Final

Municipal Service Review
Solano Irrigation District

Solano Local Agency Formation Commission

June 9, 2014

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ACRONYMS

AFY	acre feet per year
CDOF	California Department of Finance
CEQA	California Environmental Quality Act
CKH	Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
CDP	Census Designated Place
DSWA	Dixon-Solano Water Authority
DUC	Disadvantaged Unincorporated Community
ETAW	evapotranspiration of applied irrigation water
FSSD	Fairfield-Suisun Sewer District
ID	Improvement District
JPA	Joint Exercise of Powers Authority
LAFCO	Local Agency Formation Commission
M&I	municipal and industrial
MPWD	Maine Prairie Water District
MSR	Municipal Service Review
POE	Point Of Entry
PPH	persons per household
PSC	Putah South Canal
SCADA	Supervisory Control and Data Acquisition
SID	Solano Irrigation District
SOI	Sphere of Influence
SP	Solano Project
SSWA	Suisun-Solano Water Authority

1: INTRODUCTION

1.1 Role and Responsibility of LAFCO

The fundamental role of a Local Agency Formation Commission (LAFCO) is to implement the Cortese-Knox-Hertzberg (CKH) Local Government Reorganization Act of 2000 (Government Code Section 56000, et seq.), providing for the logical, efficient, and most appropriate formation of local municipalities, service areas, and special districts. The CKH requires all LAFCO's, including Solano LAFCO, to conduct a Municipal Service Review (MSR) prior to updating the spheres of influence (SOI) of the various cities and special districts in the County (Government Code Section 56430). CKH requires an MSR and SOI update every 5 years.

1.2 Purpose of the Municipal Service Review

This MSR will provide Solano LAFCO with an informational document and make determinations for each of the seven elements prescribed by CKH. This MSR evaluates the structure and operation of each district and discusses possible areas for improvement, coordination, or changes to the SOI as appropriate. The purpose of the MSR is to collect data in order to provide a comprehensive analysis of service provision by Solano Irrigation District (SID). The boundaries of SID and proposed SOI are shown in Exhibit 1. Key sources for this study included agency-specific information gathered by reviewing strategic plans, general plans, websites, financial reports, agency audits, research, personal communication, and the Municipal Service Review Guidelines published by the Governor's Office of Planning and Research.

The report contains one section for each of the following seven elements as prescribed by CKH:

1. **Growth and Population Projections for the Affected Area.** This section reviews projected growth within the existing service boundaries of the district and analyzes the district's plans to accommodate future growth.
2. **The location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence.** A disadvantaged unincorporated community is defined as inhabited territory with a median household income of 80 percent or less of the statewide median income.
3. **Present and Planned Capacity of Public Facilities and Adequacy of Public Services Including Infrastructure Needs or Deficiencies.** This section discusses the services provided including the quality and the ability of the district to provide those services, including a discussion of capital improvement projects currently underway and projects planned for the future where applicable.
4. **Financial Ability of Agencies to Provide Services.** This section reviews the district's fiscal data and rate structure to determine viability and ability to meet service demands. It also addresses funding for capital improvement projects.

5. **Status of and Opportunities for Shared Facilities.** This section examines efficiencies in service delivery that could include sharing facilities with other agencies to reduce costs by avoiding duplication.

6. **Accountability for Community Service Needs, including Government Structure and Operational Efficiencies.** This section examines the district's current government structure, and considers the overall managerial practices. It also examines how well each district makes its processes transparent to the public and invites and encourages public participation.

7. **Matters Related to Effective or Efficient Service Delivery Required by Commission Policy.** This section includes a discussion of any Solano LAFCO policies that may affect the ability of each district to provide efficient services.

1.3 Uses of the Municipal Service Review

The MSR is used to examine the operations of a local agency, identify agencies unable to perform their mandated services, or identify ways to provide more effective, efficient services. Government Code Section 56375 allows LAFCO to take action on recommendations found in the MSR, such as initiating studies for changes of organization, updating the SOI, or originating a change of organization.

Studies in anticipation of a change of organization are useful to identify potential issues that may arise during the process. Issues can range from legal barriers to fiscal constraints to concerns of residents and landowners. A study would allow more focused analysis and the opportunity to resolve issues or options before beginning the process.

The MSR also provides the necessary information to help LAFCO make decisions on a proposed SOI update. In evaluating the SOI, the MSR provides the information necessary to determine if the agency has the capability to serve a larger area. The MSR discusses the financial condition of each district, source of revenues, and projected expenses. It also includes a discussion of the projected infrastructure needs that would allow for expansion of those services. The MSR, however, does not address California Environmental Quality Act (CEQA) requirements for the SOI update. That requires a separate analysis.

Alternatively, the MSR can recommend changes of organization: consolidation, dissolution, merger, establishment of a subsidiary district, or the creation of a new agency that typically involves a consolidation of agencies. Those changes of organization may also require an environmental review, a property tax sharing agreement**,** and an election.

1.4 Sphere of Influence

The SOI is defined as "a plan for the probable physical boundaries and service areas of a local agency" (Government Code 56076). The SOI represents one of the most important tools LAFCO uses to "carry out its purposes and responsibilities for planning and shaping the logical and orderly development and coordination of local government agencies" (Government Code Section 56425).

CKH requires LAFCO to adopt an SOI for each city and special district in the county. The SOI serves much the same function for LAFCO as general plans serve for cities and counties: it guides the Commission in its consideration of annexations and other forms of reorganization. The sphere represents the logical extent of the agency's boundary in the next 5 to 10 years. However, since LAFCO is required to update and review the sphere every 5 years, the sphere in all practicality has a 5-year planning horizon. When adopting the SOI, the Commission must make the following determinations:

- **Present and planned land uses in the area.** This consists of a review of current and planned land uses, including agricultural and open-space, based on planning documents.
- **Present and probable need for public facilities and services.** This includes a review of the services available in the area and the need for additional services.
- **Present Capacity of Public Facilities.** This section includes an analysis of the capacity of public facilities and the adequacy of public services that the district provides or is authorized to provide.
- **Social or economic communities of interest.** This section discusses the existence of any social or economic communities of interest in the area if the Commission determines that they are relevant to the district. These are areas that may be affected by services provided by the District or may be receiving services in the future.
- **Present and probable need for services to disadvantaged communities.** Beginning July 1, 2012 the commission must also consider services to disadvantaged communities which are defined as populated areas within the SOI whose median household income is less than or equal to 80 percent of the statewide median income.

A SOI may be amended or updated. An amendment is a relatively limited change to the SOI to accommodate a specific project. Amendments can add or remove territory, address a change in provision of services by an agency, or revise a plan for services when it becomes impractical.

An update is a comprehensive review of the SOI that includes the map and relevant portions of one or more MSR's. The review allows for the identification of areas that are likely to receive services and to exclude those territories that are not or will not be served in the SOI.

1.5 California Environmental Quality Act

Public Resources Code Section 21000, *et seq.*, also known as the California Environmental Quality Act (CEQA), requires public agencies to evaluate the potential environmental effects of their actions. This MSR is exempt from CEQA under Class 6 categorical exemption. CEQA Guidelines Section 15306 states that "Class 6 consists of basic data collection, research, experimental management, and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource."

2: EXECUTIVE SUMMARY

The fundamental role of a Local Agency Formation Commission (LAFCO) is to implement the Cortese-Knox-Hertzberg (CKH) Local Government Reorganization Act of 2000 (Government Code Section 56000, et seq.), providing for the logical, efficient, and most appropriate formation of local municipalities, service areas, and special districts. The CKH requires all LAFCO's, including Solano LAFCO, to conduct a Municipal Service Review (MSR) prior to updating the spheres of influence (SOI) of the various cities and special districts in the County (Government Code Section 56430). CKH requires an MSR and SOI update every 5 years.

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The report contains one section for each of the following seven elements as prescribed by CKH:

1. **Growth and Population Projections for the Affected Area.** This section reviews projected growth within the existing service boundaries of the district and analyzes the district's plans to accommodate future growth.
2. **The location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence.** A disadvantaged unincorporated community is defined as inhabited territory with a median household income of 80 percent or less of the statewide median income.
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7. **Matters Related to Effective or Efficient Service Delivery Required by Commission Policy.** This section includes a discussion of any Solano LAFCO policies that may affect the ability of each district to provide efficient services.

DISTRICT PROFILE

The Solano Irrigation District was formed in 1948 under the California Water Code, Division 11. In all the service area covers approximately 73,000 acres. The District primarily serves agriculture as well as some municipal and industrial users. It provides irrigation water and potable water to approximately 11,000 retail customers including 10,000 potable water customers, and 1,000 non-potable water customers.

Between 1948 and 1957, substantial efforts were made by the District and the County to provide water to Solano County. The water system, termed the Solano Project, included Monticello Dam, Lake Solano, Diversion Dam, the 33-mile long Putah South Canal (PSC), and Terminal Reservoir. The groundbreaking ceremony for the Monticello Dam, with a capacity of 1.6 Million acre feet, was held on September 25, 1953. Construction of the Solano Project was completed on November 7, 1957. All lands within the District boundary had water available by the spring of 1963.

In addition to the water system the District also generates electricity. In 1981 the District began construction of an 11.5 megawatt hydroelectric power plant at the base of the Monticello Dam. The plant was completed in 1983. SID maintains and operates the plant. PG&E purchases all the generated power.

GROWTH AND POPULATION PROJECTIONS

Approximately 37,000 people reside within the District boundaries and an estimated 10 residents live in the proposed SOI. The population in Solano County is expected to increase by 5% over the next five years. Since most of the SID territory is outside the cities the anticipated County growth rate can be used to estimate growth in the District and proposed SOI. At 5% growth the District and proposed sphere would have by approximately 38,900 residents by 2020.

DISADVANTAGED UNINCORPORATED COMMUNITIES (DUC)

In 2012, the median household income for the State was $61,400. In order to make this assessment income for census designated places in Solano County were compared to the statewide median household income. Elmira has the lowest median income at 84% of the State's value and still does not qualify as a DUC. The proposed sphere includes primarily agricultural lands and only four residences with 7 registered voters scattered throughout the sphere area. Therefore there are no DUC's adjacent to SID boundaries or in the proposed SOI.

PRESENT AND PLANNED CAPACITY

SID operates the Solano Project, which delivers Lake Berryessa water to four cities, the Maine Prairie Water District and other SID customers. The Solano Project includes the Monticello Dam, Putah Diversion Dam, and the PSC. SID operates and maintains these Solano Project facilities on behalf of Solano County Water Agency. Lake Berryessa has the ability to store 1,600,000 acre-feet of water. SID provides irrigation water from surface waters but also has its own deep wells that supplement its surface-water supply from the Solano Project.

SID has an allocated surface water supply from the Solano Project for 141,000 acre feet per year. With the addition of groundwater supplies SID has available an average annual water supply of approximately 146,000 acre feet. Fully utilizing historic capacity of wells would result in a supply potential of 155,000 acre feet.

The Solano Irrigation District's primary water demand is the agricultural water necessary to produce the crops grown within the SID service area. In addition to this demand SID provides municipal and industrial (M&I) and non-potable water supplies to some rural developments within its service area. When land use changes and increased urbanization occur, M&I water demand increases. Historically, SID has entered into agreements with cities (Benicia, Fairfield, Suisun, and Vacaville) to augment the cities' supplies. The agreements provide for water transfers from SID to those cities. Depending upon the agreement, water may be held in trust for the city and available upon demand, or on an entitlement basis. If on an entitlement basis, the city is able to utilize the entitlement water as carryover storage if it is not used in the year allotted.

The review of projected agricultural water demands needs to consider ongoing improvements in water delivery efficiency. Water delivery losses in the SID distribution system and the on-farm delivery systems of individual farmers together with operational spills and the recovery and reuse of tailwater are all factors affecting the required quantity of SID water deliveries. SID has a rehabilitation and betterment program which continues to improve infrastructure which helps to reduce losses. This includes installing concrete lining in canals not originally lined to reduce seepage losses, automatic control gates, and Supervisory Control and Data Acquisition (SCADA) systems to better monitor operational spills and reduce unnecessary water supply losses. All potential, cost effective control measures to further reduce water losses and improve the efficiency of surface water deliveries are investigated. As the value of water increases, many farmers in SID are also making changes and improvements to their on-farm water delivery systems. This includes capturing and reusing agricultural tailwater return flows and installing new water delivery systems. Over the last five years SID has seen an increased number of farmers installing micro spray and drip irrigation systems on newly planted orchards. Continued technological improvement in water delivery efficiency will further reduce the water delivery needed to meet the annual SID ETAW. A current estimate of SID water supplies and water demands projected to 2034 is provided in Table 6.2.

The data shows that District has the capacity to provide water to current customers. The District has an average annual excess capacity of 6,400 AF and it is likely the District has sufficient capacity to serve those areas in the proposed Sphere of Influence.

In years when demand will exceed supply (and no carryover water is available), SID has the means within its Rules and Regulations to implement an allocation policy to limit the amount of water supplied (or allocated) to each user. Further, by managing its carryover supplies in Lake Berryessa (Solano Project entitlement waters that are not used in one year are carried over to the next and are cumulative until Lake Berryessa spills), SID has the ability to meet demands in years the demand will exceed supply. SID has proven this ability over the last 50+ years with only one year (1991) when SID implemented a water shortage allocation program to conserve water and provide a supplemental urban water supply to help Solano Project urban water users meet their demands during a water shortage. Based on the proposed Sphere of influence and the data provided in Table 6.1, the average annual demand results in approximately 3,500 AF.

FINANCIAL ABILITY TO PROVIDE SERVICES

SID has an operating budget of approximately $7 million. Along with joint venture operations (SSWA, DSWA, etc.) the budget is generally in the $14-16 million range. Between 2008 and 2012 SID has shown a surplus in four of the five years. In 2009 the surplus was due to the sale of water rights. In 2011 Power plant revenues decreased by $2.8 million due to the timing of the receipt of cash from PG&E to make the January principal payment on the Monticello Plant Project 2006 and 1986 Refunding Hydroelectric bonds. In 2010 the funds were received and recorded as revenue in December 2010; whereas; in 2011 the funds were received and recorded as revenue in January 2012.

SID provides potable water to several communities and sets rates specific to those areas. In some improvement districts, voter approved debt (like the construction of the Gibson Canyon Improvement District Water Treatment Plant) is repayed through special assessment applied through the property taxes.

In 2013 SID approved a rate increase to cover anticipated costs due to inflation, to replenish an operating reserve, and to begin to address costs of post-retirement benefits. The new rates allow SID to implement its financial plan so SID will have the financial resources to provide services.

STATUS AND OPPORTUNITIES FOR SHARED FACILTIES

Management and operational efficiencies are provided by cooperative arrangement with other agencies such as the Solano Water Authority. Additionally SID takes part in several other committees and agreements including:

- SID/Fairfield Water Services Agreement
- SID/Vacaville Master Water Agreement
- SID/Vallejo Agreement (exchange of water)
- SID/Main Prairie Water District Agreement (for coordinating Lake Berryessa water supplies)
- SID/County Agricultural Commissioner Agreement (for sharing shop space at SID yard)
- DSWA Joint Water Service in Dixon
- SSWA Joint Water Service in Suisun City

SID also partners with the City of Dixon and Suisun City for water delivery through a joint powers agreement. In addition SID participates in purchasing agreements with other local water treatment plants in order to obtain best pricing on chemical purchases, and it is in an insurance pool with the Association of California Water Agencies Joint Powers Insurance Authority.

GOVERNMENT STRUCTURE AND ACCOUNTABILITY

SID is governed by a five member board elected by division to four year staggered terms. The Board of Directors meets regularly on the third Tuesday of the month. Meetings are noticed in three local newspapers and posted on the District website. The District uses its website to communicate with ratepayers.

SID has 78 employees and 15 vacancies for a total staff of 93. Staffing is allocated according District functions.

LAFCO POLICIES AFFECTING SERVICE DELIVERY

Several of LAFCO's policies can affect SID's service delivery. They include the sphere policy which is applied to areas that the District would like to serve in the near term and long term. SID is often requested to provide services outside its boundary, so LAFCO's out of area service policy applies. LAFCO policy allowing detachment fees compensates SID for loss of revenues when an area is detached and annexed to a city.

3: DISTRICT PROFILE

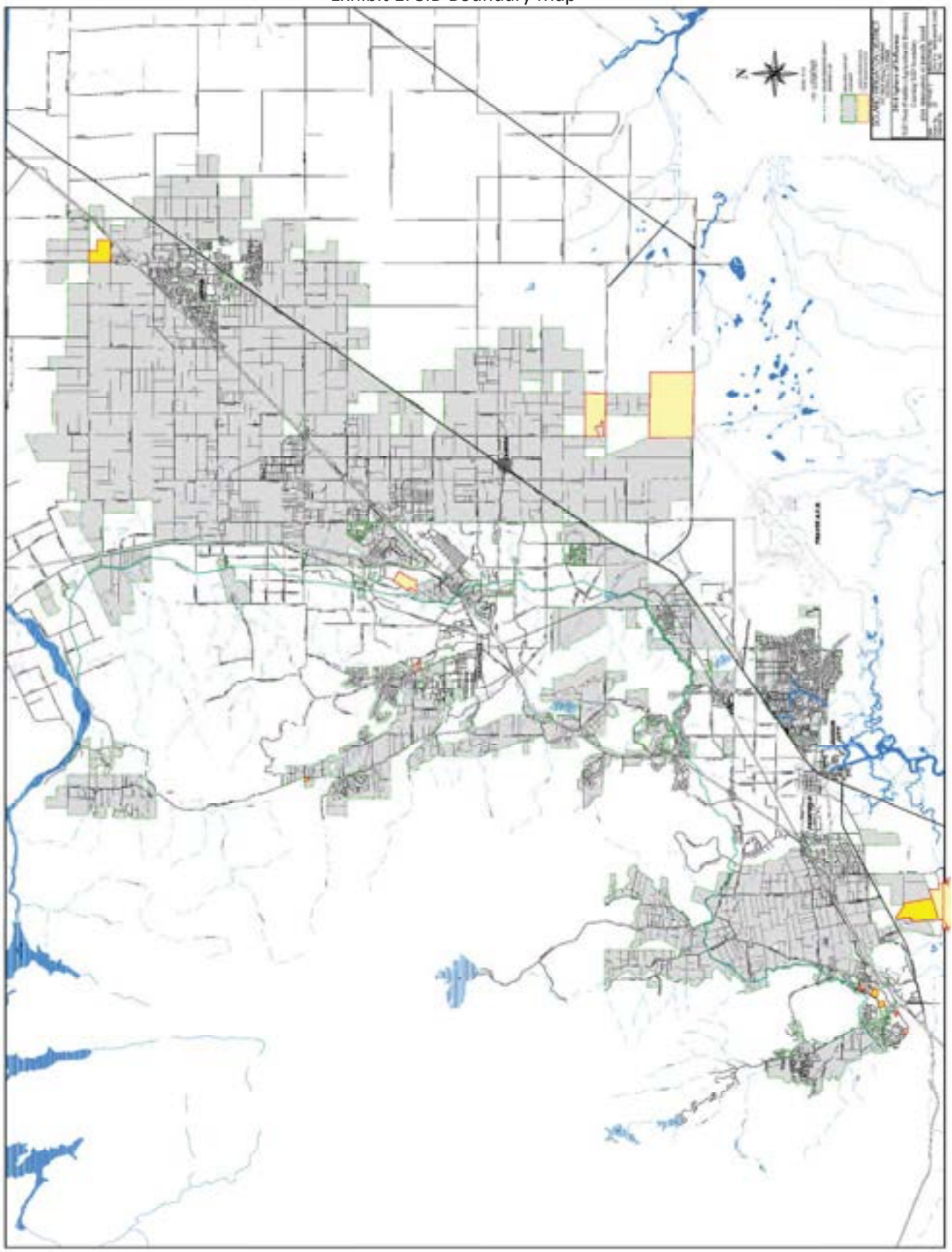
By definition, an irrigation district is a type of special district who have authority to sell and lease water, operate a sewage collection and disposal system, deliver water for fire protection, maintain recreational facilities in connections with dams and reservoirs or operate and sell electrical power. Irrigation districts operate under Section 20500 et seq. of the Water Code. There are nearly 92 irrigation districts in California. SID is the only irrigation district in Solano County.

The Solano Irrigation District was formed in 1948 under the California Water Code, Division 11. In all the service area covers approximately 73,000 acres. The District primarily serves agriculture as well as some municipal and industrial users. It provides irrigation water and potable water to approximately 11,000 retail customers including 10,000 potable water customers, and 1,000 non-potable water customers. Exhibit 1 shows the boundaries of the District and the proposed sphere.

Between 1948 and 1957, substantial efforts were made by the District and the County to provide water to Solano County. The water system, termed the Solano Project, included Monticello Dam, Lake Solano, Diversion Dam, the 33-mile long Putah South Canal (PSC), and Terminal Reservoir. The groundbreaking ceremony for the Monticello Dam, with a capacity of 1.6 Million acre feet, was held on September 25, 1953. Construction of the Solano Project was completed on November 7, 1957. All lands within the District boundary had water available by the spring of 1963.

In addition to the water system the District also generates electricity. In 1981 the District began construction of an 11.5 megawatt hydroelectric power plant at the base of the Monticello Dam. The plant was completed in 1983. SID maintains and operates the plant. PG&E purchases all the generated power.

Exhibit 1: SID Boundary Map



4: GROWTH AND POPULATION PROJECTIONS

The District through its operation of the Monticello Dam and Putah South Canal impacts approximately three quarters of the population of the County. However the number of people actually residing in the district is much smaller. We can estimate the population based on the number of connections and using a multiplier for persons per household. Table 4.1 shows how the estimated population of the district is approximately 37,000.

That estimate relies on several assumptions. While the number of accounts in the improvement districts is known, it is assumed they are primarily residential so the population is based on the County average of 2.83 persons per household. Elmira is a census designated place where actual persons per household is known and slightly lower. The persons per household values for Dixon and Suisun are based on the values within the city limits. It was also assumed that each irrigation account is tied to a residence so the estimated population for irrigation accounts is the total accounts multiplied by the County persons per household value. While not exact, the estimated District population should be reasonably close.

Much of the proposed sphere of influence is zoned commercial or agricultural. A few of the parcels are zoned ag-res and include one dwelling unit. There are four parcels which include a residence. Using the County estimate of persons per household the proposed sphere is likely to include 10 residents.

Table 4-1: Estimated Population of SID

Area	Connections	PPH	Est. Population
Elmira ID	86	2.21	190
Quail Canyon ID	37	2.83	105
Stocking Ranch ID	6	2.83	17
Tolenas ID	180	2.83	509
Gibson Canyon ID	158	2.83	447
Peabody ID	19	2.83	54
Blue Ridge Oaks ID	20	2.83	57
Dixon-Solano Water Authority	2,563	3.13	8,031
Suisun-Solano Water Authority	8,000	3.15	25,178
Irrigation	897	2.83	2,486
Total			**37,073**

Source: CDOF 2013a, NBS 2012, The Reed Group Inc. 2012

According to the California Department of Finance the population in Solano County is expected to grow by 5% between 2015 and 2020. Since most of the SID territory is outside the cities the County growth rate is a good estimate of population growth in the District. Accordingly the population of the District would be expected to grow by 5% over the next five years to a population of approximately 38,900.

DETERMINATIONS:

4.1 While the population that benefits from services provided by the District approaches three quarters of the population of Solano County only approximately 37,000 people reside within the District boundaries and an estimated 10 residents live in the proposed SOI.

4.2 The population in Solano County is expected to increase by 5% over the next five years. Since most of the SID territory is outside the cities the anticipated County growth rate can be used to estimate growth in the District and proposed SOI. At 5% growth the District and proposed sphere would have approximately 38,900 residents by 2020.

5: DISADVANTAGED UNICORPORATED COMMUNITIES

The Commission is required to provide written determinations with respect to the location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence. The California Government Code Section 56033.5 defines a disadvantaged unincorporated community (DUC) as an inhabited territory (12 or more registered voters) with an annual median household income that is less than 80 percent of the statewide annual median household income.

In 2012, the median household income for the State was $61,400. The table below represents the 2012 median household incomes for all Census Designated Places (CDP) in Solano County. As shown in the Table, Elmira has the lowest median income at 84% of the State's value and still does not qualify as a DUC. The proposed sphere includes primarily agricultural lands and only four residences with 7 registered voters scattered throughout the sphere area. Therefore, there are no DUC's adjacent to SID boundaries or in the proposed SOI.

Table 5.1: Solano County CDP 2012 Household Income

Solano County CDP	Median Household Income	% of State's Median Household Income ($61,400)
Allendale CDP	$89,984	147%
Elmira CDP	$52,125	84%
Green Valley CDP	$139,474	227%
Hartley CDP	$100,123	163%

Source: CDOF 2013c

DETERMINATIONS:

5.1 There are no disadvantaged unincorporated communities adjacent to the boundaries of SID or in the proposed SOI.

6: PRESENT AND PLANNED CAPACITY OF PUBLIC FACILITIES

SID operates the Solano Project, which delivers Lake Berryessa water to four cities, the Maine Prairie Water District and other SID customers. The Solano Project includes the Monticello Dam, Putah Diversion Dam, and the PSC. SID operates and maintains these Solano Project facilities on behalf of Solano County Water Agency. Lake Berryessa has the ability to store 1,600,000 acre-feet of water. SID provides irrigation water from surface waters but also has its own wells that supplement its surface-water supply from the Solano Project.

SID also owns and operates the hydroelectric power plant located at the base of Monticello dam. The power plant was built in 1983 and has three generators with a combined capacity of 11,500 kilowatts. SID sells electrical power to PG&E and provides additional electricity to Northern California.

6.1 Water Supply, Demand, and Allocation Agreements

SID has an allocated surface water supply from the Solano Project for 141,000 acre feet per year. With the addition of groundwater supplies SID has available an average annual water supply of approximately 146,000 acre feet. Fully utilizing historic capacity of wells would result in a supply potential of 155,000 acre feet.

The Solano Irrigation District's primary water demand is the agricultural water necessary to produce the crops grown within the SID service area. In addition to this demand SID provides municipal and industrial (M&I) and non-potable water supplies to some rural developments within its service area. When land use changes and increased urbanization occur, M&I water demand increases. Historically, SID has entered into agreements with cities (Benicia, Fairfield, Suisun, and Vacaville) to augment the cities' supplies. The agreements provide for water transfers from SID to said cities. Depending upon the agreement, water may be held in trust for the city and available upon demand, or on an entitlement basis. If on an entitlement basis, the city is able to utilize said entitlement water as carryover storage if it is not used in the year allotted.

To confirm its agricultural water demand an agricultural water balance analysis for a 1991 – 2010 study period is under development by SID to guide development of a future agricultural water allocation policy. The preliminary analysis shows crop evapotranspiration of applied irrigation water (ETAW) or the portion of applied water actually consumed within SID has ranged from 57,000 to 91,000 acre-feet per year over a 1991 –2010 study period. Table 6.1 summarizes the normalized ETAW for the crops grown within SID. It summarizes by year, from the lowest to the highest, the annual applied water required to meet the evapotranspiration requirements for the agricultural acreage of the study period. This analysis included the weather data and cropping patterns experienced. The ETAW has significant variations which are dependent on changes in weather. This includes variations in precipitation, temperature, and winds which all affect the amount of water required for optimum crop production. The agricultural

water balance analysis shows variations in cropping patterns have occurred during the study period. Additional changes in the type of crops being planted and crop acreage can alter the crop water demands.

The review of projected agricultural water demands needs to consider ongoing improvements in water delivery efficiency. Water delivery losses in the SID distribution system and the on-farm delivery systems of individual farmers together with operational spills and the recovery and reuse of tailwater are all factors affecting the required quantity of SID water deliveries. SID has a rehabilitation and betterment program which continues to improve infrastructure which helps to reduce losses. This includes installing concrete lining in canals not originally lined to reduce seepage losses, automatic control gates, and Supervisory Control and Data Acquisition (SCADA) systems to better monitor operational spills and reduce unnecessary water supply losses. All potential, cost effective control measures to further reduce water losses and improve the efficiency of surface water deliveries are investigated. As the value of water increases, many farmers in SID are also making changes and improvements to their on-farm water delivery systems. This includes capturing and reusing agricultural tailwater return flows and installing new water delivery systems. Over the last five years SID has seen an increased number of farmers installing micro spray and drip irrigation systems on newly planted orchards. Continued technological improvement in water delivery efficiency will further reduce the water delivery needed to meet the annual SID ETAW. A current estimate of SID water supplies and water demands projected to 2034 is provided in Table 6.2.

TABLE 6.1 - Normalized Evapotranspiration of Applied Water (ETAW)
For SID Agricultural Acreage 1991-2010

Seasonal ET of Applied Water (ac-ft)						Representative Year
Corn	Grain	Other Annual	Pasture/ Hay	Tree/ Vine	Total	
4,219	4,215	14,946	24,562	9,031	56,974	1998
4,680	5,764	17,315	28,469	10,638	66,866	1995
4,865	5,404	17,271	30,792	11,364	69,695	1993
4,695	5,942	16,512	30,921	11,964	70,035	2010
4,956	5,840	17,858	31,038	11,162	70,854	2006
5,005	5,548	17,785	31,734	11,814	71,885	1996
4,853	5,970	17,490	31,640	12,039	71,993	2005
4,819	5,743	16,975	33,711	12,926	74,174	2000
5,177	6,420	18,905	32,438	11,380	74,320	1991
5,088	6,405	18,730	34,264	12,493	76,980	2003
5,031	6,192	17,795	36,109	13,569	78,696	2009
5,171	5,940	18,419	36,077	13,327	78,933	1992
4,929	6,544	18,187	36,691	14,095	80,445	1999
5,093	6,721	18,460	37,882	14,329	82,485	1994
5,259	6,739	18,703	38,888	14,449	84,039	2004
5,339	6,513	18,959	38,770	14,461	84,042	2001
5,088	6,919	18,170	40,132	15,606	85,914	2007
5,333	7,212	19,707	39,142	14,772	86,166	2008
5,452	7,244	19,793	40,235	15,397	88,121	2002
5,444	7,643	19,849	42,592	15,572	91,101	1997
				Average	77,186	

Source: Davids Engineering 2014

TABLE 6.2

SID Water Supplies and Water Demands

SID Water Supplies	Ag Water Balance Scenario Types [1] (Quantities in AF) A Minimum	B Average	C Maximum
1. Solano Project Allocation	141,000	141,000	141,000
2. Groundwater Pumping (Historic Minimum, Average, and Historic Maximum)	2,300	5,000	14,000
Estimated Range Total Water Supply (AF)	**143,300**	**146,000**	**155,000**

SID Water Demands

1. **Ag Water Demand** - The estimated range of SID Agricultural Water Demands is based on Water Balance Scenario Types, defined below in the footnotes.

SID ETAW for Water Scenario Types (AF)		
A	B	C
56,974 [2]	77,186 [3]	91,101 [4]

The ETAW are the in field crop water demands and do not include estimated distribution system losses and on-farm losses experienced in delivering and applying the irrigation water. These are estimated at 30.1% in the Water Balance Analysis. The estimated Water Deiliveries required to meet the Etaw are estimated by dividing the ETAW by 69.1%.

SID Estimated Range for Ag Water Demands (AF)	(82,452)	(111,702)	(131,839)
2. **SID Municipal & Industrial Demands (AF)**	(5,240)	(5,300)	(5,650)
3. **SID Supply Provided to Suisun-Solano Water Authority (AF)**	(2,400)	(3,150)	(3,900)
Estimated Range Total SID Water Demands (AF)	**(90,092)**	**(120,152)**	**(141,389)**

SID WATER SUPPLY CITY COMMITMENTS

1. **Vacaville Agreement**	(3,000)	(6,525)	(9,325)
2. **Fairfield Agreements**	(3,820)	(10,920)	(19,386)
3. **Benicia**	(2,000)	(2,000)	(2,000)
Estimated Range SID Water Supply City Commitments (AF)	**(8,820)**	**(19,445)**	**(30,711)**

[1] The Water Scenario Types were developed by Davids Engineering and SID during a recent District Water Balance Analysis. For Water Supply and Demands, "Minimum" refers to the minimum supply or demand available or required during the period of record, the "Average" refers to the average supply or demand over the period of record, and the "Maximum" represents the maximum supply or demand anticipated in the future through 2034.

[2] The Minimum Normalized ETAW experienced from 1991 - 2010. See Table 6.1.

[3] The Average Normalized ETAW calculated between 1991 - 2010. See Table 6.1.

[4] The Maximum Normalized ETAW experienced from 1991 - 2010. See Table 6.1.

Source: Summers Engineering 2014

The tabulated data for water delivered to cities shows a minimum demand (today's contractual amount to supply, not waters held in trust), a maximum demand (maximum water required to deliver by contract in year 2034), and an average demand (an average of the minimum and maximum based on water entitled and held in trust). These various demands are shown to illustrate the use of carryover water that is stored in Lake Berryessa.

SID receives 100 percent of its surface water from Lake Berryessa. Groundwater for domestic consumption comes from wells in Elmira, Quail Canyon, Stocking Ranch, and five wells in the Dixon-Solano Water Authority area. Additionally, SID maintains 29 agricultural wells.

SID also provides domestic-water service to several areas of the unincorporated county, along with the cities of Vallejo, Suisun City, and Vacaville. The District provides potable water service to Dixon-Solano Water Authority, Suisun Solano Water Authority, Elmira, Quail Canyon, Blue Ridge Oaks, Peabody Road commercial area, Gibson Canyon, Stocking Ranch, and, Pleasant Hills Ranch Estates. In addition, agricultural water is provided to Elmira, Vaca Valley, Pleasants Valley, Suisun Valley and the Dixon area. Non-potable water for utilization in landscaping is provided to Tolenas, Green Valley, and businesses and industry located in the Green Valley, Fairfield, Cordelia, and Vacaville areas. At present, two capital improvement projects are planned for potable water systems. The first, contingent upon the outcome of Proposition 50 grant funding, is a water treatment plant to provide potable water to the Pleasant Hills Ranch Estates development. The other is the replacement of the membranes at the Gibson Canyon Water Treatment Plant.

The District is also operating under a compliance agreement with the California Department of Public Health for various non-public water systems scattered throughout the District. Approximately 114 of these types of customers exist. The non-public customers have an old Point Of Entry (POE) treatment devices that, prior to the surface water treatment rule changes in the mid 1990's, sufficiently treated raw water for use as potable water. As an interim measure, a compliance agreement was executed. The Compliance Agreement allows for bottled water to be consumed for cooking and drinking inside the home, with no new growth allowed. The SID continues to investigate options to provide potable water to these users that are scattered throughout the District boundary.

In addition to serving its own service area, SID has various water supply and exchange agreements with other Solano County agencies.

Suisun-Solano Water Authority

The City of Suisun and SID entered into a Joint Powers Authority (JPA) Agreement in 1988, referred to as the Suisun-Solano Water Authority (SSWA), and fully implemented in 1991. Under the SSWA, SID operates a water treatment plant to treat water on Suisun's behalf. That water treatment plant treats Suisun's 1,600 AFY of contracted Solano Project waters and delivers it to the service area for distribution.

Maine Prairie Water District Exchange

SID has a short term (five years) Irrigation Tail Water Exchange Agreement with Maine Prairie Water District (MPWD), to exchange and provide Solano Project water based on several tiers of supply.

Vallejo Exchange

SID maintains a service exchange agreement with the City of Vallejo in which Vallejo provides raw water service to Tolenas, within SID's service area, and in exchange, SID delivers an equal amount of raw water to Vallejo's Green Valley Treatment Plant.

Benicia, MPWD Purchases

SID provides 2,000 AF to the City of Benicia through a purchase agreement. Previously, the City of Benicia has negotiated informal purchases with SID for Solano Project (SP) water to augment supplies. Such purchases usually occurred during the winter months or when water from the North Bay Aqueduct was unavailable.

Fairfield Agreements

Amendment No. 2, executed in 2002, to an agreement between SID and Fairfield entered into in 1974 adds Fairfield-Suisun Sewer District (FSSD) as a party and re-titles the agreement the "Second Amended Agreement." The Second Amended Agreement provides Fairfield with up to 7,000 AFY of "1974 common boundary SP water" deemed necessary and sufficient to serve all lands that were in the 1974 common boundaries of SID and Fairfield (including, most notably, the Anheuser-Busch brewery). This amount represents a 1,000-AFY increase over the 1974 agreement. The 1974 agreement and Second Amended Agreement also provide Fairfield with up to 9,018 AF of "pre-1974 option SP water" annually, based on lands that had been in SID prior to 1974 but had detached upon annexing to the City. The total amount of SP water available to Fairfield from the Second Amended Agreement is 16,018 AFY. Fairfield and SID entered a joint exercise of powers agreement (JPA) in 1987 that established a basis for SID to provide the water to serve lands within the common boundaries of the two agencies not covered under the 1974 agreement (now the Second Amended Agreement). Water service under this JPA is typically supplied by dual systems, potable water from Fairfield, and non-potable water from SID. All raw water is supplied by SID or reimbursed to Fairfield. Water supplies are provided under separate "water service sub-agreements" pursuant to the JPA. Since 1987, the two agencies have entered three water service sub-agreements. The three sub-agreements provide a minimum of 1 AFY of raw water per acre or actual quantity reimbursement to Fairfield from SID for potable water served to lands specified. The current total acreage specified is approximately 450 acres. In addition, SID provides direct irrigation water service to a limited number of properties within the Fairfield city limits outside of any agreements between the two agencies. In addition, SID provides water directly to a small number of irrigation customers within the Fairfield city limits based on service that existed prior to the property being

annexed into Fairfield (e.g., Vanden High School, Fairfield High School, Busch Properties) or under subsequent outside-district water service agreements (e.g., B. Gale Wilson Elementary School, historic Waterman ranch). The supplies provided under the 1987 JPA are technically to meet SID demands. The majority of this water is held in trust for the City of Fairfield.

Vacaville Agreement

The 1995 Master Water Agreement between SID and Vacaville provides SP water to Vacaville from SID. The delivery schedule started at 1,000 AFY in 1995 and, based on the second amendment executed in 2010, increases incrementally to a maximum of 10,050 AF in 2040. The agreement expires in 2045.

Dixon-Solano Water Authority

In 1984, Dixon-Solano Municipal Water Service (DSMWS) was established through a JPA between Dixon and Solano Irrigation District. In 2010, Dixon and SID entered into a Joint Powers Authority (JPA) Agreement, referred to as the Dixon-Solano Water Authority (DSWA). DSWA currently serves approximately 1,800 customers from a well network consisting of four wells ranging from 800 to 1,500 feet below the ground surface. The DSWA service area is within SID's service area. The City of Dixon will be terminating the JPA effective in August 2014 at which time, Dixon will either operate it themselves or hire a firm to operate the current DSWA water system.

6.2 Groundwater

SID also uses groundwater conjunctively with surface water supplies. SID has a groundwater well network consisting of 32 wells ranging from 400 to 1,800 feet below the ground surface. Groundwater is primarily used to supplement irrigation demands in areas constrained by conveyance capacity for surface water deliveries. The historical yield of the groundwater system is 14,000 AFY.

6.3 Comparison of Water Supply, Demand and Remaining Supplies

Table 6.3 summarizes the SID water supply and the SID water demands presented in Table 6.2, but also lists the Water Supplies Remaining for SID under the three different agricultural water balance scenarios reviewed by SID. Due to historic variations in the SID evapotranspiration of applied water occurring from year to year (see Table 6.1), Table 6.3 presents Remaining SID Water Supplies for a year with an estimated Minimum agricultural water demand, a year with an estimated average water demand, and a year when the agricultural and M&I demands are at the maximum they have ever been or are projected to be in the future (year 2034). This maximum year presents the maximum normalized agricultural water demand which occurred in 1997 during the 1991 – 2010 study period. This year was a wet year and 1995, and 1996 were also wet years. In 1997 Lake Berryessa was full and water was available. Farmers wanting a double crop had the opportunity to do so, and in 1997 many of them did, thus

maximizing SID's cropped acreage and the ETAW water requirements. The likelihood of this demand being needed or required in the future is also less because of reductions in the SID agricultural acreage.

In years when demand will exceed supply (and no carryover water is available), SID has the means within its Rules and Regulations to implement an allocation policy to limit the amount of water supplied (or allocated) to each user. Further, by managing its carryover supplies in Lake Berryessa (Solano Project entitlement waters that are not used in one year are carried over to the next and are cumulative until Lake Berryessa spills), SID has the ability to meet demands in years the demand will exceed supply. SID has proven this ability over the last 50+ years with only one year (1991) when SID implemented a water shortage allocation program to conserve water and provide a supplemental urban water supply to help Solano Project urban water users meet their demands during a water shortage. Based on the proposed Sphere of influence and the data provided in Table 6.1, the average annual demand results in approximately 3,500 AF. Of what?

TABLE 6.3

SID Water Supplies, Water Demands & Remaining Supplies

SID Water Supplies	Ag Water Balance Scenario Types [1] (Quantities in AF) A Minimum	B Average	C Maximum
Estimated Range Total Water Supply (AF)	143,300	146,000	155,000
SID Water Demands			
Estimated Range Total SID Water Demands (AF)	(90,092)	(120,152)	(141,389)
SID WATER SUPPLY CITY COMMITMENTS			
Estimated Range SID Water Supply City Commitments (AF)	(8,820)	(19,445)	(30,711)
SID Remaining Water Supply (AF)			
(= Total Water Supply - SID Demands - City Commitments)	**44,388**	**6,403**	**-17,100**

[1] The Water Scenario Types were developed by Davids Engineering and SID during a recent District Water Balance Analysis. For Water Supply and Demands, "Minimum" refers to the minimum supply or demand available during the period of record, the "Average" refers to the average supply or demand over the period of record, and the "Maximum" represents the maximum supply or demand anticipated in the future through 2034.

Source: Summers Engineering 2014

The District, in conjunction with the other water agencies as part of the Solano Project agreement, has a drought plan in place called the Solano Project (SP) Drought Measures Agreement. In drought years, SID and MPWD will share water allotments with the cities covered by the SP agreement. The allotment for each agency is reduced as shown in Table 6-4.

Table 6-4: Solano Project Drought Measures Agreement

SP Storage (acre-feet)	Date	Action
800,000 or less	December 1	Develop Drought Contingency Plan
1.1 million	April 1	Drop plan
550,000 to 800,000	April 1	Parties forgo at least 5% of entitlement
450,000 to 550,000	April 1	Parties forgo at least 10% of entitlement

Source: SP 1999

DETERMINATIONS:

6.1 The District has the capacity to provide water to current customers.

6.2 The District has an average annual excess capacity of 6,400 AF and it is likely the District has sufficient capacity to serve those areas in the proposed Sphere of Influence.

7: FINANCIAL ABILITY TO PROVIDE SERVICES

The SID fiscal year begins on January 1 and ends on December 31. In December 2012 SID adopted an operating budget of $6.67 million for fiscal year 2013. Sales of agricultural water accounted for 39% of the revenues and standby charges 14%. Other major sources of operating revenues came from city water transfers 10%, property tax 9%, the power plant, municipal and industrial, and other assessments with 7% each, and Fairfield Water with 6%. In addition to operating revenues they also receive non-operating revenues primarily from agreements with other entities such as Suisun-Solano Water Authority and Dixon-Solano Water Authority, the power plant at Monticello Reservoir.

Table 7.1 summarizes revenues and expenses for the five year period 2008-2012. The Table shows, when including joint venture operations (SSWA, DSWA, etc.) that total revenues are generally in the $14-16 million range. The major differences occurred in 2009 and 2011.

Table 7-1: Solano Irrigation District Revenues and Expenses 2008-2012

Year	Operating Revenues	Non-Operating Revenues	Total Revenues	Operating Expenses	Non-Operating Expenses	Total Expenses	Net
2008	$4,808,992	$13,040,584	**$17,849,576**	$16,382,297	$983,427	**$17,365,724**	**$483,852**
2009	$14,849,935	$13,301,800	**$28,151,735**	$15,834,781	$980,815	**$16,815,596**	**$11,336,139**
2010	$5,338,294	$11,439,654	**$16,777,948**	$15,287,619	$1,301,470	**$16,589,089**	**$188,859**
2011	$5,634,641	$8,658,118	**$14,292,759**	$16,047,668	$2,499,055	**$18,546,723**	**$-4,253,964**
2012	$5,362,987	$11,496,296	**$16,859,283**	$13,843,347	$844,849	**$14,688,196**	**$2,171,087**

Source: Maze & Associates 2010, 2012, 2013.

In 2009, revenues included a onetime receipt of $10.0 million associated with the execution of an agreement to supply 4,000 acre feet of water to the cities of Fairfield and Benicia. The $10.0 million was used, in part, to facilitate the purchase of the new office space, the warehouse, and the associated vacant land.

In 2011 power plant revenues decreased by $2.8 million due to the timing of the receipt of cash from PG&E to make the January principal payment on the Monticello Plant Project 2006 and 1986 Refunding Hydroelectric bonds. In 2010 the funds were received and recorded as revenue in December 2010; whereas; in 2011 the funds were received and recorded as revenue in January 2012.

For fiscal year ending December 31, 2012, the last audited financial statements, the District has a total debt of approximately $19.3 million. The District generally incurs long-term debt to finance projects or purchase assets. The majority of the District's debt, approximately $16.8 million, can be attributed to the Monticello Power Project 1986 Refunding Hydroelectric Revenue Bonds. SID also has Improvement Districts which account for approximately $3.8 million of their long term debt obligations. The Improvement Districts are highlighted in Table 7-2 below. The remaining long term debts include Economic Development Administration, for which the funds are used for the acquisition, construction, and completion of improvements to the District's water system. Additionally, the District has a copier capital lease contract that is due in January 2014.

Table 7-2: Solano Irrigation District Improvement Districts Debt Service

Improvement District	Date Entered Into Contract	Original Issue Amount	Due Date	Balance as of Dec 31, 2012
Elmira ID	Jan 2004	$416,325	4-1-2014	$38,380
Gibson Canyon ID	June 2000	$2,127,300	1-1-2024	$1,390,274
Blue Ridge ID	January 2004	$866,000	2025	$646,801
Peabody ID	January 2004	$386,000	2025	$270,774

Source: Maze & Associates 2013.

In 2012 the District initiated a rate study to evaluate the District's financial needs and trends. Some of the needs were determined by the District's financial plan assumptions. They include 2.6% inflation, a 50% reserve in 3 years, negligible interest income, the present customer base and demand as representative of the future, the sale of excess property, and funding for post-employment retirement benefits. Other key factors were loss of revenue, limits on use of revenues, funding sources, and controllable revenue. Considering all these factors, the study recommended a minimum annual increase of 9-10% starting in 2013 and continuing every year until 2021. On February 19, 2013 the District's Board approved a 9% increase to their water rate charges. Table 7-3 shows the rates for 2013 and 2014.

Table 7-3 Water Rates Effective 2013

Account Type	2013 Rates	2014 Rates
Agricultural ($/AF)		
Ag Water – Gravity	$23.34	$25.44
Ag Water – Lifted	$38.90	$42.40
Deepwell	$58.53	$63.80
Stockwater (to 30 head) ($/yr)	$46.68	$50.89
Stockwater (> 30 head) ($/yr)	$58.36	$63.61
Rotational Delivery - Gravity ($/acre)	$74.71	$81.43
Rotational Delivery - Lifted ($/acre)	$124.49	$135.69
M&I Non Potable ($/CCF)		
Raw	$0.38	$0.42
Filtered	$0.39	$0.43
Filtered & Chlorinated	$0.46	$0.50
Public Agencies	$0.55	$0.59
M&I Potable/Public Water Systems ($/CCF)		
Stocking Ranch	$10.37	$11.30
Blue Ridge Oaks	$8.21	$8.95
Peabody	$7.41	$8.08
Quail Canyon	$1.46	$1.59
Gibson Canyon	$1.42	$1.54
Elmira	$1.31	$1.43
Tolenas	$0.52	$0.57
Source: SID 2013b		

DETERMINATIONS:

7.1 SID has an operating budget of approximately $7 million. Along with joint venture operations the budget is generally in the $14-16 million range.

7.2 Between 2008 and 2012 SID has shown a surplus in four of the five years. In 2009 the surplus was due to the sale of water rights to the Cities of Fairfield and Benicia. In 2011 there was a

shortfall of $4 million due to a late payment by PGE and the cost to demolish the Elmira headquarters building.

7.3 SID provides potable water to several communities and creates an improvement district to set rates specific to those areas. The rates allow for the repayment of debt incurred to provide that service.

7.4 In 2013 SID approved a rate increase to cover anticipated costs due to inflation, replenish an operating reserve, and begin to save toward the costs of post-retirement benefits. The new rates allow SID to implement its financial plan so SID will have the financial sufficient resources to provide services.

8: STATUS AND OPPORTUNITIES FOR SHARED FACILITIES

Management and operational efficiencies are provided by cooperative arrangement with other agencies. These arrangements are provided by the following:

- Solano Water Authority (for which an SID representative serves as Secretary and Treasurer)
- Solano Project Task Force
- Noonan Reservoir Task Force
- Imported Water Supply Task Force
- Coordinated Groundwater Data Analysis Task Force

Additionally SID takes part in several other committees and agreements including:

- Solano County Agricultural Water Management Committee
- Solano Water Education Committee
- SID/Fairfield Water Services Agreement
- SID/Vacaville Master Water Agreement
- SID/Vallejo Agreement (exchange of water)
- SID/Maine Prairie Water District Agreement (for coordinating Lake Berryessa water supplies)
- SID/County Agricultural Commissioner Agreement (for sharing shop space at SID yard)
- DSWA Joint Water Service in Dixon
- SSWA Joint Water Service in Suisun City
- SID/RCD Agreement regarding drainage management
- SCWA/SID Agreement for operation and maintenance of the Solano Project (LAFCO Part II)

The SID also partners with the City of Dixon and Suisun City for water delivery through a joint powers agreement. The SID also participates in purchasing agreements with other local water treatment plants in order to obtain best pricing on chemical purchases, and it is in an insurance pool with the Association of California Water Agencies Joint Powers Insurance Authority. However, the City of Dixon, in August 2012, voted to dissolve the DSWA JPA. This dissolution will become effective in August 2014.

DETERMINATIONS:

8.1 The District works cooperatively with other municipal agencies and shares facilities with a number of local agencies.

9: GOVERNMENT STRUCTURE AND ACCOUNTABILITY

The SID has five elected members on its Board of Directors. The District is divided into five divisions, and each board member is elected by division to a 4-year term. Board meetings take place at the SID Board Room located at 810 Vaca Valley Parkway in Vacaville on the third Tuesday of every month at 7 p.m. Board Meetings are noticed in three local newspapers and posted at the SID Board Room. The district maintains a website located at http://www.sidwater.org. The website allows the District to communicate with its residents. It includes meeting agendas, information on water quality, irrigation, reports, and key links.

Exhibit 2 shows the agency's organizational chart. SID has 78 employees of which six are executives or management. Most employees are under the Water and Power Operations Manager in the Water and Power Division. Staffing is allocated according to the District functions which include potable water, irrigation water, and the Solano Project. The exhibit also shows there are 15 vacant positions.

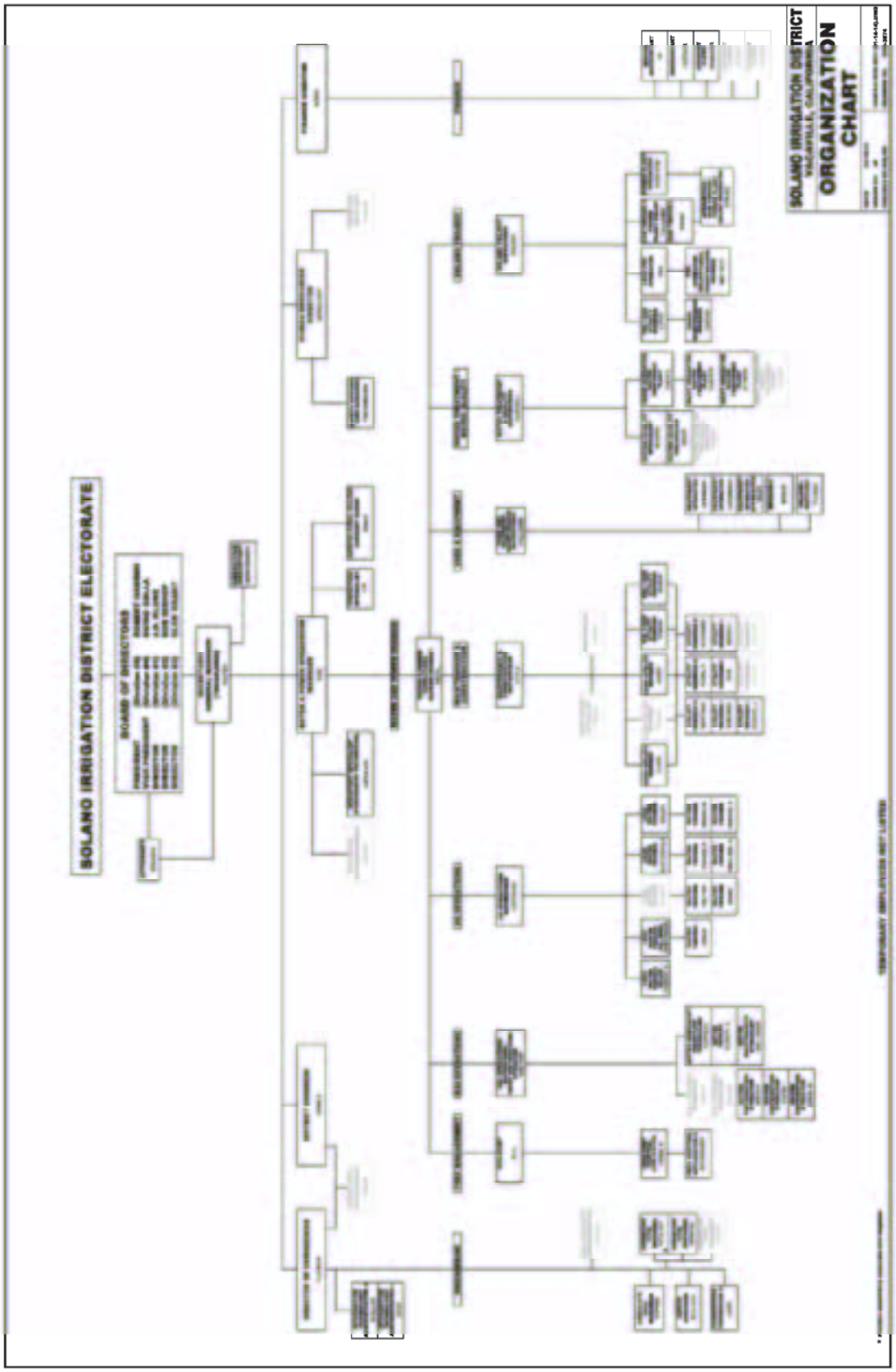
DETERMINATIONS:

9.1 SID is governed by a five member board elected by division to four year staggered terms.

9.2 The Board of Directors meets regularly on the third Tuesday of the month. Meetings are noticed in three local newspapers and posted on the District website. The District uses its website to communicate with ratepayers.

9.3 SID has 78 employees and 15 vacancies for a total staff of 93. Staffing is allocated according District functions.

Exhibit 2: SID Organizational Chart



10: LAFCO POLICIES AFFECTING SERVICE DELIVERY

Several of LAFCO's policies may affect the operation of the District. As the District updates and amends its sphere of influence the revised LAFCO sphere policy will guide the process. The new sphere policy allows for near term and long term spheres, where the near term sphere includes territory that will be proposed for annexation in the next five years. The long term sphere is designed to include territory that will be served in the next 5 to 20 years.

In the past SID has received many requests for out of area services. Government Code Section 56133 in CKH describes the conditions that LAFCO may allow out of area services. Generally out of area services are permitted if the subject territory is within the sphere and annexation is imminent. An exception is for health and safety issues. LAFCO policies identify conditions under which qualify as a health and safety issue. For example a contaminated water source or a well that does not produce adequate water supply would meet the requirements. As a purveyor of water SID is often requested to provide out of area services on just such occasions.

Often when an area is developed it is detached from SID since the District was only providing irrigation water. LAFCO has permitted SID to adopt a detachment fee schedule which can be imposed as a condition of annexation. The detachment fee is intended to compensate SID for revenue losses. The fee was established in 1985 and should be reviewed.

Determination:

10.1 Several of LAFCO's policies can affect SID's service delivery. They include the sphere policy which is applied to areas that the District would like to serve in the near term and long term.

10.2 SID is often requested to provide services outside its boundary so LAFCO's out of area service policy applies.

10.3 LAFCO policy allowing detachment fees intended to compensate SID for loss of revenues and increases in expenses when an area is detached and annexed to a city. The fee was established in 1985 and should be reviewed.

11: SUMMARY OF DETERMINATIONS

4.1 While the population that benefits from services provided by the District approaches three quarters of the population of Solano County only approximately 37,000 people reside within the District boundaries and an estimated 10 residents live in the proposed SOI.

4.2 The population in Solano County is expected to increase by 5% over the next five years. Since most of the SID territory is outside the cities the anticipated County growth rate can be used to estimate growth in the District and proposed SOI. At 5% growth the District and proposed sphere would have approximately 38,900 residents by 2020.

5.1 There are no disadvantaged unincorporated communities adjacent to the boundaries of SID or in the proposed SOI.

6.1 The District has the capacity to provide water to current customers.

6.2 The District has an average annual excess capacity of 6,400 AF and it is likely the District has sufficient capacity to serve those areas in the proposed Sphere of Influence.

7.1 SID has an operating budget of approximately $7 million. Along with joint venture operations the budget is generally in the $14-16 million range.

7.2 Between 2008 and 2012 SID has shown a surplus in four of the five years. In 2009 the surplus was due to the sale of water rights to the Cities of Fairfield and Benicia. In 2011 there was a shortfall of $4 million due to a late payment by PGE and the cost to demolish the Elmira headquarters building.

7.3 SID provides potable water to several communities and sets rates specific to those areas. SID provides potable water to several communities and creates an improvement district to set rates specific to those areas. The rates allow for the repayment of debt incurred to provide that service.

7.4 In 2013 SID approved a rate increase to cover anticipated costs due to inflation, establish an operating reserve, and the costs of post-retirement benefits. The new rates allow SID to implement its financial plan so SID will have sufficient financial resources to provide services.

8.1 The District works cooperatively with other municipal agencies and shares facilities with a number of local agencies.

9.1 SID is governed by a five member board elected by division to four year staggered terms.

9.2 The Board of Directors meets regularly on the third Tuesday of the month. Meetings are noticed in three local newspapers and posted on the District website. The District uses its website to communicate with ratepayers.

9.3 SID has 78 employees and 15 vacancies for a total staff of 93. Staffing is allocated according District functions.

10.1 Several of LAFCO's policies can affect SID's service delivery. They include the sphere policy which is applied to areas that the District would like to serve in the near term and long term.

10.2 SID is often requested to provide services outside its boundary so LAFCO's out of area service policy applies.

10.3 LAFCO policy allowing detachment fees intended to compensate SID for loss of revenues and increases in expenses when an area is detached and annexed to a city. The fee was established in 1985 and should be reviewed.

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Appendix A: Comments Received

Pleasant Hills Ranch Estates (PHRE) Potable Water System

History, Health and Financial Concerns, Proposals, Involved Parties

JM Report dated 2/27/2014

This report was prepared by James May, P.E. and PHRE Property Owner and was sent to all listed parties. Comments are requested from all: Phone 970-240-1155, Email JimMxx1@gmail.com

Chronological Description of Events

- In 1976, 38 years ago, the Solano Irrigation District (SID) constructed a water system for the PHRE community, The land owners connected the untreated SID water to their Point-Of-Entry (POE) treatment devices to obtain potable water. This system now has acknowledged health risks under current laws. This system exists today in its original form.
- In 1989, the Surface Water Treatment Rule of the Safe Drinking Water Act provided stringent regulations for Public Water Systems.
- In 1998, the CA Dept of Public Health (CDPH) declared that the SID supplied water system was a Public Potable Water System.
- In 2004 CDPH/EPA identified the health risks and issued *Compliance Order #02-04-03CO-001.* California Health & Safety Code and Title 22 of the California Code of Regulations provide the legal requirements for potable water systems. These laws include the requirement that a system with more than 15 connections, must comply with the state and federal potable water quality standards.
- Since 2004, the Compliance Order has forced SID to investigate various plans, project possibilities, and funding options.
- As a temporary measure:
  - SID must supply bottled potable water to the 22 existing PHRE homeowners.
  - SID must notify the PHRE home owners that they, in party with SID, violate Title 22 of the California Code of Regulations.
  - New homes must be build with water wells and their SID supplied water is to be used only for irrigation purposes.
- In June 2005, CDPH required SID to publish the above agreement by way of Solano County Resolution #05-16. Subsequently, Solano County required that new building permits not be issued without CDPH approvals for potable water.
- In August/October 2007, 2 SID reports were prepared:
  - SID reported that the bottled water method is not cost effective.
  - SID investigated an option for a water treatment plant.
- In October 2007, Summers Engineering, commissioned by SID, published a Grant Funding Application Technical Report
- In 2008, SID received a $2M Proposition 50 grant commitment for the construction of a water treatment plant, but this commitment was frozen due to CA budgetary issues.
- On December 21, 2010, the SID board passed Resolution #10-66 to retain the grant funding eligibility and to give them time to formulate a conformance plan:

  - SID requested a CA State Revolving Fund (SRF) low interest loan for the construction of a treatment plant, but the loan was denied because of high treatment plant O&M.
- In July 2011, SID sent CDPH a letter describing a treatment plant project that SID could deliver using the $2M grant.
- In November 2013, CDPH notified SID that to receive the $2M grant, a funding agreement must be in place by June 2014.
- In January 2014, the local CDPH office approved the SID treatment plant project.
- The recent 2/18/2014 SID Board Meeting notes describe much of the above history and current situation. In addition, SID notified PHRE residents that the SID proposed plan includes:
  - A $2M treatment plant, with its design and construction to be paid from the Safe Drinking Water State Revolving Fund.
  - All on-going expenses to be paid by the PHRE community users. SID estimated O&M expenses at $7000/month, and this does not include the following:
    On-going filter replacements and other O&M expenses.
    Capital recovery for the treatment plant costs above the $2M estimate.
    Future treatment plant rehabilitation.
    Water usage charges

  http://ca-sid.civicplus.com/AgendaCenter/ViewFile/Agenda/02182014-95
- By sometime in March 2014, CDPH expects to complete their review of CEQA compliance and financial aspects of the proposed project.
- By April 2014, CDPH expects the SID board to sign the funding agreement and approve the treatment plant project. SID would then have 3 years to complete the water treatment plant project.

Health and Financial Concerns

Open-Ended Non-Compliance Health Situation

The current SID proposal includes an option to withdraw their proposal if they decides, after bids are received, that its costs are too high. SID indicated that there is no time limit for conformance, and only that due diligence is required. Now after 10 years of non-compliance, due diligence seems to suggest that mandatory compliance steps should be put in place. Otherwise the existing health issues might persist for many more years. CDPH with EPA assistance are hereby requested to put mandatory compliance steps in place.

Proposed Water Rates - Negative Financial Impact

Currently there are 22 homes that the proposed treatment plant might serve. This SID proposal details a water rate structure to PHRE homeowners:

- $321 per month per homeowner for operation and maintenance of a small treatment plant (SID estimate).
- Future treatment plant rehabilitation expenses

- Labor costs
- Water usage
- Other expenses not yet identified

This proposed water rate structure translates to an estimated $400 per month to each existing homeowner. This can be compare to about $100 per month that other homeowners in the same Vacaville community are charged for their water. Such a large cost differential would encourage existing homeowners to leave PHRE, and would discourage new home seekers from coming to PHRE. This SID proposed project would create a negative impact on PHRE property values.

This SID proposal, if acted upon, could be interpreted as a terrible disservice to PHRE residents. Such action can be viewed as a fleece to the community by imposing unreasonably high water rates compared to what other Vacaville residents enjoy.

Treatment Plant Investment Risk

The health situation and the large financial burden that the SID proposal puts on residents has already encouraged 2 residents to install their own water wells which have estimated costs of $20,000 each. Residents that have their own water wells can then disconnect from the SID system. Eventually, the proposed $2M treatment plant might be abandoned.

Reasonable Proposals

SID is hereby requested to detail to the PHRE land owners, Net Present Worth economic comparisons, including its calculations for the following:

1. Current proposal for a treatment plant
2. City of Vacaville water main extension
3. Common Water well to serve the community

The comparisons of the 3 proposals, probably with a 30 year life cycle, should include:

1. Capital costs
2. Operation and maintenance (O&M) costs
3. Rehabilitation costs
4. Labor costs

Capacity for future population growth and subsequent water demand, as well as treatment plant and pipeline limitations, and the water rate structures should also be included in the comparisons.

The current treatment plant proposal as presented, apparently includes very little financial cost or risk to SID. The plant would be built with a $2M Proposition 50 grant commitment and all future expenses would be passed on to the property owners connected to the system. The estimated SID monthly water charge per PHRE resident is $400.

The City of Vacaville proposal would include a water main extension of approximately 2½ miles. Many water utilities have distribution systems that reach out 50 miles or more to serve their communities. The $2M grant money could be

directed to fund the pipeline cost. The City of Vacaville could recover their expenses thru their rate structure to PHRE residents. The estimated Vacaville monthly water charge per PHRE resident is $100.

Economic data for a water well proposal to serve PHRE is unknown.

In general, water utilities with large distribution systems have more cost effective operations than those utilities with small distribution systems. This is demonstrated by the lower rate structures that the larger utilities provide. Water authorities here in California, including SID, justify constructing and operating a lot of small systems. SID provides potable water to Dixon-Solano Municipal Water Service, Suisun Solano Water Authority, Elmira, Quail Canyon, Blue Ridge Oaks, Peabody Road commercial area, Gibson Canyon, and Stocking Ranch. This adds up to 8 small systems, and SID now proposes still another small system.

While water demands in rural areas justify smaller systems, PHRE is not in a rural area. It is only 2½ miles from the Vacaville system.

As can be easily examined thru data available on the Internet, California has very high water rates when compared to other areas in the United States. Compared to Chicago rates, California rates are 500% higher in some areas. Perhaps better long term planning and implementation with a different mindset could otherwise provide much more cost effective water systems for our California residents.

This is a very large and serious concern.

Involved Parties

The Code of Civil Procedures, under California State Law, allows every person or class, the right to file a lawsuit and to hold responsible parties liable for all costs, damages, and expenses.

Solano Irrigation District (SID)

- 2/24/2014 conversation with Paul Fuchslin, SID Engineering Manager, 707-455-4020. General Info (707) 448-6847**.** According to Paul, there is no stated or required time frame for SID to be in compliance with the Compliance Order issued about 10 years ago in 2004. I requested:
  1) 1976 PHRE agreement with SID
  2) 2004 CDPH/EPA Compliance Order #02-04-03CO-001
  3) I gave Paul my email address
- 2/26/2014 phone con with Paul Fuchslin
  I also requested a copy of all economic comparisons SID completed in the past.
  I obtained Paul's email address: PFuchslin@SIDWater.org

SID Board of Directors

This SID board self-regulates its water rate schedules. The board is requested to review the special potable water rate structure proposed with for PHRE by SID**.** **Glen Grant is the board chairman. A 2/27/2014 message was left with SID for Glen to call me.**

California Department of Public Health - CDPH

- 2/26 Phone con with Alla Lilichenko, Phone 510-620-3601.
  1) We discussed the situation regarding Compliance Order No. 02-04-03CO-001 issued in 2004, and the current SID proposal.
  2) I requested a copy of the current compliance order for my review. Alla will also sent me, a revised compliance order next week that is presently being completed.
  3) I will send Alla a copy of my report: Alla.Lilichenko@cdph.ca.gov and give her my contact information.
  4) I neglected to point out to Alla, 2 PHRE line items in CDPH's October 2013 SDWSRF Final Project Priority List for the system. One item is for a $2,000,000 treatment plant and the other for $463,000 for POE's. I would like an explanation for the $463,000.

EPA Region IX Water Division

- 2/24/2014 call to Jane Diamond, Director, Ph 415-972-3275
- 2/25/2014 Mike Montgomery 415-972-3438 returned my call. Mike will get back to me with further advise about who is a more appropriate EPA contact.

Solano County LAFCO

A copy of this report was sent to EMulberg@SolanoLAFCO.com, (Elliot) Phone 707-439-3897

Governor's Office of Planning and Research

A copy of this report was sent to Debbie.Davis@opr.ca.gov 916-322-0553
This office is directed by statute to prepare Guidelines that assist LAFCos in complying with the new requirements for municipal service reviews. For the subject project, SID is part of the Solano County LAFCO. Hopefully the OPR office can and will utilize the MSR process with regards to the health and financial concerns described in this report. Also, the OPR office may be able to provide specific recommendations to Solano County LAFCO in order to meet the subject CDPH and EPA compliance order.
The Municipal Service Review (MSR) Process provides comprehensive assessments of the ability of government agencies to ensure that high quality public services are provided to all Californians in the most efficient and effective manner.
LAFCos are the state-mandated quasi-judicial countywide Commissions whose purview is to oversee boundary changes of cities and special districts, the formation of new agencies, including the incorporation of new cities and districts, and the consolidation or reorganization of special districts and or cities.

Emails

6:38 AM Feb 20, 2014

Re: SID MSR
FROM Gordon Stankowski TO You + 1 More

SID has a water quality problem with 70 or so customers in Pleasants Valley, I don't see that addressed.

TFeFeb 27, 2014 at 2:17 PM

Pleasant Hills Ranch Estates (PHRE) Potable Water System *1*
From Jim
To PFuchslin@SIDWater.org Alla.Lilichenko@cdph.ca.gov EMulberg@SolanoLAFCO.com

Attached is a report I completed and which is about the health and financial concerns that the current SID proposal raises. This SID proposal is also described in the SID Board minutes of February 18th:
http://ca-sid.civicplus.com/AgendaCenter/ViewFile/Agenda/02182014-95

We will appreciate receiving comments from and to observe productive interactions between the parties involved.

Hopefully there is a better solution than what SID is currently proposing. We are hopeful for a solution that does not include a potentially bad capital investment in a treatment plant and that will not raise water rates an estimated **400%** when compared to what other Vacaville residents pay. I sense, especially for the long term, that more cost effective water services can be provided to us users.

Thank you for your considerations,
Jim May

Appendix B: Maps