaveras County Farm Advisor's Office.

Stoniness of the Soil

Stony soils, where the coarse fragment in the soil (gravel, cobbles, or stones) makes up 20 percent or more of the soil's volume, can be limiting to agricultural development, as these soils tend to be droughty (have low water holding capacities) and can be damaging to tilling and harvesting equipment. For this analysis, stony soils were rejected as being too limiting for agricultural development.

Table 5 summarizes the resulting acreage that remains after lands with stony soils were rejected. Figure 6 shows the location of lands that were rejected based on stoniness alone.

Table 5. Summary of Selection by Stony Soil Composition.

Soil Type	Valley Springs Study Area Acres	Salt Springs Study Area Acres	Copperopolis Study Area Acres	Total Acres	Selection Result
Not Stony	53,899	70,355	22,571	146,824	Selected
Stony	406	1,157	0	1,562	Rejected
Total	54,304	71,512	22,571	148,387	
Subtotal Selected	53,899	70,355	22,571	146,824	

Source: Calaveras County Soil-Vegetation Handbook (1982), Calaveras County Farm Advisor's Office.

Woody Vegetation

The density of woody vegetation (trees and shrubs) can be a limiting factor to agricultural development, as removal can be both costly and environmentally objectionable. For this analysis, lands that were identified during the Soil-Vegetation Survey as having woody vegetation covering more than 20 percent of soil surface were rejected as being too densely populated for agricultural development.

Table 6 summarizes the resulting acreage that remains after lands with woody vegetation covering more than 20 percent of the soil surface were rejected. Figure 7 shows the location of lands that were rejected based on vegetation density alone.

Table 6. Summary of Selection by Woody Vegetation Cover.

Cover Density (Percent of Ground Covered by Woody Vegetation)	Valley Springs Study Area Acres	Salt Springs Study Area Acres	Copperopolis Study Area Acres	Total Acres	Selection Result
Extremely Open (0 - 5%)	18,061	29,829	6,828	54,718	Selected
Very Open (5 - 20%)	9,188	6,442	4,315	19,944	Selected
Open (20 - 50%)	12,809	19,300	8,969	41,078	Rejected
Semidense (50 - 80%)	5,905	7,783	1,860	15,548	Rejected
Dense (80 - 100%)	4,016	6,793	447	11,256	Rejected
Not Classified	4,325	1,365	152	5,842	Rejected
Total	54,304	71,512	22,571	148,387	
Subtotal	27,249	36,271	11,143	74,663	

Source: Calaveras County Soil-Vegetation Handbook (1982), Calaveras County Farm Advisor's Office.

Irrigated Land Suitability

The irrigated land suitability rating that was generated by the Soil-Vegetation Survey team is based on soil characteristics of depth, surface and subsoil textures, rockiness, and parent material of soils that occur in a natural state on slopes less than 30 percent. For this analysis, lands with irrigated land suitability ratings of less than low were rejected as being too unsuitable for agricultural development.

Table 7 summarizes the resulting acreage that remains after lands with less than low irrigated land suitability were rejected. Figure 8 shows the location of the parcels that were rejected based on irrigated land suitability alone.

Table 7. Summary of Selection by Irrigated Land Suitability.

Irrigated Land Suitability	Valley Springs Study Area Acres	Salt Springs Study Area Acres	Copperopolis Study Area Acres	Total Acres	Selection Result
High	0	0	0	0	Selected
Medium to High	1,424	908	132	2,465	Selected
Medium	7,663	15,813	6,585	30,061	Selected
Low to Medium	6,302	24,955	6,198	37,455	Selected
Low	9,618	12,322	3,920	25,860	Selected
Questionable to Low	2,910	0	0	2,910	Rejected
Unsuited to Low	0	0	695	695	Rejected
Unsuited	5,788	9,259	1,529	16,576	Rejected
Questionable	0	0	0	0	Rejected
Questionable to Unsuited	13,415	3,350	3,196	19,960	Rejected
Not Classified	7,186	4,904	316	12,406	Rejected
Total	54,304	71,512	22,571	148,387	
Subtotal Selected	25,006	53,999	12,915	95,840	

Source: Calaveras County Soil-Vegetation Handbook (1982), Calaveras County Farm Advisor's Office.

Screening Results

Utilizing the screening criteria previously described, parcels were selected that had the potential, given an adequate and economical surface water supply, to be developed into irrigated agriculture based on the information contained in the Soil-Vegetation Survey dataset and current parcel size information. Table 8 summarizes the maximum acreage that could potentially be developed into irrigated agriculture, based on meeting the selection criteria previously discussed. Figure 9 shows the location of the parcels that were selected based on all of those criteria.

Table 8. Summary of Selection by all Criteria.

Suitability for Agricultural Production	Valley Springs Study Area Acres	Salt Springs Study Area Acres	Copperopolis Study Area Acres	Total Acres
Lands not meeting Criteria	50,888	51,699	16,580	119,167
Lands meeting Criteria	3,416	19,813	5,991	29,220
Total Acres	54,304	71,512	22,571	148,387

Source: Calaveras County Soil-Vegetation Handbook (1982), Calaveras County Farm Advisor's Office.

POTENTIAL AGRICULTURAL DEMANDS

The Tudor Engineering report identified apples, walnuts, olives and irrigated pasture as potential index crops for their study. The Calaveras County Agricultural Commissioner's 2009 Annual Crop Report notes that relatively small acreages of those crops are being grown, in addition to some wine grapes and minor crops, including stone fruits,

pistachios, and berries, that are grown in the County. Given suitable soils and water supply, it is anticipated that the areas identified in the screening process would be suited to producing all of these crops. Some crops, such as berries, would likely be more boutique size farms rather than large production acreage.

One of the "hot" crops right now is almonds, and almonds in fact are currently being grown in neighboring Stanislaus County south of Highway 4, just west of the County. Also in Stanislaus County just a little further west, Oakdale Irrigation District (OID) is currently experiencing the conversion of land to almonds from rangeland and irrigated pasture on soil that is often fairly shallow with an underlying hardpan. This conversion to almonds is occurring in large part because OID has a reliable water supply and the economics of farming almonds is currently favorable to development. Almonds may be a possibility for the western portion of the County that have suitable temperature ranges. In addition, grapes, olives and stone fruits also have potential to do well on the western edge of the County. Irrigated pasture would supplement the dryland grazing that is prevalent in the County, but the relatively high water cost could prevent that crop from being economically viable.

The crops identified above have water requirements ranging from 2.5 AF/acre to over 3.5 AF/acre. After allowing for irrigation system inefficiencies, leaching requirements, etc., water requirements would likely range between 3.0 and 4.0 AF/acre, and could exceed 4.0 AF/acre. An average irrigation demand value of 3.5 AF/acre was used for this demand study to conservatively estimate potential agricultural water demand. Table 9 summarizes the estimated maximum potential agricultural irrigation demands for each study area with the minimum 20-acre parcel size.

Table 9. Potential Agricultural Demands.

Suitability for Agricultural Production	Valley Springs Study Area	Salt Springs Study Area	Copperopolis Study Area	Total
Lands Meeting Criteria, acres	3,416	19,813	5,991	29,220
Est. Avg. Irrigation Demand, AF/acre	3.5	3.5	3.5	
Total Estimated Demand, AF	11,956	69,346	20,969	102,270

It should be noted from the table above that most of the potential agricultural water demand appears to be in the Salt Springs and Copperopolis area. By contrast, in the 1960 Tudor Engineering Report that estimated there was approximately 93,000 acres within the County that were suitable for irrigation, approximately 25,000 acres appear to fall within the three study areas, with the highest concentration of irrigable acres within the Valley Springs area and very little in the Salt Springs area. Furthermore the land that was proposed to be served by the Western Calaveras Irrigation District was principally in the Valley Springs Study Area. Significant development and parcelization of the Valley Springs area since the mid-1970's would mean that a lot of the land previously identified as irrigable in the Valley Springs area did not meet the selection criteria for this evaluation, primarily because most of the parcels are now less than 20 acres. One of the uncertainties at this point is why more land in the Salt Springs area

wasn't identified as potential irrigable land in the 1960 Tudor Engineering report. Part of the second phase of this analysis (if authorized) would be to ascertain whether the potential irrigable acreage in the Salt Springs and Copperopolis areas identified in this analysis is indeed suitable for production agriculture.

RECOMMENDED NEXT STEPS

If the District is interested in further pursuing the potential for agricultural development in the western portion of the County, there are a number of questions that need to be answered and items that need to be verified. The following next steps are recommended to help the District decide whether to pursue agricultural development and to what degree:

1) This initial analysis utilizes a dataset of information that is 30 to 45 years old and has not been verified. At this time it is unknown how extensive the original field work was in developing the dataset and it is unknown how things have changed in the area. It is recommended that this initial analysis and subsequent results be reviewed with the County Farm Advisors Office and local NRCS office to ascertain whether local knowledge could refine the analysis. The data needs to be field verified or "ground truthed", but most of the land is privately owned and it may be difficult to obtain permission to access the land.

2) While many soil conditions can often be mitigated through mechanical means, the deeper the soils the better. At this time it is not known what a shallow soil depth in the Soil-Vegetation dataset actually means, but agricultural development will be much more economically attractive if a grower does not have to spend significant capital dollars on deep ripping or other soil modifications. The NRCS is in the middle of their soil survey and it is our understanding that they cannot publicly release any information until the soil survey is published in a few years, but it may be possible to have them verify some of these preliminary findings by comparing soil borings that they have available. They may also be able to generally tell us more information about certain areas such as the Salt Springs area.

3) Discussions with local landowners would be helpful to gain their insight on the potential for developing irrigated agriculture in the area. It is interesting to note that the water supply from the private Salt Springs Reservoir apparently is delivered to agricultural land outside Calaveras County rather than used on the land adjacent to or immediately downstream of the reservoir. It would be helpful to learn more about this area and how that water supply was developed.

4) Gather information on land prices and lease rates in the area.

5) Further evaluate the possible crop mix to identify crops that would likely be limited to small boutique acreage versus larger production acreage and the factors that would influence that decision, such as contracts and processing facilities. It may also be possible to research possible effects of the apparent impact of global warming on future cropping patterns Almonds moving onto a

little higher ground may be viable to obtain adequate chilling hours with the apparent impact of global warming.

6) Evaluate the economics of different crops that could be grown in the area, utilizing the crop production cost information developed by the University of California and modifying it for local conditions with expected yield information. The irrigation system types to serve each crop would also need to be included with expected capital repayment costs. A determination needs to be made to estimate how much agriculture could pay for water and infrastructure, while still yielding a reasonable profit to the grower to entice agricultural development.

7) Evaluate the community support for developing agriculture. It is anticipated that some opposition to agriculture would be present, either because of changes to the landscape or the perception that urban areas would subsidize agriculture. Irrigated pasture, for instance, may be more acceptable than cropland because it maintains the current grazing and livestock lifestyle, but irrigated pasture may not be economically possible if there was a significant cost for the delivered water.

8) Evaluate the available water supply and possible diversion locations and perform a conceptual evaluation of several water supply conveyance system alternatives, analyzing possible routes and system types (gravity versus pressurized systems) to serve potential agricultural development land to utilize the available District water supply. Topography would need to be reviewed along with the number of landowners that would need to be dealt with along the conveyance route (the fewer the better). Parcels that are smaller than 20-acres could be identified in the vicinity of each potential conveyance route to help identify the total potential irrigated acreage. A conceptual level cost estimate of a potential preferred conveyance system would need to be performed to consider in the economic analysis.

9) The above information could be used to essentially update the 1960 Tudor Engineering Report that would be helpful in discussing the possibility of developing production agriculture with local landowners and outside investors.

SUMMARY

This initial evaluation indicates that there is the potential to use over 100,000 acre-feet of water for agricultural production within the western portion of Calaveras County, realizing that this analysis utilizes a dataset that is 30 to 45 years old. This information needs to be verified and "ground truthed" before committing to plans for agricultural development. Should the District decide to pursue a more in-depth study, the goal of the second phase of this analysis would be to prioritize and address the items noted above under Next Steps and confirm and/or revise the results of this preliminary analysis.