

DRAFT Technical Memorandum 2: Review of Existing Information

Wholesale Water Management and Reliability Study

PREPARED FOR
SAN JUAN WATER DISTRICT



PREPARED BY



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INTRODUCTION

This Technical Memorandum (TM) is the second of a series of memoranda that will support improving management of surface water and groundwater resources within the San Juan Water District's (District or SJWD) wholesale service area, and potentially outside the District's current service area. It summarizes the compilation and review of existing information required for completing District's Wholesale Water Management and Reliability Study (Study).

The purposes of this TM are (1) to identify the data and information that will be needed to support evaluation, comparison, and prioritization of both the initial set of water management options (options) and the retained options, and (2) to assess the data and information that are readily available. This TM contains the following:

- Descriptions of the categories of data and information needed to support the Study
- Overview of the status and high-level assessment of the existing data and information
- Recommendations and next steps

As presented, TM 2 provides a list of the information identified, currently available, and retrieved at this point in the Study. Additional information needs may be identified throughout the course of the Study as potential water management options (options) are analyzed. This list of information and data sources will be updated throughout the Study as necessary.

Data and Information Categories

The purpose of this data review effort is to survey and collect available information to support evaluation of options to address the Study objectives. Key to these evaluations are the definition of existing and no action conditions, i.e., status quo option. The no action helps defines the scope of the problems to be addressed, and the related areas that could be influenced by possible actions taken to address the identified problems. It also provides the baseline against which to measure the performance of other considered options. In addition to defining the existing and no action conditions, the data identified in this TM will be used for formulation and screening of water management options, and to assess which options best address the evaluation criteria and metrics (documented in TM3). These evaluations will be documented in TM 4.

The categories of data and information that will be needed to support the Study evaluations include the following:

- **Water Rights and Contracts** – Includes details on the District's various surface water rights and contractual water entitlements. Also included are agreements which affect the District's water supply and water system, such as the Water Forum Agreement, City of Roseville agreement, and water diversion, treatment and conveyance agreement with

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Sacramento Suburban Water District, and agreements with the Wholesale Customer Agencies.

- **Surface Water Supplies** – Includes data on the District’s historical and projected surface water supplies and deliveries. Annual data of the District’s past surface water use, including deliveries to its wholesale and retail customers and others is included.
- **Groundwater Basin Conditions** – Includes information on groundwater basin conditions, including, but not limited to the following: historical and future availability, past groundwater use, groundwater levels, groundwater quality, aquifer characteristics, well logs, groundwater storage, groundwater contours, and location of major groundwater contamination plumes.
- **Recycled Water** – Includes information on the potential for using recycled water within the District. To date, the District does not use recycled water as a supply.
- **Water Conservation Measures** – Includes water conservation measures that are either already implemented or could be implemented to improve supply reliability during dry years.
- **Existing Infrastructure** – Includes details of the District’s existing surface water and groundwater infrastructure. Information includes sizes, capacities, and GIS locations of relevant infrastructure such as the Peterson water treatment plant, tanks, pipelines, wells, and interties with other agencies. This information provides an understanding of the existing conditions and a starting point for integrating potential options.
- **Water Demands** – Includes information of the District and potential regional partners related to both present and future demands, such as land use and future population growth.
- **General District Information** – Includes general information on the District such as sphere of influence and past budgets. This information could be used to confirm the viability of potential options.
- **Potential Water Management Options** – Provides information on specific options to be considered as part of the Study. This information is mainly provided on a general level and is not specific to the District; the ideas presented in these documents may be adapted to form various options.

Data and Information Index List

This section presents the status and high-level assessment of the existing data and information needed to support the Study. For each item, the database includes the category; title/subject; file format; author; source; dates requested and obtained (as applicable); brief description of its relevancy to the Study; and applicability to specific options.

Table 3-1. Existing Data and Information

ID	Title/Subject	Category	Data Type	Author (Date)	Source of Information	Date Requested	Date Received	Brief Description (Relevancy to Study)	Related Water Management Option ID(s)
1	Analysis of Water Rights and Contractual Entitlements of San Juan Water District	Water Rights and Contracts	PDF	Bartkiewicz, Kronick & Shanahan (2008)	http://www.sjwd.org	n/a	n/a	Legal review of SJWD's water rights and contracts - volume, source, and terms of use	TBD
2	Hydrogeologic Investigation - Potential for Groundwater Supply	Groundwater Basin Conditions, Existing Infrastructure	PDF, maps, well logs	GEI (2008)	http://www.sjwd.org	n/a	n/a	Summary of field work to assess if groundwater is viable within SJWD's boundary to support a municipal supply well. Determined GW well was possible. Looked groundwater levels, groundwater quality, aquifer characteristics. Provided preliminary well design & cost. PDF maps and well logs.	TBD
3	Sacramento Suburban Water District and San Juan Water District High-Level Feasibility Analysis for Water Supply Reliability	Surface Water Supplies, Potential Water Management Options	PDF	Municipal Consulting Group (2014)	http://www.sjwd.org	n/a	n/a	Investigated opportunities to maximize reliability of SSWD and SJWD's water supplies, including collaborative water management opportunities (no change, inter-agency agreements, consolidation).	TBD
4	Sacramento River Regional Water Reliability Project, Planning Phase I	Surface Water Supplies, Potential Water Management Options	PDF	West Yost (2015)	http://www.sjwd.org	n/a	n/a	Multi-agency project to provide additional flexibility in dry years to SJWD (supply reliability & diversity; operational flexibility). Project will divert water through existing intakes from the Sacramento River to offset water currently diverted from the American River.	TBD
5	Wholesale Master Plan Phase II	Surface Water Supplies, Existing Infrastructure	PDF, tables, graphs	Black & Veatch (2007)	http://www.sjwd.org	n/a	n/a	Assess SJWD's storage and transmission and develop a water supply plan: demands/level of service; plan for normal operations, plan for reduced surface water operations, and cost for additional required facilities.	TBD
6	2010 Urban Water Management Plan	Water Demands, Existing Infrastructure, Surface Water Supplies	PDF, tables	SJWD (2011)	http://www.sjwd.org	n/a	n/a	Plan describes facilities, demands, supplies, reliability, shortage contingency planning, and demand management measures.	TBD
7	Final Municipal Service Review and Sphere of Influence Update for San Juan Water District (LAFC 16-10)	General District Information	PDF, tables	n/a (2011)	http://www.sjwd.org	n/a	n/a	Formal letter of concurrence on SJWD's sphere of influence and growth. Includes tables of facilities and finances.	TBD
8	Fiscal Year 2015-2016 Budget	General District Information	PDF, tables	n/a (2015)	http://www.sjwd.org	n/a	n/a	Tables showing annual budgets for past several years	TBD
9	Member Agency Water Infrastructure Maps	Existing Infrastructure	PDF, GIS Files	West Yost (2014-2015)	RWA	n/a	n/a	Surface Water Diversion, storage and delivery information	TBD
10	Groundwater Management Plan, Sacramento County - North American	Groundwater Basin Conditions, Existing Infrastructure	PDF	SGA, 2014	http://www.sgah2o.org/sqa/files/GMP_SGA_2014_Final.pdf	n/a	n/a	Recharge areas, groundwater storage, available storage, management levels.	TBD
11	Basin Management Report Update 2013	Groundwater Basin Conditions	Excel files Groundwater Production, Figures	SGA, 2013	http://www.sgah2o.org/sqa/files/pub-bmreport-2013.pdf	n/a	n/a	Annual groundwater use by agency, location of major groundwater contamination plumes.	TBD

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ID	Title/Subject	Category	Data Type	Author (Date)	Source of Information	Date Requested	Date Received	Brief Description (Relevancy to Study)	Related Water Management Option ID(s)
12	Western Placer County Groundwater Management Plan	Groundwater Basin Conditions		MWH, 2007	https://www.pcwa.net/files/docs/enviro/WPCGMP_Groundwater_Management_Plan_07.pdf	n/a	n/a	Historic comparison of Groundwater Contours	TBD
13	Western Placer County Biennial State of Basin Report 2011 through 2012	Groundwater Basin Conditions	PDF and electronic files	GEI (2013)	GEI, files	n/a	n/a	Annual groundwater use by agency, groundwater recharge (ASR), location of major groundwater contamination plumes.	TBD
14	AB 32 Water-Energy Assessment, SMUD and RWA	Groundwater Basin Conditions, Existing Infrastructure	PDF and electronic files	GEI (2014)	GEI, files	n/a	n/a	Summary of Agency Facilities, number of wells, Groundwater/surface water use by agency.	TBD
15	Data Management System, SGA	Existing Infrastructure	Electronic files	GEI (2015)	GEI, files	n/a	n/a	Location of Municipal Water Supply wells, pumping capacity of wells to estimate ASR potential, well locations relative to SJWD main transmission pipeline	TBD
16	Western Placer County Groundwater Recharge Mapping and Water Quality Protection Program, Monitoring Well Construction and Testing Report	Groundwater Basin Conditions	PDF	GEI (2015)	GEI, files	n/a	n/a	Groundwater surface water interaction, potential spreading basin recharge area.	TBD
17	California's Groundwater Bulletin 118 Update 2003 Report.	Groundwater Basin Conditions	PDF	DWR, 2006	http://www.water.ca.gov/groundwater/bulletin118/index.cfm	n/a	n/a	North American River Subbasin general information.	TBD
18	Groundwater Information Center Interactive Map Application	Groundwater Basin Conditions	Electronic files	DWR, 2015	https://gis.water.ca.gov/app/gicima/	n/a	n/a	Groundwater contours Fall 2015, North American Groundwater Subbasin, and change in storage.	TBD
19	Western Placer County Groundwater Storage Study	Groundwater Basin Conditions	PDF	MWH (October 2005)	MWH and GEI files	n/a	n/a	Potential for groundwater recharge along major creeks, Placer County.	TBD
20	South Sutter Water District Water Management Plan	Groundwater Basin Conditions	PDF	MBK, 2003	http://www.water.ca.gov/wateruseefficiency/sb7/docs/2014/plans/FINAL%20SSWD%20WMP%2011%2025%2003.pdf	n/a	n/a	Annual groundwater and surface water use, potential for in-lieu water use.	TBD
21	South Sutter Water District Groundwater Management Plan	Groundwater Basin Conditions	PDF	Luhdorff and Scalmanini Consulting Engineers, Inc., October 2009		n/a	n/a	Annual groundwater and surface water use, potential for in-lieu water use.	TBD
22	Groundwater Injection Feasibility Study	Groundwater Basin Conditions	Hard Copy	Luhdorff and Scalmanini Consulting Engineers, Inc., June 1998	GEI, files	n/a	n/a	Reference source for ASR suitability.	TBD

ID	Title/Subject	Category	Data Type	Author (Date)	Source of Information	Date Requested	Date Received	Brief Description (Relevancy to Study)	Related Water Management Option ID(s)
23	Iowa Hill Pump Back Storage Project Description	Potential Water Management Options	PDF	SMUD	https://www.smud.org/en/about-smud/environment/renewable-energy/hydropower/iowa-hill/	n/a	n/a	Potential reservoir construction, option to contribute to construction to obtain storage. Project no longer being considered by SMUD.	TBD
24	The State of the Sierra Nevada's Forest	Potential Water Management Options	PDF	Sierra Nevada Conservancy	http://sierranevada.ca.gov/our-work/state-of-the-sierra	n/a	n/a	Potential supply reliability augmentation option via watershed management.	TBD
25	Soil Suitability Index Identifies Potential Areas for Groundwater Banking on Agricultural Lands	Groundwater Basin Conditions	website	California Agriculture	http://californiaagriculture.ucanr.edu/landingpage.cfm?article=ca.v069n02p75&fulltext=yes	n/a	n/a	Identifies recharge potential throughout California.	TBD
26	Details of SJWD Peterson treatment plant (e.g., historical use data, water quality data)	Existing Infrastructure	excel	SJWD (2015)	Flow Summary Report from 1979 to present	2/16/2016	2/22/2016		TBD
27	Historical water data (monthly, annual) of: - water demands (by individual wholesale, retail, etc. customers) - water deliveries by customer - supplies by contract - transfers	Surface Water Supplies	excel	SJWD (2015)	Flow Summary Report from 1979 to present	2/16/2016	2/22/2016	- table includes water deliveries by SJWD (WTP production) and demands by WCAs (WTP + groundwater) - SJWD provides small amount of raw water by contract to Granite Bay Golf Course. See table. -no transfers	TBD
28	Rates (\$/AF) for: - water deliveries (wholesale, retail, other) - supplies by contract - transfers	General District Information	excel	SJWD (2014)	Wholesale Financial Plan and Water Rate Study	2/16/2016	2/22/2016	Summary of rates on page 23	TBD
29	Wholesale Water Supply Agreements with Fair Oaks Water District, City of Folsom, Orange Vale Water Company, and Citrus Heights Water District	Water Rights and Contracts	PDF	SJWD (varies)	Agreements with Wholesale Customers	2/16/2016	2/22/2016	Details wholesale agreement between SJWD and its wholesale customers	TBD
30	Allocating California's Water: Directions for Reform	Potential Water Management Options	PDF	PPIC (2015)	online	n/a	n/a	Provides statewide view on potential directions for reform	TBD
31	Water Forum Agreement	Water Rights and Contracts	PDF	(2000)	online	n/a	n/a	Details the District's Water Forum Agreement	TBD
32	GIS files for PCWA (locations and capacities): -PCWA canal system -Infrastructure -Water treatment plant locations -Transmission pipelines.	Existing Infrastructure	GIS files			2/16/2016			TBD

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ID	Title/Subject	Category	Data Type	Author (Date)	Source of Information	Date Requested	Date Received	Brief Description (Relevancy to Study)	Related Water Management Option ID(s)
33	GIS shapefiles of SJWD facilities (location and capacities): -pipelines -connections to other districts (PCWA, Roseville) -Storage tanks -Pumps -Location of cathodic wells for SJWD main transmission pipeline, available locations to construct wells, potential to construct wells.	Existing Infrastructure	GIS files			2/16/2016			TBD
34	Report by West Yost for SJWD on Recycled Water opportunities; other recycled water reports done by/for SJWD	Recycled Water	PDF			2/16/2016			TBD

Conclusions and Next Steps

Through this initial data review process, over 30 sources of information were obtained or requested to support the Study. The information ranged from legal agreements/contracts, planning documents, and reports to raw data and GIS shapefiles.

As mentioned above, additional information needs may be identified throughout the course of this Study as the various options are developed and analyzed. Information not readily available on the Internet will be requested from the District. If the District cannot obtain the requested information or the data/information is of unacceptable quality, specific options will be analyzed using broad assumptions, if applicable or dropped from consideration.

Next steps include continuing to analyze the information obtained to date and develop a comprehensive list of potential options using this information.

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