CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Agenda

Regular Meeting

Thursday, September 9, 2021
Camrosa Board Room
5:00 P.M.

TO BE HELD REMOTELY

In light of public health responses to the threat of COVID-19 and Governor Newsom's Executive Order N-25-20, the Camrosa office is still closed to the public. Board meetings are accessible to the public ***only*** *via web-based teleconference, as described below.*

To participate via the web to see the board meeting presentation, click https://us02web.zoom.us/j/9235309144 on your computer, tablet, or smartphone. You'll need to download and install the ZOOM app before logging on.

If you'd like to make a comment, you'll have to log in via the app so we can identify you and invite you to participate.

To listen in via phone, call **(669) 900-6833**; when prompted, enter the meeting ID: **923 530 9144**.

Call to Order

Public Comments

At this time, the public may address the Board on any item not appearing on the agenda which is subject to the jurisdiction of the Board. Persons wishing to address the Board should fill out a white comment card and submit it to the Board Chairman prior to the meeting. All comments are subject to a 5-minute time limit.

Matters appearing on the Consent Agenda are expected to be non-controversial and will be acted upon by the Board at one time, without discussion, unless a member of Board or the Staff requests an opportunity to address any given item. Items removed from the Consent Agenda will be discussed at the beginning of the Administrative Items. Approval by the Board of Consent Items means that the recommendation of the Staff is approved along with the terms and conditions described in the Board Memorandum.

Consent Agenda

1. **Approve Minutes of the Regular Meeting of August 26, 2021**

2. ****Approve Vendor Payments**

   Objective: Approve the payments as presented by Staff.

   Action Required: Approve accounts payable in the amount of $1,415,042.25.

Primary Agenda

3. **Project Update**

   Objective: Receive an update on current projects.

   Action Required: No action necessary; for information only.

4. ****Water Loss Control Program**

   Objective: Establish a Water Loss Control Program.

   Action Required: Authorize the General Manager to enter into the attached agreement with and issue a purchase order to Water Systems Optimization, Inc., in an amount not to exceed $142,500.00, for a comprehensive leak detection survey and the GPS locating of customer meters.

5. **Valve Box and Manhole Cover Raising**

   Objective: Issue purchase orders for raising valve boxes and manhole covers to grade as part of two City of Camarillo street resurfacing projects.

   Action Required: Authorize the General Manager to issue purchase orders to the City of Camarillo in the amount of $38,410.00 (ST-5020) and $57,914.00 (ST-5021).

6. **Purchase of Meters**

   Objective: Purchase meters and related equipment.

   Action Required: Authorize the General Manager to spend up to $225,000.00, the Fiscal Year (FY) 2021-22 budgeted amount, to purchase meters and related equipment.

7. **Water Arrearages Payment Program**

   Objective: Discuss California Water and Wastewater Arrearages Payment Program.

   Action Required: No action necessary; for information only.

8. ****Voluntary Water Use Reduction**

   Objective: Increase awareness of water use efficiency.

   Action Required: Adopt the attached Resolution Calling for a Voluntary Fifteen-Percent Reduction in Potable Water Use.

9. ****Transfer of Unclaimed Funds to the General Fund**

   Objective: Transfer unclaimed funds to the General Fund.

   Action Required: Adopt a resolution of the Board authorizing the transfer of unclaimed funds in the amount of $265.36, to the District's General Fund.

10. ****Ankura LLC, Managed Cyber Detection & Response Service Annual Renewal**

    Objective: Maintain the Districts Cyber Security Posture.

    Action Required: Authorize the General Manager to renew agreement and approve a purchase order, in an amount of $51,250.00, to Ankura LLC for annual renewal of computer endpoint detection and response (EDR) managed cloud services.

CLOSED SESSION: The Board may enter a closed session to confidentially discuss litigation matters as authorized by Government code 54956.9.

11. **Closed Session Conference with Legal Counsel – Pending Litigation**

    Objective: Confer with and receive advice from counsel regarding pending litigation.

    Action Required: No action necessary; for information only.

Comments by General Manager; Comments by Directors; Adjournment

PLEASE NOTE: The Board of Directors may hold a closed session to discuss personnel matters or litigation, pursuant to the attorney/client privilege, as authorized by Government Codes. Any of the items that involve pending litigation may require discussion in closed session on the recommendation of the Board's Legal Counsel.

Note: ** indicates agenda items for which a staff report has been prepared or backup information has been provided to the Board. Copies of the full agenda are available for review at the District Office and on our website at www.camrosa.com.

CAMROSA WATER DISTRICT

BUILDING WATER SELF-RELIANCE

September 9, 2021

Board of Directors Agenda Packet

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Minutes

Regular Meeting

Thursday, August 26, 2021
Camrosa Board Room
5:00 P.M.

Call to Order The meeting was convened at 5:00 P.M. as a web-based teleconference.

Present: Eugene F. West, President (via teleconference)
Terry L. Foreman, Vice-President (via teleconference)
Al E. Fox, Director (via teleconference)
Jeffrey C. Brown, Director (via teleconference)
Timothy H. Hoag, Director (via teleconference)

Staff: Tony Stafford, General Manager (via teleconference)
Ian Prichard, Assistant General Manager (via teleconference)
Tamara Sexton, Manager of Finance (via teleconference)
Joe Willingham, Manager of Operations (via teleconference)
Jozi Zabarsky, Manager of Customer Accounts/Business (via teleconference)
Terry Curson, District Engineer (via teleconference)
Greg Jones, Legal Counsel (via teleconference)

Guests: Todd Robins, Robins Borghei LLP (via teleconference)

Public Comments

None

Consent Agenda

1. **Approve Minutes of the Regular Meeting of August 5, 2021**

   The Board approved the Minutes of the Regular Meeting of August 5, 2021.

   Motion: Fox **Second:** Brown
   Roll Call: Fox-Yes; Brown-Yes; Hoag-Yes; Foreman-Yes; West-Yes

2. **Approve Vendor Payments**

   A summary of accounts payable in the amount of $2,011,557.46 was provided for Board information and approval. The Board approved the payments to vendors as presented by staff in the amount of $2,011,557.46.

   Motion: Fox **Second:** Brown
   Roll Call: Fox-Yes; Brown-Yes; Hoag-Yes; Foreman-Yes; West-Yes

Primary Agenda

Closed Session: The Board entered a closed session at 5:01 P.M. to confidentially discuss pending litigation as authorized by Government codes 54956.9.

3. **Closed Session Conference with Legal Counsel – Pending Litigation**

   The Board conferred with and received advice from counsel regarding pending litigation.

   The Board returned to open session at 6:56 P.M.

   No action was taken in closed session.

Primary Agenda (continued)

4. **Prequalify Contractors for GAC Treatment Plant**

   The Board approved James C. Cushman, Pacific Hydrotech, and W.M. Lyles Co., Inc. as prequalified contractors for the construction of the GAC treatment plant at the Conejo Wellfield.

   Motion: Hoag **Second:** Fox
   Roll Call: Fox-Yes; Brown-Yes; Hoag-Yes; Foreman-Yes; West-Yes

5. **Drought Update**

   The Board received an update on the current statewide drought.

   No action necessary; for information only.

   The Board directed staff to bring drought-response actions to the Board at a future Board meeting for discussion.

Comments by General Manager

- Mr. Stafford informed the Board that the office would be closed to employees and the public during the asbestos-removal phase of construction from August 30 – September 7.

Comments by Directors

- Director Fox requested that the drought update provided during this meeting be offered at Leisure Village.

Adjournment

There being no further business, the meeting was adjourned at 7:21 P.M.

_____	_____ (ATTEST)
Tony L. Stafford, Secretary/Manager	Eugene F. West, President
Board of Directors	Board of Directors
Camrosa Water District	**Camrosa Water District**

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: General Manager

From: Sandra Llamas, Sr. Accountant

Subject: Approve Vendor Payments

Objective: Approve the payments as presented by Staff.

Action Required: Approve accounts payable in the amount of $1,415,042.25.

Discussion: A summary of accounts payable is provided for Board information and approval.

Payroll PR 8-2, 2021	$ 44,067.06
Accounts Payable 8/19/2021-9/01/2021	$ 1,370,975.19
Total Disbursements	$ 1,415,042.25

DISBURSEMENT APPROVAL

BOARD MEMBER DATE

BOARD MEMBER DATE

BOARD MEMBER DATE

_____
Tony L. Stafford, General Manager

Camrosa Water District

Accounts Payable Period:

8/19/2021-9/01/2021

Expense	Account Description	Amount
11100	Accounts Rec-Other	
15773	Deferred Outflows-UAL Prep.	
11700	Meter Inventory	
11900	Prepaid Insurance	
11905	Prepaid Maintenance Ag	
13000	Land	
13400	Construction in Progress	82551.82
20053	Current LTD Bond 2016	
20052	Current LTD Bond 2012	
21800	Unclaimed Funds	43.76
20250	Non-Potable Water Purchases	976900.00
23001	Refunds Payable	449.59
50110	Payroll FLSA Overtime-Retro	
50010	Water Purchases & SMP	
50020	Pumping Power	147958.24
50100	Federal Tax 941 1st QTR	
50136	Required UAL Contribution	
50153	Social Security Tax	
50200	Utilities	1364.30
50210	Communications	2669.28
50220	Outside Contracts	64558.96
50230	Professional Services	1949.01
50240	Pipeline Repairs	6283.18
50250	Small Tool & Equipment	811.45
50260	Materials & Supplies	38344.86
50270	Repair Parts & Equip Maint	36368.65
50280	Legal Services	1593.00
50290	Dues & Subscriptions	
50300	Conference & Travel	
50310	Safety & Training	
50330	Board Expenses	
50340	Bad Debt	
50350	Fees & Charges	
50360	Insurance Expense	
50500	Misc Expense	
50600	Fixed Assets	9129.09
50700	Interest Expense	
	TOTAL	**$1,370,975.19**

Agenda Item #2

Payment N	Post Date	Vendor Name	Payable Number	Description (Item)	Account Name	Purchase Orde	Amount
Vendor: *CAM* - DEPOSIT ONLY-CAMROSA WTR							
3293	08/26/2021	DEPOSIT ONLY-CAMROSA WTR	8-26-21-PR	Transfer to Deposit Account-PR	Transfer to disbursements-h		127000
3294	08/26/2021	DEPOSIT ONLY-CAMROSA WTR	8-26-21-AP	Transfer to Disbursements Account-AP	Transfer to disbursements-h		793000
					Vendor *CAM* - DEPOSIT ONLY-CAMROSA WTR Total:		**920000**
57086	08/24/2021	ALISA BARLOW	00001886-2	Re issue Uncashed Check Overpayment Refund	Unclaimed monies		43.76
57087	08/31/2021	B & R TOOL & SUPPLY CO.	1900962989	Materials & Supplies - PPE Gloves	Materials & supplies		570.21
Vendor: BOU02 - BOUTWELL*FAY LLP							
57088	08/25/2021	BOUTWELL*FAY LLP	33736	CalPERS Legal Services	Legal services		149
57088	08/30/2021	BOUTWELL*FAY LLP	33900	Profit Share Legal Services	Legal services		1444
					Vendor BOU02 - BOUTWELL*FAY LLP Total:		**1593**
57089	08/31/2021	CALIFORNIA SURVEYING & DRAFTING SUPPLY INC	170437-1	Satellite Service Subscription Trimble RTX	Outsd contracts	FY22-0064	1200
57133	09/01/2021	CITY OF THOUSAND OAKS	17239	Purchase of Conejo Creek Water	Accrued non=potable water		976900
57091	08/30/2021	CORELOGIC INFORMATION SOLUTIONS, INC	30559113	Ventura County Assessors Parcel Info	Outsd contracts		150
57092	08/24/2021	DOROTHY LUCAS	00006695	Closed Acct Overpayment Refund - 5386 Corte Pico V	Refunds payable		51.63
57093	08/31/2021	DUDE SOLUTIONS, INC.	IN89692	Workflow app (Dude Solutions) Annual Support Renew	Outsd contracts	FY22-0065	13526.79
Vendor: FAM01 - FAMCON PIPE & SUPPLY, INC							
57094	08/23/2021	FAMCON PIPE & SUPPLY, INC	S100060132-003	WO#14676515-Pipeline Repair-1283 Mission Verde Dr	Pipeline repairs		500.18
57094	08/31/2021	FAMCON PIPE & SUPPLY, INC	S100060384-001	Calleguas SMP Testing Pipe Modification	Repair parts & equipment	FY22-0062	5633.84
57094	08/31/2021	FAMCON PIPE & SUPPLY, INC	S100060384-002	Calleguas SMP Testing Pipe Modification	Repair parts & equipment	FY22-0062	305.66
57094	08/25/2021	FAMCON PIPE & SUPPLY, INC	S100060523-001	Angle Meter Stops	Repair parts & equipment	FY22-0061	1576.58
					Vendor FAM01 - FAMCON PIPE & SUPPLY, INC Total:		**8016.26**
Vendor: FER03 - FERGUSON WATERWORKS #1083							
57095	08/23/2021	FERGUSON WATERWORKS #1083	0758771-2	Fire Hydrants	Repair parts & equipment	FY21-0239-R1	6945.51
57095	08/30/2021	FERGUSON WATERWORKS #1083	0770881	Materials & Supplies - G3 Boxes	Materials & supplies		531.23
					Vendor FER03 - FERGUSON WATERWORKS #1083 Total:		**7476.74**
57096	08/31/2021	Frontier Communications	August 2021	VOIP - Land Lines	Communications		429.81
Vendor: FRU01 - FRUIT GROWERS LAB. INC.							
57097	08/24/2021	FRUIT GROWERS LAB. INC.	109951A	Outside Lab Work	Outsd contracts		265
57097	08/24/2021	FRUIT GROWERS LAB. INC.	109959A	Outside Lab Analysis	Outsd contracts		54
57097	09/01/2021	FRUIT GROWERS LAB. INC.	110677A	Outside Lab Work for RMWTP	Outside Contracts		108
					Vendor FRU01 - FRUIT GROWERS LAB. INC. Total:		**427**
57098	08/31/2021	GEIGER ENTERPRISES, INC.	21-1282	Materials & Supplies - Fuel- Portable Generators	Materials & supplies		568.56
Vendor: WES13 - GMH, Inc							
57099	08/31/2021	GMH, Inc	S118452	AC Maintenance	Outsd contracts		265
57099	08/31/2021	GMH, Inc	S118768	AC Maintenance	Outsd contracts		28.54
					Vendor WES13 - GMH, Inc Total:		**293.54**
57100	09/01/2021	GMS Landscaping Inc	V7547	Tree and Site Maintenance	Outsd contracts	FY22-0076	5500
57101	08/23/2021	HERCULES INDUSTRIES, INC	114884	Material & Supplies - Locks	Materials & supplies		970.78
57102	08/23/2021	J&H Engineering	3760	Potholing at Conejo Wells for GAC	Construction in progress	FY22-0045	2293.94

57103	08/24/2021	JOSEPH URIBE	00008601	Deposit Refund Act 8601 - 2266 Woodcreek Rd	Refunds payable		46.87
57104	08/24/2021	KATHRYN MACCUTCHEON	00005758	Deposit Refund Act 5758- 11171 Presilla Rd	Refunds payable		179.64
57105	08/30/2021	McMASTER-CARR SUPPLY CO	63982699	Repair Parts - UPS Cooling Fans	Repair parts & equipment		507.6
Vendor: NOR07 - NORTHSTAR CHEMICAL							
57106	08/31/2021	NORTHSTAR CHEMICAL	200974	Materials Chemicals - RMWTP	Materials & Supplies-RMWTF		1486.51
57106	08/31/2021	NORTHSTAR CHEMICAL	200975	Materials Chemicals - TR Well	Materials & supplies		329.37
57106	08/31/2021	NORTHSTAR CHEMICAL	200976	Materials Chemicals - Woodcreek Well	Materials & supplies		1405.02
57106	08/31/2021	NORTHSTAR CHEMICAL	203232	Materials Chemicals - CWRF	Materials & supplies		268.13
57106	09/01/2021	NORTHSTAR CHEMICAL	204413	Materials Chemicals	Materials & supplies		3501.6
57106	09/01/2021	NORTHSTAR CHEMICAL	204415	Materials Chemicals RMWTP	Materials & Supplies-RMWTF		1969.65
					Vendor NOR07 - NORTHSTAR CHEMICAL Total:		**8960.28**
57107	09/01/2021	Occupational Health Centers of California, A Medica	72458058	Hep Shots for Chris C	Outsd contracts		285
57108	08/30/2021	PRAXAIR DISTRIBUTION INC	65515505	Acetylene Gas Cylinders	Materials & supplies		60.76
Vendor: PRO04 - PROVANTAGE LLC							
57109	08/31/2021	PROVANTAGE LLC	9041918	UPSs for SLRR and SL1A	Construction in progress	FY22-0060	9677.72
57109	08/31/2021	PROVANTAGE LLC	9041922	UPSs for SLRR and SL1A	Construction in progress	FY22-0060	4364.4
					Vendor PRO04 - PROVANTAGE LLC Total:		**14042.12**
57110	08/31/2021	PURETEC INDUSTRIAL WATER	1912808	Chemicals RMWTP	Materials & Supplies-RMWTF		18077.31
57111	08/31/2021	QUINN COMPANY	WON10016244	Repair Parts - Pond Pump Maintenance	Repair parts & equipment		943.87
57112	08/31/2021	RON'S PORTABLE WELDING	6788	Calleguas SMP Testing Pipe Modification	Repair parts & equipment		600
Vendor: ROY03 - ROYAL INDUSTRIAL SOLUTIONS							
57113	08/23/2021	ROYAL INDUSTRIAL SOLUTIONS	9009-1009436	Storage Container Lighting	Repair parts & equipment	FY22-0051	2228.31
57113	08/31/2021	ROYAL INDUSTRIAL SOLUTIONS	9009-1009770	Repair Parts - SR3 VFD Fans	Repair parts & equipment		426.53
57113	08/31/2021	ROYAL INDUSTRIAL SOLUTIONS	9009-1009855	Sewer Lift #1 - SCADA Parts	Construction in progress		523.38
57113	08/31/2021	ROYAL INDUSTRIAL SOLUTIONS	9009-1009931	Sewer Lift #1 - SCADA Parts	Construction in progress		258.49
57113	08/31/2021	ROYAL INDUSTRIAL SOLUTIONS	9009-1009976	Repair Parts SR3 VFD Fans	Repair parts & equipment		86.01
57113	09/01/2021	ROYAL INDUSTRIAL SOLUTIONS	9009-1010272	Repair Parts SR3 VFD	Repair parts & equipment	FY22-0066	13188.61
57113	09/01/2021	ROYAL INDUSTRIAL SOLUTIONS	9009-1010465	SL1A SCADA Equipment	Construction in progress		806.31
					Vendor ROY03 - ROYAL INDUSTRIAL SOLUTIONS Total:		**17517.64**
57114	08/27/2021	ROYER ANDERSON	00003731	Deposit Refund Act 3731 - 1238 Calle Bonita	Refunds payable		23.54
57115	08/31/2021	RYAN FERNANDEZ	00000517	Deposit Refund Act 517 - 96 Cottage Grove Av	Refunds payable		26.31
57116	08/31/2021	SAM HILL & SONS, INC.	3878	Calleguas SMP Testing Pipe Modification	Repair parts & equipment	FY22-0075	2155.47
Vendor: SCE01 - SOUTHERN CALIF. EDISON							
863	08/30/2021	SOUTHERN CALIF. EDISON	July 2021	Current Usage Charges - July 2021	Pumping power		122411.25
863	08/30/2021	SOUTHERN CALIF. EDISON	July 2021	Current Usage Charges - July 2021	Pumping Power-RMWTP		25546.99
863	08/30/2021	SOUTHERN CALIF. EDISON	July 2021	Current Usage Charges - July 2021	Utilities		1348.45
					Vendor SCE01 - SOUTHERN CALIF. EDISON Total:		**149306.69**
864	09/01/2021	SOUTHERN CALIFORNIA GAS	August 2021	Usage Charges August 2021-Via Cantilena	Utilities		15.85
Vendor: SCF01 - SOUTHERN COUNTIES OIL							
57117	08/23/2021	SOUTHERN COUNTIES OIL	1936228IN	Material & Supplies - Fuel	Materials & supplies		1804.73
57117	08/23/2021	SOUTHERN COUNTIES OIL	1939769IN	Material & Supplies - Fuel Pond 1	Materials & supplies		1428.81
57117	08/31/2021	SOUTHERN COUNTIES OIL	1942111IN	Fleet Fuel	Materials & supplies		1141.36
57117	08/31/2021	SOUTHERN COUNTIES OIL	1946913IN	Materials & Supplies - Fuel Ponds	Materials & supplies		273.73
					Vendor SCF01 - SOUTHERN COUNTIES OIL Total:		**4648.63**
57118	08/24/2021	TERRA UNIVERSAL, INC.	284766	E-Pure Lab Water Filter	Fixed Assets-Internal	FY22-0022	9129.09
57119	09/01/2021	THERMO FISHER SCIENTIFIC (ASHVILLE) LLC	79942587	Lab Supplies	Materials & supplies		366.98
Vendor: TOT03 - TOTAL BARRICADE SERVICE INC							

57120	08/31/2021	TOTAL BARRICADE SERVICE INC	53800	Raise Valve Stacking -Traffic Plan Manholes	Outsd contracts		150
57120	08/31/2021	TOTAL BARRICADE SERVICE INC	53801	Raise Valve Stacking -Traffic Plan Manholes	Outsd contracts		600
					Vendor TOT03 - TOTAL BARRICADE SERVICE INC Total:		**750**
57121	08/25/2021	TURF CONSTRUCTION, INC.	14261	Leak Repair 1" Service	Pipeline repairs	FY22-0063	5783
Vendor: UND01 - UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA, INC							
57122	09/01/2021	UNDERGROUND SERVICE ALERT OF SOUTHERN CALI	820210205	Current Usage charges April 2016	Outsd contracts		308.65
57122	09/01/2021	UNDERGROUND SERVICE ALERT OF SOUTHERN CALI	dsb20204222	Dig Alert Monthly Tickets	Outsd contracts		47.44
					Vendor UND01 - UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA, INC Total:		**356.09**
Vendor: UNI08 - UNIFIRST CORPORATION							
57123	08/23/2021	UNIFIRST CORPORATION	328-1300794	Uniform Cleaning Service	Outsd contracts		242.06
57123	08/23/2021	UNIFIRST CORPORATION	328-1300803	Office Cleaning Supplies - Towel-Mat Service	Outsd contracts		66.14
57123	08/31/2021	UNIFIRST CORPORATION	328-1302607	Uniform Cleaning Service	Outsd contracts		242.06
57123	08/31/2021	UNIFIRST CORPORATION	328-1302615	Office Cleaning Supplies - Mat Service	Outsd contracts		66.14
57123	08/31/2021	UNIFIRST CORPORATION	328-1304418	Uniform Cleaning Service	Outsd contracts		242.06
57123	08/31/2021	UNIFIRST CORPORATION	328-1304426	Office Cleaning Supplies - Mat Service	Outsd contracts		64.58
					Vendor UNI08 - UNIFIRST CORPORATION Total:		**923.04**
Vendor: USA01 - USA BLUE BOOK							
57125	08/23/2021	USA BLUE BOOK	699263	Materials & Supplies - PPE Gloves Large	Materials & supplies		238.1
57125	08/23/2021	USA BLUE BOOK	699264	Material & Supplies - PPE Glove Large	Materials & supplies		148.81
57125	08/23/2021	USA BLUE BOOK	699489	Materials & Supplies - Gloves Small, Med, XL	Materials & supplies		611.94
57125	08/23/2021	USA BLUE BOOK	699511	Repair Parts - Woodcreek Well	Repair parts & equipment		866.39
57125	08/23/2021	USA BLUE BOOK	700855	Repair Parts - RMWTP - A2-SNEE-T	Repair Parts & Equipment-RM		852.21
					Vendor USA01 - USA BLUE BOOK Total:		**2717.45**
57126	08/24/2021	VENTURA COUNTY RECORDER	GAC-RecordedFees	Record Fees 2.47 Acres Purchased City Thousand Oak	Construction in progress		30
Vendor: VEN02 - VENTURA REGIONAL SANITATION DISTRICT, INC							
57127	08/23/2021	VENTURA REGIONAL SANITATION DISTRICT, INC	1002-202200-63021	VRSD Sewer Cleaning	Outsd contracts	FY22-0033	8181.75
57127	08/23/2021	VENTURA REGIONAL SANITATION DISTRICT, INC	202200-73121	VRSD Sewer Cleaning	Outsd contracts	FY22-0033	32965.75
					Vendor VEN02 - VENTURA REGIONAL SANITATION DISTRICT, INC Total:		**41147.5**
57128	08/31/2021	VERIZON WIRELESS	9886817029	Cell Phone	Communications		2239.47
57129	08/24/2021	VICTORIA SAVACOOL	00009986	Deposit Refund Act 9986 - 354 Nuez St	Refunds payable		101.07
Vendor: WWG01 - W W GRAINGER, INC.							
57130	08/24/2021	W W GRAINGER, INC.	9026488990	Measuring Wheel for Inspections	Small tools & equipment		83.13
57130	08/24/2021	W W GRAINGER, INC.	9026489006	Recycled Water Purple Tape	Small tools & equipment		129.82
57130	08/23/2021	W W GRAINGER, INC.	9026674649	Materials & Supplies - Labeling Supplies	Materials & supplies		857.93
57130	08/23/2021	W W GRAINGER, INC.	9026674656	Hand Tools Wrenches	Prof services		982.74
57130	08/23/2021	W W GRAINGER, INC.	9026840406	Materials & Supplies Pipe Taps	Materials & supplies		966.99
57130	08/23/2021	W W GRAINGER, INC.	9027152504	Hand Tools Digging Bars	Prof services		966.27
57130	08/24/2021	W W GRAINGER, INC.	9029404556	Pump for Groundwater Well Sampling	Small tools & equipment		598.5
57130	08/31/2021	W W GRAINGER, INC.	9031122402	Materials & Supplies - Cutting Oil	Materials & supplies		54.57
57130	08/31/2021	W W GRAINGER, INC.	9032836018	Materials & Supplies - Batteries	Materials & supplies		711.78
57130	08/31/2021	W W GRAINGER, INC.	9033619686	Repair Parts - Fire Extinguisher Box	Repair parts & equipment		52.06
					Vendor WWG01 - W W GRAINGER, INC. Total:		**5403.79**
57131	08/24/2021	WINNIE CHEN	00002425	Deposit Refund Act 2425- 6259 Calle Bodega	Refunds payable		20.53
57132	08/31/2021	XYLEM WATER SOLUTIONS USA	3556B86648	Diversion Pump Project	Construction in progress	FY21-0238-R1	64597.58

TOTAL VENDOR PAYMENTS **$ 1,370,975.19**

Vendor: PER05 - CAL PERS 457 PLAN						
DFT0003511	08/26/2021	CAL PERS 457 PLAN	INV0010450	Deferred Compensation	Deferred comp - ee paid	50
DFT0003511	08/26/2021	CAL PERS 457 PLAN	INV0010451	Deferred Compensation	Deferred comp - ee paid	2078
					Vendor PER05 - CAL PERS 457 PLAN Total:	**2128**
DFT0003511	08/26/2021	COLONIAL SUPPLEMENTAL INS	INV0010446	Colonial Benefits	Colonial benefits	279.22
DFT0003531	08/26/2021	EMPLOYMENT DEVELOP. DEPT.	INV0010476	Payroll-SIT	P/R-sit	4386.82
Vendor: HEA02 - HealthEquity						
DFT0003521	08/26/2021	HealthEquity	INV0010456	HSA-Employee Contribution	HSA Contributions Payable	480.84
DFT0003521	08/26/2021	HealthEquity	INV0010457	HSA Contributions	HSA Contributions Payable	250
					Vendor HEA02 - HealthEquity Total:	**730.84**
862	08/26/2021	LINCOLN FINANCIAL GROUP	INV0010452	Deferred Compensation	Deferred comp - ee paid	1900
861	08/26/2021	LINCOLN FINANCIAL GROUP	INV0010470	Profit Share Contribution	Profit share contributions	2587.28
DFT0003511	08/26/2021	PUBLIC EMPLOYEES	INV0010454	PERS-Classic Employee Portion	P/R-state ret.	16842.25
DFT0003521	08/26/2021	SYMETRA LIFE INS CO.	INV0010458	Life Insurance	Life ins.	282
Vendor: UNI10 - UNITED STATES TREASURY						
DFT0003511	08/26/2021	UNITED STATES TREASURY	INV0010443	Payroll-Social Security Tax	P/R - ee social security	373
DFT0003511	08/26/2021	UNITED STATES TREASURY	INV0010444	Payroll- Medicare Tax	P/R - ee medicare	2946.56
DFT0003531	08/26/2021	UNITED STATES TREASURY	INV0010473	FIT	P/R-fit	11591.09
					Vendor UNI10 - UNITED STATES TREASURY Total:	**14910.65**
57124	08/26/2021	UNITED WAY OF VENTURA CO.	INV0010445	Charity-United Way	P/R-charity	20

TOTAL PAYROLL VENDOR PAYMENTS $ 44,067.06

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: Board of Directors

From: General Manager

Subject: **Project Update**

Objective: Receive an update on current projects.

Action Required: No action necessary; for information only.

Discussion: The current active projects include over 11 active Capital Improvement Projects, more than eight O&M projects, multiple developer projects, and the Arroyo Santa Rosa Groundwater Sustainability Plan.

Staff will brief the Board on the status of these projects.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: Board of Directors

From: Ian Prichard, Assistant General Manager

Subject: **Water Loss Control Program**

Objective: Establish a Water Loss Control Program.

Action Required: Authorize the General Manager to enter into the attached agreement with and issue a purchase order to Water Systems Optimization, Inc., in an amount not to exceed $142,500.00, for a comprehensive leak detection survey and the GPS locating of customer meters.

Discussion: Last fiscal year, the District contracted with Water Systems Optimization, Inc., (WSO) to perform a data gap assessment on the District's water loss control program. Their final report, which is attached for reference, described a number of programs and projects the District could undertake to improve water loss control and reduce the revenue loss associated with leaks and other "nonrevenue water."

Water loss is a concern in and of itself and has been a focus of District staff for several years. It is also, as of 2015, an activity regulated by the state. The WSO report contributed to District staff's growing understanding of how to build a water loss control program that best addresses Camrosa's needs and state regulations. Staff will present the current plan for the water loss control program, the first step of which is a comprehensive leak detection survey of the potable, nonpotable, and recycled water distribution systems.

Earlier this year, the District contracted with WSO to perform a data gap assessment on the District's water loss control program. A comprehensive leak detection survey is the first step in a water loss control program to get a baseline understanding of "real" water loss in the distribution systems. Technicians equipped with leak-sounding microphones will come into contact with all accessible meters, service connections, hydrants, and valves throughout the water distribution system to listen for any possible leak noise. Possible leak noises are investigated further and, if verified as a leak, documented and reported to District staff. This will allow the District to fix existing discoverable leaks and will help inform the next step in the water loss control program.

In addition to the leak detection survey, District staff requested proposers to include the collection of X/Y geographical coordinates for each meter. Camrosa's geographical information system (GIS) is robust and the vast majority of infrastructure and appurtenances are located at sub-foot accuracy. Customer meters, however, still only have a generic/nonspecific location in the GIS, usually defaulted to the middle of the parcel. Locating meters at their actual position in the GIS will document institutional knowledge and make work with future contractors more efficient. It will also aid in water loss analysis, specifically analysis of the loss by pressure zone, by ensuring that meter location in the virtual world, where we do all our analysis and calculations, matches the real world, where the water is actually flowing. Unlike the leak detection survey, which will be performed at an interval (usually one to three

years), the locating work will not have to be repeated; once coordinates are collected, they will live in the GIS permanently. The location of future new meters will be collected by District staff and/or required to be provided by developers.

Staff solicited quotes from three vendors: Wachs, who did the last leak detection survey; WSO, who did the Water Loss Control Data Gap Assessment; and M.E. Simpson, a reputable water loss control firm recommended to staff by several California water agencies.

- **WSO: $142,500.00**
- Wachs: $83,200.00
- ME Simpson: $248,890.00

The leak detection component of the three quotes was very similar. The difference lay in the GPS locating. Staff held phone calls with proposers to understand their approaches. WSO and ME Simpson demonstrated a clear understanding of the process and potential pitfalls of GSP locating, based on experience. WSO provided multiple references for the specific technicians that would be doing the leak detection and GPS locating work; the references all provided positive feedback and said they would engage WSO again. Wachs has not done a GPS location survey of this magnitude before. ME Simpson was comparable in approach to WSO, at a significantly increased cost.

Based on references, WSO's reputation in the field, references, and the District's experience with WSO on the data gap assessment, staff considers the WSO quote responsive and recommends entering into an agreement with WSO to perform this work. There are existing funds in the FY2021-22 budget to cover this expenditure.

Camrosa Water District
7385 Santa Rosa Rd.
Camarillo, CA 93012
Telephone (805) 482-4677 - FAX (805) 987-4797

Some of the important terms of this agreement are printed on pages 2 through 3. For your protection, make sure that you read and understand all provisions before signing. The terms on Page 2 through 3 are incorporated in this document and will constitute a part of the agreement between the parties when signed.

TO: Water Systems Optimization Inc.
1410 Donelson Pike Suite A1
Nashville, TN 37217

DATE: September 9, 2021

Agreement No.: 2022-113

The undersigned Consultant offers to furnish the following: to provide leak detection services per proposal dated August 26, 2021 (attached).

Contract price $: Not to exceed $142,500 per proposal attached.

Contract Term: September 9, 2021 – September 8, 2022

Instructions: Sign and return original. Upon acceptance by Camrosa Water District, a copy will be signed by its authorized representative and promptly returned to you. Insert below the names of your authorized representative(s).

Accepted: Camrosa Water District	Consultant:
By: _____	By: 
Tony L. Stafford	Reinhard Sturm
Title: General Manager	Title: CEO
Date: _____	Date: 08/27/2021
Other authorized representative(s):	Other authorized representative(s):
_____	_____

Consultant agrees with Camrosa Water District (District) that:

a. **Indemnification:** To the extent permitted by law, Consultant shall hold harmless, defend at its own expense, and indemnify the District, its directors, officers, employees, and authorized volunteers, against any and all liability, claims, losses, damages, or expenses, including reasonable attorney's fees and costs, arising from negligent acts, errors or omissions of Consultant or its officers, agents, or employees in rendering services under this contract; excluding, however, such liability, claims, losses, damages or expenses arising from the District's sole negligence or willful acts.

b. **Minimum Insurance Requirements:** Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Consultant, his agents, representatives, employees or subcontractors.

c. **Coverage:** Coverage shall be at least as broad as the following:

   1. **Commercial General Liability (CGL) -** Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with limit of at least two million dollars ($2,000,000) per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to the District) or the general aggregate limit shall be twice the required occurrence limit.

   2. **Automobile Liability -** (If applicable) Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) or if Consultant has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars ($1,000,000) for bodily injury and property damage each accident.

   3. **Workers' Compensation Insurance -** as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.

   4. **Waiver of Subrogation:** The insurer(s) named above agree to waive all rights of subrogation against the District, its directors, officers, employees, and authorized volunteers for losses paid under the terms of this policy which arise from work performed by the Named Insured for the District; but this provision applies regardless of whether or not the District has received a waiver of subrogation from the insurer.

   5. **Professional Liability** - (also known as Errors & Omission) Insurance appropriate to the Consultant profession, with limits no less than $1,000,000 per occurrence or claim, and $2,000,000 policy aggregate.

d. **If Claims Made Policies:**

   1. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.

   2. Insurance must be maintained and evidence of insurance must be provided **for at least five (5) years after completion of the contract of work.**

   3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

If the Consultant maintains broader coverage and/or higher limits than the minimums shown above, the District requires and shall be entitled to the broader coverage and/or higher limits maintained by the Consultant. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the District.

Other Required Provisions: The general liability policy must contain, or be endorsed to contain, the following provisions:

a. **Additional Insured Status:** District, its directors, officers, employees, and authorized volunteers are to be given insured status (at least as broad as ISO Form CG 20 10 10 01), with respect to liability arising out of work or operations

performed by or on behalf of the Consultant including materials, parts, or equipment furnished in connection with such work or operations.

b. **Primary Coverage:** For any claims related to this project, the Consultant's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to the District, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the District, its directors, officers, employees, and authorized volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the District.

Self-Insured Retentions: Self-insured retentions must be declared to and approved by the District The District may require the Consultant to provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or the District.

Acceptability of Insurers: Insurance is to be placed with insurers having a current A.M. Best rating of no less than A:VII or as otherwise approved by the District.

Verification of Coverage: Consultant shall furnish the District with certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the District before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Consultant's obligation to provide them. The District reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration and Endorsements pages listing all policy endorsements. If any of the required coverages expire during the term of this agreement, the Consultant shall deliver the renewal certificate(s) including the general liability additional insured endorsement to Camrosa Water District at least ten (10) days prior to the expiration date.

Subcontractors: Consultant shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Consultant shall ensure that the District, its directors, officers, employees, and authorized volunteers are an additional insured on Commercial General Liability Coverage.

Other Requirements:

a. Consultant shall not accept direction or orders from any person other than the General Manager or the person(s) whose name(s) is (are) inserted on Page 1 as "other authorized representative(s)."

b. Payment, unless otherwise specified on Page 1, is to be 30 days after acceptance by the District.

c. Permits required by governmental authorities will be obtained at Consultant's expense, and Consultant will comply with applicable local, state, and federal regulations and statutes including Cal/OSHA requirements.

d. Any change in the scope of the professional services to be done, method of performance, nature of materials or price thereof, or to any other matter materially affecting the performance or nature of the professional services will not be paid for or accepted unless such change, addition or deletion is approved in advance, in writing by the District. Consultant's "other authorized representative(s)" has/have the authority to execute such written change for Consultant.

The District may terminate this Agreement at any time, with or without cause, giving written notice to Consultant, specifying the effective date of termination.

Water Leak and Loss Detection

Camrosa Water District

May 2021 (Revised August 26, 2021)

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1 Transmittal Letter

TO: Ian Prichard
Assistant General Manager
Camrosa Water District
7385 Santa Rosa Rd.
Camarillo, CA 93012
Email: ianp@camrosa.com

FROM: Reinhard Sturm
Chief Executive Officer
Water Systems Optimization, Inc.
1410 Donelson Pike Suite A-1
Nashville, TN 37217
615-457-3790
Email: reinhard.sturm@wso.us

Dear Mr. Prichard,

RE: Water Leak and Loss Detection RFP

Water Systems Optimization, Inc. (hereinafter, "WSO") is pleased to submit our proposal to the Camrosa Water District (CWD) following discussions held during the Water Loss Gap Analysis project CWD and WSO are currently working on.

Many industry leaders, ranging from the California Department of Water Resources to the Water Research Foundation to numerous water utility managers nationally and internationally, have recognized WSO's water loss preeminence. The drinking water community trusts WSO to define best practices, implement proven interventions against water loss, and pioneer new methodologies.

WSO has worked with more than 60 utilities in the United States and in South East Asia to compile and validate water audits, design water loss control strategies and to implement water loss control programs. With the majority of these partners, WSO has moved beyond water loss analysis to establish water loss control programs that save water and money.

WSO has successfully completed numerous leak detection contracts in California, Tennessee, and other states totaling over 20,000 miles and is therefore very familiar with the challenges of surveying for leaks in a variety of environments and system types. This experience enables us to provide the most appropriate water loss assessment and reduction tools for any given circumstances.

WSO respectfully submits this proposal for leak detection services to the CWD for your consideration. WSO will be pleased to provide any further clarification if necessary.

Sincerely,

Reinhard Sturm
CEO/President – WSO

2 Overview and Summary

Water Systems Optimization, Inc. (WSO) is a consulting company specialized in water loss control - water loss management is the sole focus of WSO's services. We provide a suite of offerings from assessments to implementation that inform and equip utilities to manage their water loss effectively. Water loss management requires an in-depth understanding of many aspects of a water utility's organization and operations in addition to the many best practices available. WSO and our team are uniquely equipped to assist the CWD in achieving their goal of increased efficiency and meeting regulatory targets for real loss levels through the reduction of water losses on the distribution system.

The CWD is requesting services for a comprehensive leak detection survey of the entire potable water, non-potable water, and recycled water distribution systems consisting of approximately 222 miles of pipes. During the survey, X and Y geographic coordinates of customer meters shall be collected. The purpose of the survey is to locate water leaks throughout the water network. The CWD can then proceed with the necessary repair of the located leaks to stop excessive water losses in the system. The identification and repair of hidden leaks in the distribution system will reduce water losses in CWDs system which will increase cost savings and prevent unnecessary strain on the water system caused by hidden leakage.

The Scope of Work includes: (1) detailed survey of the entire potable water, non-potable water, and recycled water distribution systems and (2) collection of X and Y geographic coordinates of customer meters. It is suggested to implement the leak detection survey between October and December of 2021. The survey will be completed by two or three experienced leak detection technicians and a variety of specialized acoustic leak detection equipment and geographic coordinate collection equipment. The various phases of the leak identification, confirmation, and location process entail the use of different types of equipment. The collection of geographic coordinates will be done with highly accurate equipment designed specifically for this purpose.

Through our extensive experience conducting leak detection work throughout the US, WSO has developed successful strategies to overcome the challenges that may arise during this type of field work. Some of the challenges of this type of work may include high noise or high traffic areas, other sources of noise, incomplete information on the mapping system, and complex pipe networks, among others. Employing a variety of strategies and equipment with distinct capacities, detailed review of maps, discussions with utility personnel, adjusting work hours, and repeat visits at different times are some of the general strategies that we use to guarantee the most possible accurate result. Each location surveyed and each potential leak noise is approached with the unique strategy that is most appropriate for that location's unique conditions.

3 Project Approach

The project involves performing a detailed leak detection survey on the complete potable, non-potable, and recycled water distribution systems composed of approximately 222 miles of water pipe and approximately 9,200 service connections. During the survey, WSO will collect geographic coordinates of all customer meters.

Prior to performing the field survey, WSO technicians will review infrastructure maps and then coordinate with the CWD the most appropriate plan and route for the survey. During this planning stage, WSO may request for the CWD to identify any areas that may require special consideration such as high-risk areas, gated communities, and sensitive or high-use customers.

The project will commence with a kick-off meeting with project and utility staff to discuss the suggested project approach and coordinate logistics. Upon agreement of approach and logistics, the WSO technicians will commence the field work.

The field work is generally performed in two phases: first, there is a general surveying phase where all assets are surveyed and second, there is a leak confirmation and pinpointing phase, where potential leak noises are verified and located. With some leaks the two steps may be performed within the same work session, but other noises in more complicated settings may need additional work sessions, additional equipment, or both to be verified and pinpoint.

During the initial survey work, WSO's leak detection technicians will use an FCS L-mic or similar acoustic leak sounding device to come into contact with all accessible meters, service connections, hydrants, and valves throughout the water distribution system to listen for any possible leak noise. During this initial survey work, GNSS receivers will also be used to collect the geographic coordinates of accessible customer meters.

If there is a leak in the surrounding area, the electronic equipment amplifies the noise generated by the leak and the technician is alerted that there is a leak. When the technicians hear a potential leak noise and there are no visible signs of a leak, such as water on the surface, all potential leak noises are verified either with an alternate method or at a later time.

During the leak verification process, the technicians work to confirm that the noise is caused by a leak and to identify a more exact location of the leak. Depending on the complexity in locating the leak, a leak noise correlator or a ground-mic may be used. This phase may also require assistance from the CWD either to open hydrants, operate valves, or shut-off water service to a particular customer. If the noise is confirmed as a leak noise and upon pinpointing the leak location, the WSO technician will mark the location of the leak as agreed with the CWD and generate a leak report documenting the location and any other relevant information. After a leak has been reported, if CWD is having trouble locating the reported leak, WSO technicians can assist in locating the leak during the excavation process.

In the event that WSO technicians cannot perform the survey during normal business hours due to traffic congestion, ambient noise, or safety concerns, the CWD will be contacted to determine if off-hours

surveying or overnight logging is appropriate. WSO will seek approval from the CWD prior to execution of any off-hours work. Off-hours surveying or utilization of overnight loggers may help the WSO technicians more efficiently execute parts of the survey and there will be no additional costs to the CWD.

The progress of surveying and pinpointing work is tracked with maps and leak reports are generated using a GIS based application that collects geographic coordinates. WSO will communicate general project progress and report located leaks as described below:

1. Project tracking sheet: WSO has developed a Water Loss Tracking sheet in Google Docs to ensure that the project staff has online access to the leak detection survey progress and results. At the end of each week WSO will submit a daily summary of miles surveyed, project status and estimated completion, number and type of leaks detected.

2. Individual Leak Sheets: For each confirmed leak, WSO will prepare a Leak Sheet that contains information such as type of leak (main, valve, hydrant, etc. leak), leak location (address if available), geographic coordinates, estimated leak flow rate, map of leak location, and photographs. WSO may modify this Leak Sheet format to accommodate any specific data request from the project staff.

3. Geographic coordinate data set: On a weekly basis, WSO will submit a geographic data set containing geographic coordinates, asset type, and asset number.

4. Final Report: WSO will provide a final report for each survey round that will include a summary of the work performed, including miles surveyed, approximate GPD loss, types of leaks found, quantity of leaks found and recommendations on future leak detection activities and cost benefit analysis of leak detection survey.

4 Project Schedule

In general terms, the field work portion of the project is expected to take between 8-10 weeks. The actual duration of the survey will depend on field conditions, number of leaks found and leakage rates.

On a weekly basis WSO will submit updates to the tracking sheet and individual leak reports for the leaks that were confirmed in the previous weeks. The final report will be submitted 1 to 2 weeks after the completion of the field work.

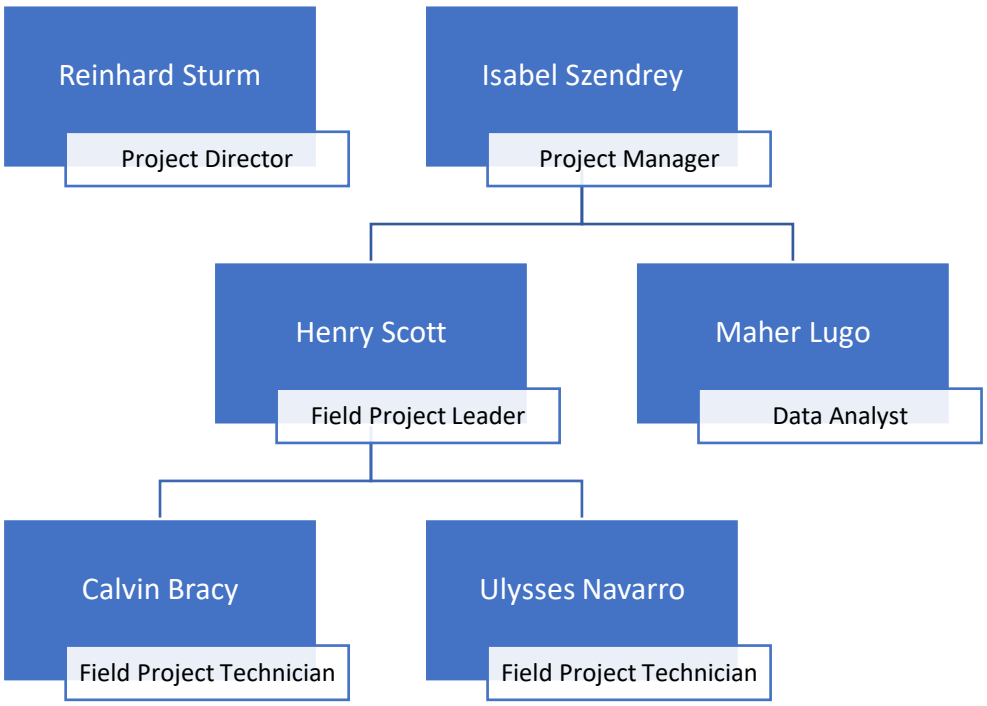
5 Project Team

WSO is able to provide a project team of leading water loss management industry experts. Reinhard Sturm the proposed Project Director is an acknowledged specialist in water loss management, nationally and internationally, through groundbreaking publications, leadership within professional associations, long track record of highly successful water loss reduction projects, and development of new software and water loss calculation models. The team members have extensive experience in managing and implementing leak detection programs.

WSO also has an experienced leak detection team, with many years of combined experience in leak detection throughout the US. Each of the team members has a wide range of experience in leak detection on various types of materials using a full range of leak detection equipment ranging from simple microphones and geophones to advanced digital leak noise correlators. The bulk of the work is expected to be performed by the Leak Detection Specialists named below with general oversight from the Project Manager. The Crew Chief is projected to be at the project site for the whole project duration. A minimum of two leak detection technicians will be at the project site at all times.

For the project duration, the CWD will have at least two leak detection technicians assigned 100% of their time. A Project Manager and Data Analyst will also provide support as needed for the management, documentation, and reporting aspects of the project.

Figure 1: Project Team



6 Supplemental Information

6.1 Introduction to WSO

WSO was formed in March 2002 and is the North American industry leader in water loss management. WSO's water loss pre-eminence has been recognized by many industry stakeholders, ranging from the California Department of Water Resources to the Water Research Foundation to numerous water utility managers throughout the country. The drinking water community trusts WSO to define best practices, implement proven interventions against water loss, and pioneer new methodologies.

WSO has successfully provided water and revenue loss management professional services to some of the largest water utilities in the U.S. e.g. Los Angeles Department of Power and Water, San Antonio Water Systems, Eastern Municipal Water District, Philadelphia Water Department, City of Phoenix, Nashville Metro Water, San Francisco Public Utilities Commission, Orlando Utilities Commission, City of Sacramento, etc. These services have included hundreds of finished water meter tests, water audits including analyzing more than forty water agency billing databases, and leak detection services, among others.

6.2 Services, Experience, and Project Background

WSO's services include water and revenue loss management professional services, including consulting and project implementation. WSO has proven ability in this field through all phases of the project life cycle from investigation, analysis, design, development, planning and implementation. Although technology plays an important role in what we do, at the core of our business are the people we employ to deliver the services for our clients. All our staff are well trained, skilled, and experienced in our specialized field, and highly motivated to provide high quality service.

WSO has successfully completed numerous leak detection contracts in California totaling about 2,000 miles and is therefore very familiar with the challenges water utilities in California are facing. This experience enables us to provide the most appropriate water loss assessment and reduction tools for the given circumstances. In addition to our work in California, WSO has undertaken one of the largest water loss management projects in the United Sates over the last fifteen years, conducting detailed leak detection on over 15,000 miles of water mains over the last 5 years. This demonstrates our proven ability to perform large quantities of leak detection survey services to high standards.

Over the last fifteen years, WSO has completed all leak detection contracts on budget and on time. The most important factor to delivering successful leak detection services is the experience and work ethic of WSO's leak detection specialists. WSO utilizes online progress tracking which is also available to our clients and allows WSO's project manager to maintain a high standard of quality control. One measure of quality of leak detection is the accuracy of

pinpointing the leak location and therefore avoidance of "dry holes". For our MWS leak detection contract, where our specialists identify on average 400 leaks a year, we have a success rate of 90% of all located leaks.

6.3 Key WSO Personnel

WSO employs a team of water loss experts throughout California, Colorado, and Tennessee. This includes four full time leak detection technicians based in our Nashville, TN office. For the project duration, the CWD will have at least two leak detection technicians assigned 100% of their time. A Project Manager and Data Analyst will also provide support on a periodic basis as needed for the management, documentation, and reporting aspects of the project. The support staff is expected to dedicate between 5-10% of their time to this project. Below resumes of the Key Project Team.

Project Director – Reinhard Sturm – CEO/President

Firm
WSO

Education
University of Natural Resources and Applied Life Science, Vienna, Austria

M.SC. in Environmental Engineering 1998

Principal Office Address
131 Kissling Street
San Francisco CA, 94103

22 Years of Experience

Professional Affiliations
International Water Association (IWA)

Water Loss Control Committee of the American Water Works Association (AWWA) and

Chair of the AWWA Real Losses Subcommittee

Reinhard Sturm is CEO/President for WSO. Reinhard has worked on Water Loss Control projects throughout the world, including countries such as USA, Canada, Malaysia, India, Sri Lanka, Kazakhstan, Egypt, and Moldova. For the past thirteen years he has been involved in some of the biggest Water Loss assessment and reduction projects in the U.S.

Reinhard was the Co-principal investigator for the AwwaRF research project #2928 "*Leakage Management Technologies*" where he was the lead researcher and lead author in addition to being responsible for the successful management of the project. This very prestigious research project, published in August 2007, provides North American water utilities with detailed guidance on the most up to date and most applicable leakage management technologies such as DMA's and advanced pressure management. Reinhard is also a co-author of the AwwaRF research report "*Evaluating Water Loss and Planning Loss Reduction Strategies*".

Most recently Reinhard served as the Principal Investigator for the WaterRF project #4372a, Real Loss Component Analysis: A Tool for Economic Water Loss Control and #4372b, Water Audits in the United States; A Review of Water Losses and Data Validity. This clearly highlights Reinhard's reputation as the leading

expert in water loss control with unmatched expertise in component analysis. Reinhard is furthermore the co-author of the professional manual published by McGraw Hill – "*Water Loss Control – 2nd Edition*". Reinhard has published more than 30 specialized papers on various topics related to water loss management, his latest publication was a peer reviewed article in the AWWA Journal on PWD's real loss control activities utilizing DMA's and pressure management to manage leakage losses.

Reinhard is actively involved in the International Water Association – Water Loss Task Force (WLTF) where he served two terms as technical secretary and he is also actively involved in the American Water Works Association – Water Loss Control Committee (WLCC), where he participated in the update of the AWWA M36 manual and the AWWA water audit model. As chair of the AWWA Real Losses Subcommittee, Reinhard was in charge of updating the real losses chapter of the AWWA M36 update.

Project Manager – Isabel Szendrey - Director

Firm
WSO

Education
Johns Hopkins University
Baltimore, MD

M.S.E. in Environmental Processes Engineering 2002

B.S. in Civil Engineering Minor in Environmental Engineering 2001

Principal Office Address
1410 Donelson Pike
Suite A-1
Nashville TN, 37217

18Years of Experience

Professional Affiliations
American
Water Works Association (AWWA)

Professional College of Engineers and Land Surveyor of PR (CIAPR)

Isabel Szendrey is Director of NRW Management at WSO assisting water utilities understand and manage their water losses. She currently leads the Nashville, TN office which offers full water loss management services including water audits, source meter testing, leak detection, and district metering area (DMA) operation, among others.

Isabel has experience with NRW reduction programs throughout the US and Puerto Rico both as a water agency representative and as a consultant. She has been involved in numerous facets of NRW reduction initiatives such as program and project development and execution, developing financial impact projections, establishing operational metrics, project procurement, contract negotiation, field work, and research.

As a water loss professional, Isabel has worked with the development of validated water audits following industry best practices including meter testing, customer consumption analysis and profiling, leakage modeling, and detailed component analysis. She has also been involved in the development and analysis of cost-effective strategies

considering operational feasibility across multiple departments within the organization, such as field operations, information systems, planners, and maintenance departments.

Prior to joining WSO, Isabel served as Executive Advisor to the Executive President of the Puerto Rico Aqueduct and Sewer Authority (PRASA) developing strategies for the reduction of water losses with the aim of increasing revenue and reducing operating expenses. PRASA is the principal water and wastewater utility in Puerto Rico serving over 1.2 Million customers with $1.1 billion in annual revenues. Isabel was responsible for developing and directing an organizational unit tasked with the reduction of water losses. She also advised the Executive President on legislation, plans, projections, budget, and metrics. By establishing industry best practices, PRASA achieved 25% reduction in NRW volume between 2012 and 2016. An independent evaluation of PRASA's operations stated that PRASA's NRW practices represent best-in-class practices.

Isabel has also worked for Malcolm Pirnie Engineers of PR (currently part of the Arcadis network) and CSA Group, both engineering firms ranked by ENR. At MPPR she provided development and procurement services for projects aimed at reducing commercial losses, including a public private partnership for customer service operations. She also managed various water and wastewater capital improvement projects during the pre-construction phase. At CSA Group, Isabel worked with environmental investigations and permits for various types of projects such as water/wastewater infrastructure, residential developments, and roads.

Data Analyst – Maher Lugo – Technical Consultant

Firm
WSO

Education
Polytechnic University of Puerto Rico

Courses for a B.S. in Environmental Engineering (2012-2015)
University of Puerto Rico, at Mayaguez

B.S. in Geology
Minor in GIS & Remote Sensing
2004

Principal Office Address
1410 Donelson Pike
Suite A-1
Nashville TN, 37217

15 Years of Experience

Maher Lugo is a Technical Consultant at WSO providing support in strategic, technical, and managerial aspects of several types of non-revenue water (NRW) management projects. Maher has experience with NRW reduction programs in Puerto Rico both as a water agency representative and as a consultant. He has been involved in NRW reduction initiatives through research and data analysis, field work, definitions of strategies, implementations of projects and project procurement. He is also experienced with District Metering Areas (DMA) work.

As a water loss professional, Maher has worked with the development of water balances and water audits following industry best practices including water production analysis, customer consumption analysis, and detailed component analysis. He has also been involved in the development and analysis of cost-effective strategies considering operational feasibility.

Prior to joining WSO, Maher served as Technical Advisor of the NRW office of the Puerto Rico Aqueduct and Sewer Authority (PRASA) developing strategies for the reduction of water losses with the intention of increasing revenue and reducing operating expenses. PRASA is the principal water and wastewater utility in Puerto Rico serving over 1.2 Million customers (97% of the island) with $1.1 billion in annual revenues. Maher was responsible for evaluating, developing, and identifying opportunities to improve data quality for better decision making to reduce water losses. Establishing industry best practices, PRASA achieved 25% reduction in NRW volume between 2012 and 2016. An independent evaluation of PRASA's operations stated that PRASA's NRW practices represent best-in-class practices.

Maher has also worked for CSA Architects & Engineers for more than 10 years. CSA is an engineering firm ranked by ENR. At CSA he worked in different types of projects in which he performed a variety of roles. Some of those projects included thorough hydraulic evaluations of water distribution systems which involved infrastructure assessment through field investigations, field measurements, GIS analysis, and hydraulic models (H2OMap and Info Water). The evaluations resulted in recommendations to optimize distribution systems by reducing energy cost, consolidating of facilities, reducing authorized unbilled consumption, improving service in deficient areas, lowering or stabilizing water pressures and reducing leakage. At CSA, Maher also

worked with environmental investigations and permits for several types of projects such as water/wastewater infrastructure, residential developments, wind farms and roads. He also worked as a GIS Specialist for infrastructure assessment projects.

Lead Leak Detection Crew Chief – Henry Scott – Field Project Leader

Firm
WSO

Education
University of Maryland College Park, MD

BS in Economics June 2005

Principal Office Address
1410 Donelson Pike
Suite A-1
Nashville, TN 37217

15 Years of Experience

Professional Affiliations
American Water Works Association (AWWA)

Henry Scott is the Leak Detection Crew Chief at WSO responsible for managing field technicians. He currently leads the Nashville, TN field team which offers full water loss management services including water audits, source meter testing, leak detection, and district metering area (DMA) operation, among others.

As a water loss professional, Henry has worked with various water utilities across the country to develop plans for real loss mitigation following industry best practices. He has worked with clients on the implementation of GIS based leak detection survey data sets, planning and tracking.

Prior to joining WSO, Henry operated his own company providing consulting, training, and leak detection. He also served 12 years as the NRW Program Manager for Wachs Water Services (Currently part of Xylem, Inc). Henry was responsible for developing and directing an organizational unit tasked with the reduction of water losses for all U.S. clients. Henry has worked with some of the largest public utilities and water supplier in the country including Baltimore Department of Public Works, DC Water, Washington Sanitary Suburban Commission (WSSC), the Puerto Rico Aqueduct and Sewer Authority (PRASA), San Antonio Water System (SAWS), City of Houston Water, Massachusetts Water Resources Authority (MWRA), and the New Hampshire Department of Environmental Services (NHDES). Henry has extensive experience in water distribution system operations including valve inspection/ exercising, water system isolations or shutdowns, large diameter water valves and watermains, and fire flow testing according to AWWA M-17 and NFPA 291. Henry has experience in the development and training of both contractor and utility personnel. He has performed training programs for both the City of Baltimore, MD water maintenance department and the City of Houston water maintenance department.

Leak Detection Specialist – Ulysses Navarro – Field Project Technician

Firm
WSO

5 Years of Experience

While working on a leak detection program in Puerto Rico, Ulysses Navarro was hired as a temporary employee to support our work efforts locally. Navarro, as he is known to his friends, was a huge bonus in his ability to help WSO employees working in a foreign country.

Navarro had served an enlistment in the Army before his temp job with WSO, again showing how military service can help develop his work ethic and his ability to "get the job done".

After the Puerto Rico project was completed, WSO was in a position where we needed to hire additional people for leak detection. We were impressed enough with Navarro's work that we offered him a job which he accepted. Navarro's permanent work assignment since joining WSO has been the leak detection program for Nashville's METRO Water Services. While working there, Navarro has participated in over 3,000 miles of leak detection that has located over 550 leaks for MWS.

In addition to working in Nashville, Navarro has worked on projects in several utilities in California. Navarro has been a great representative for WSO every place that he has worked. Navarro makes managing a project easy in that we know that if he is told to do something, it will be taken care of in a professional manner.

Field Technician – Calvin Bracy – Field Project Technician

Firm
WSO

10 Years of Experience

Calvin works for WSO as a Field Technician for our leak detection team and our District Metering Areas (DMA) Program. He has experience as a leak detection technician. He has performed surveys of the distribution system with the use of different acoustic technologies to pinpoint suspected leaks and report them. He has shown through the years to be a reliable and efficient resource.

Calvin also works our District Metering Areas (DMA) Program. He examines the water infrastructure operational conditions to conduct DMA analysis. He coordinates the different steps to performs a DMA with water utilities personal to ensure metering runs properly with the minimum impact in the systems operation. His role includes assessment of valve operations for DMA boundary validations and inlet or outlet measurements. He is very responsible and conducts his work in a safely and professional manner.

6.4 Equipment

WSO Leak Detection Technicians employ a variety of equipment and tools to assist them in the identification and locating of leaks. They are all trained and well versed in the use of the equipment.

Comprehensive survey tools:

Subsurface LD-18 leak detection sounding device and ground microphone

The new LD-18 Digital Water Leak Detector is a water leak detecting instrument with automatic noise reduction from intermittent interfering noises, like passing vehicles, people talking, and pedestrian footsteps. The unit has a digital amplifier with automatic noise reduction of intermittent sounds, high and low filters, storage and graphing of sound levels at different locations on the pipe, bar graph and numeric display of sound loudness. This leak detection survey tool will be primarily utilized to identify possible leak noises on the water system appurtenances and secondarily for listening over the ground surface to confirm correlation results.

Fluid Conservation Systems L-mic leak detection sounding device

The Lmic is an easy-to-use, low cost, electronic listening stick and ground microphone combined. It is ideal for general leak sounding operations and can be fitted with either a tripod foot (for use as a ground microphone) or probe rods (for sounding at fittings or in soft ground). This leak detection survey tool will be primarily utilized to identify possible leak noises on the water system appurtenances

Leak pinpointing tools:

SebaKmt Correlux C-3

The Correlux C-3 correlator locates leaks in drinking water pipes. Pressurized water at the leak location creates a noise which travels out in all directions of the pipe. This noise is recorded, amplified and sent wirelessly to the correlator by two sensors (piezo microphone, hydrophone) which are attached to the pipe (e.g. valve, hydrants). The Correlux C-3 compares both signals (correlation) and calculates the exact distance to the leakage on the basis of the delay time of the signals, the sensor distance and the sound velocity in the pipe. The unit is capable of both offline and online correlation measurements as well as real time sound velocity analysis of the leak noise. This leak correlator will be used primarily for confirming and pinpointing leak noises identified during the survey phase.

Fluid Conservation Systems Touch Pro

The Touch Pro from FCS represents a breakthrough in leak detection technology. It features improvements throughout the leak noise processing path to provide improved performance, especially in the most difficult leak detection situations. This enables it to give the best performance in traditionally difficult conditions, such as on plastic and large diameter pipes. The unique Automated Filtering Intelligence System (AFIS) automatically runs up to 55 different filter combinations on each correlation, checking the quality of the result and optimizing the filters until the best result is obtained. This leak

correlator will be used primarily for confirming and pinpointing leak noises identified during the survey phase.

6.5 References

6.5.1 Reference Project #1 – South Coast Water District

Client:	South Coast Water District
Project Title:	Water Distribution System Leak Detection Survey
Project Manager:	Lucy Andrews/Kim Manago
Contact Person:	Mr. Hal Hylton – CMMS Administrator
Address:	31592 West Street, Laguna Beach, CA 92651-6907
Telephone Number:	Office: (949) 499-4555, Ext.3114
Email:	hhylton@scwd.org
Project Start Date:	1/15/2018 (1st Phase) and 3/4/2019 (2nd Phase)
Project Completion Date:	2/26/2018 (1st Phase) and 3/22/2019 (2nd Phase)

General Project Description:

For two consecutive years (FY2017-2018 & FY2018-2019), South Coast Water District contracted WSO to implement a detailed leak survey in its distribution network. The first year covered around 100 miles of mains and the second year covered the remaining 85 miles of main. During the first year's survey, WSO found a total of 61 leaks throughout the distribution system. Of the distribution side leaks found, 57 were on customer meters or service lines and the remaining 4 were located on valves or hydrants. During the second survey, WSO found a total of 19 utility side leaks, mostly on services and meters, and 8 customer side leaks. The lack of main breaks suggests that the distribution system is in good condition. This is likely due to the combination of a moderately aged system, low soil reactivity and mild winters. However, the more fragile infrastructure (service connections) exhibits a higher failure frequency. It can be argued that only a fraction of the leaks found in this comprehensive leak survey would have been found by a general leak detection survey, in which only the hydrants and valves are sounded.

6.5.2 Reference Project #3 – Leak Detection for City of Santa Cruz

Client:	South Coast Water District
Project Title:	Water Distribution System Leak Detection Survey
Project Manager:	Kate Gasner
Contact Person:	Mr. Neal Christen – Water Conservation Representative
Address:	212 Locust St, Santa Cruz, CA 95060
Telephone Number:	Office: (831) 420-5235
Email:	NChristen@cityofsantacruz.com
Project Start Date:	June 1, 2018
Project Completion Date:	June 30, 2018

General Project Description:

In June of 2018, the City of Santa Cruz partnered with WSO to conduct proactive, comprehensive distribution system leak detection on 100 miles of main pipe. This 100-mile survey built on a previous 100-mile survey conducted in 2016. As a result, a total of 200 miles of main pipe have been sounded to date, accounting for 74% of Santa Cruz's 272 miles of distribution main pipe.

A WSO leak detection technician listened to almost all accessible infrastructure and fittings, including customer meters, fire hydrants, blow-off valves, and backflow preventers, to ensure that all acoustically detectable leaks on the survey route were identified. A handful of appurtenances were not sounded due to accessibility and safety challenges. When leak noise was heard, WSO recorded initial leak characteristics in a leak report form for Santa Cruz staff to verify when convenient.

In total, four potential distribution-side leaks were identified. Upon investigation, two leaks were determined to be on the customer side of the meter. One minor hydrant leak was traced to a hydrant sealing problem, and another suspected hydrant leak was attributed to ambient sound, rather than actual leak noise. This survey effort corroborated the water audit's estimate of minimal volumes of leakage.

6.5.3 Reference Project #2 – Humboldt Community Services District

Client:	**Humboldt Community Services District**
Project Title:	Water Distribution System Leak Detection Services
Project Manager:	Reinhard Sturm
Contact Person:	Mr. David Hull – General Manager
Telephone Number:	(707) 443-4550 x216
Email:	dhull@humboldtcsd.org
Project Start Date:	8/21/17
Project Completion Date:	9/24/17

General Project Description:

WSO completed a comprehensive leak detection survey of 80% of the Humboldt Community Services District (HCSD) distribution system. 94 miles of main were surveyed by WSO's leak detection specialists.

WSO found a total of 27 leaks throughout the distribution system: 14 service leaks, 8 meter leaks, 3 main leaks, and 2 hydrant leaks. After repair of all the leaks, an estimated 297,000 gallons per day (0.297 MGD) in leakage losses were prevented. WSO discovered 0.29 leaks per mile of main surveyed, indicating the distribution system is experiences leaks slightly more frequently than the US median. In addition to the distribution-side leaks, 7 customer-side leaks were identified. Customer side leaks are not considered a form of loss but identifying these leaks can improve customer satisfaction and improve utility water supply reliability in times of drought. It can be argued that only a fraction of the leaks found in this comprehensive leak survey would have been found by a general leak detection survey, in which only the hydrants and valves are sounded.

6.5.4 Reference Project #4 – City of Folsom: Water Distribution System Leak Detection Survey

Client:	**South Coast Water District**
Project Title:	Water Distribution System Leak Detection Survey
Project Manager:	Reinhard Sturm
Contact Person:	Mr. Vaughn Fleischbein, PE – Associate Engineer
Address:	50 Natoma Street Folsom, CA 95630
Telephone Number:	916-351-3415
Email:	vfleischbein@folsom.ca.us
Project Start Date:	2/2015
Project Completion Date:	9/2015

General Project Description:

WSO completed a comprehensive leak detection survey of the City of Folsom distribution system. The entire network, including the Ashland area, was surveyed, a total of 332.0 miles of mains, between 2/19/2015 and 3/20/2015. WSO has also performed leak detection throughout the City of Folsom on three separate occasions:

- Round 1: Completed in May 2011, 260 miles surveyed (entire system except Ashland).
- Round 2: Completed in February 2012, 260 miles surveyed (entire system except Ashland).
- Round 3: Completed in March 2015, 332 miles surveyed (entire system)

All detected leaks were documented, leak flow rates were estimated based on either the visible appearance of the leaks or the intensity of the noise produced by non-visible leaks, and leak locations were recorded using a standard leak report to guide the repair efforts. These leak reports were then provided to City of Folsom staff. City staff investigated the leak locations for verification purposes. Where there were doubts about the presence of leaks at particular locations, WSO performed a re-survey on 9/17/2015.

WSO identified 67 City-side leaks, comprised entirely of service connection and meter leaks. These leaks are estimated to cumulatively generate 208.8 gallons per minute (GPM) or 0.9 Acre-Feet per Day (AFD) in leakage. Upon repair of City-side leaks, Folsom can expect to annually recover a best estimate of 336.8 Acre-Feet (AF).

WSO identified an additional 21 customer-side leaks that are estimated to cumulatively generate 38.7 GPM in leakage. Upon customer repair of these leaks, the City can expect to annually recover a best estimate of 5.1 AF.

6.5.5 Reference Project #5 – Nashville Metro Water Services (MWS)

Client:	**Nashville Metro Water Services**
Project Title:	Water Audits and Leakage Control
Project Manager:	Kevin Burgers
Contact Person:	Ms. Jennifer Lind, PE, Engineer
Address:	1600 Second Avenue North, Nashville, TN 37208
Telephone Number:	(615) 880-1317
Email:	Jennifer.lind@nashville.gov
Project Start Date:	March 2015
Project Completion Date:	Ongoing - Projected for January 2021

General Project Description:

The MWS distribution system was sectorized into 102 temporary District Metered Areas (DMAs) by closing valves within the network. Flow and pressure in each DMA are monitored over a 48-hour period using insertion type metering devices and data loggers. Large customers with exceptional night use were also logged to measure their actual consumption during the low flow periods normally between 2am and 4am. This consumption, along with the other legitimate night-time usage, was then deducted from the measured inflow into the district to determine the actual amount of leakage with the district using the Minimum Night Flow (MNF) analysis methodology. Pressure step testing was also carried out to determine the leakage–pressure relationship in each DMA. This allowed WSO to determine the amount of fixed and variable area leakage in the DMA and provided an estimate of the amount of recoverable leakage which could be detected and pinpointed with sonic and leak correlation equipment.

The DMAs were prioritized for leak detection and, if warranted, sonic leak detection was performed by WSO within the prioritized DMA to pinpoint detectable leaks. Each detected leak was reported to MWS and their direct labour crews then responded to carry out repairs. Once all leaks in the DMA had been repaired, WSO carried out a re-measurement of flow and pressure to determine the baseline flows for the DMA. Periodic re-measurements were then carried out to determine the rate of rise of leakage. This provided data to enable calculation of the economic level of leakage intervention. In 2015, WSO completed the second five-year contract year (2010 to 2015) with MWS. After a competitive bidding process, WSO was awarded the next 5-year leakage control contract (2015– 2020) by MWS in March 2015. The project has been extended and is now in progress. Table 2 provides a brief summary of the results of the past 5 years.

Table 2. Nashville Metro Water Services Leak Detection Results

Year	Mileage Surveyed	Total Number of Leaks Detected
FY15/16	2,912	420
FY16/17	2,879	389
FY17/18	2,933	315
FY18/19	3,008	213
FY19/20	3,468	795

6.6 Work Plan

The work plan with approximate timelines is presented below. All the work will be performed by WSO employees. No work will be subcontracted.

2-3 Weeks Prior to Mobilization/Field Work

- Review infrastructure maps (GIS files preferable)
    - Define route and strategy
    - Identify areas that may require any special considerations (off-hours work, safety concerns, etc.)
    - Prepare field maps
    - Prepare Project Tracking Sheet
    - Prepare Leak Report Template

Week 1

- Mobilization to CWD
- Kick-off meeting with CWD (remote or in person, if remote it may be done prior to mobilization)
    - Definition of project logistics, such as contact person and preferred contact method, frequency, etc.
    - Review/Agreement on Leak Report Template and data to be collected
    - Definition of specifications for leak markings on the field

Weeks 1 – 10

- Performance of field work
    - Initial general survey
    - Leak confirmation process as required by field conditions
    - Periodic review or assistance with previously reported leaks, as needed
- Routing Reporting and Check-in
    - Weekly submission of confirmed leak reports
    - Weekly update to the Project Tracking Sheet
    - Periodic communication regarding off-hours work, requested assistance for leak confirmation, and any other project issues to discuss

Upon completion of Field Work

- Preparation of Final Report
    - Data Review

The main contact person during field work for field work logistics for WSO will be the Field Project Lead. During the Kick-off meeting the Field Project Lead will discuss with the main contact person for the CWD the preferred method and frequency of communication to discuss project progress, logistics, and other issues that may need attention. WSO proposes weekly check-ins with the CWD but may adjust this as necessary.

Our experience and established methodologies have been developed over more than fifteen years of leak detection work in the US to guarantee the quality of our work. WSO has completed all leak detection contracts on budget and on time. We understand conditions underground may have a few surprises that are not visible aboveground – and may not be documented in maps – thus increasing the difficulty in reporting hidden leaks. The most important factor to delivering successful leak detection services is the experience and work ethic of WSO's leak detection specialists. They have a diverse experience of working with many distribution networks throughout the US and they are constantly performing this type of work. Our technicians not only have vast knowledge of real-life conditions of distribution systems, they also have expertise in a variety of state-of-the-art leak detection equipment used by WSO. We do not just employ one method or one type of equipment. When complicated conditions require it, we employ multiple methodologies to confirm our findings. However, we are also aware that regardless of all effort, some leaks may be difficult to pinpoint without excavation. When this condition arise, WSO will notify the CWD that the reported leak may require additional confirmation with assistance from the CWD.

In addition to the vast practical field experience of our technicians, WSO utilizes online progress tracking which is also available to our clients and allows WSO's project manager to maintain a high standard of quality control.

7 Project Budget

Detailed Leak Survey: $300/mile equivalent to $66,600
Traffic control (if necessary): reimbursement for actual cost
Collection of coordinates during leak survey: $75,900

Total Not to Exceed Cost for requested survey of 222 miles of the network and geographic coordinate collection: $142,500

8 Appendix: Example Leak Detection Survey Forms

HCSD
5055 Walnut Drive
Eureka, CA 95503

WSO

WATER SYSTEMS OPTIMIZATION
Contact: Matthew D. Kelley
Mobile: 979.341.4002
Office: 615.457.3790

LEAK REPORT

Date: 10/9/2018 **Report #: 001**

SURVEY ☐ RECHECK ☐ LOCATION ERROR ☐ REQUEST ☒

LOCATION		*LEAK SUSPECTED ON*		*LEAK INDICATION*
Zone: N/A	*Map: H13*	*Main* ☒	*Valve* ☐	*Sonic* ☒
Address: Christopher Ln	*Parcel: N/A*	*Service* ☐	*Hydrant* ☐	*Correlation* ☐
Cross Street: Home Dr		*Meter* ☐	*Other* ☐	*Visible Water* ☐

DETAILS				
ESTIMATION:	GPM 30	Priority 1		
COVER:	Soil ☐	Gravel ☐	Asphalt ☒	Concrete ☐ Meter Pit ☐
COMMENTS:	Leak is on 6" AC			
TECHNICIAN:	Matthew Kelley			

DOES THIS LEAK REPORT SUPERSEDE AN ORIGINAL LEAK REPORT? YES ☐ NO ☒

REASON:

HCSD
5055 Walnut Drive
Eureka, CA 95503

WSO

WATER SYSTEMS OPTIMIZATION
Contact: Matthew D. Kelley
Mobile: 979.341.4002
Office: 615.457.3790

	LEAK GRID COORDINATES:
	40° 44'25" N 124° 08'54" W DMS
	

Water Loss Control Gap Assessment

Camrosa Water District

May 2021

WSO

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1 Executive Summary

Between December 2020 and April 2021, Camrosa Water District (CWD) worked with Water Systems Optimization (WSO) to complete a thorough review of water loss control initiatives and evaluate opportunities for cost-effective water loss control at the District. Industry leaders and water managers recognize the importance of optimizing distribution system efficiency as a potentially cost-effective water conservation measure. Although CWD is already engaging in water loss control, WSO and CWD identified opportunities for refinement and growth, which are presented in this report.

Several water loss control opportunities introduced in this report focus on enhancing data management practices. It is becoming increasingly important to verify the water loss data used to complete and submit yearly water audits to the Department of Water Resources (DWR) in anticipation of the State Water Resources Control Board (SWRCB)'s publication of supplier-specific water loss performance standards in 2021. The SWRCB will use validated water audit data to evaluate water suppliers' compliance with these standards beginning in 2028. This makes it a critical time for CWD to continue focusing on minimizing water loss throughout the distribution system.

To assist CWD in updating its water loss strategy, WSO completed the following tasks:

1. **Task 1:** Review past water audits and supporting data to interpret key performance indicators and gain high level appreciation for need to refine data collection and instrument maintenance practices.
2. **Task 2:** Conference calls with relevant agency staff from engineering, production, operations, billing, and finance to better understand the District's current operational practices and interest in water loss control.
3. **Task 3:** Written report describing current data collection and management practices and prioritized water loss control activities for the District to consider as part of a broader water loss control effort. In addition to this report, a water audit preparation and data collection handbook was prepared to enable the consistent preparation of the annual water audit.

After conducting an initial baseline assessment of CWD's operational practices and system performance metrics, the project team evaluated and prioritized opportunities to better assess and reduce water loss in the potable system. The primary results of that work are summarized in the Strategy Overview, while specific details about each opportunity are discussed throughout the report.

1.1 Strategy Overview

The water loss control strategy may help guide CWD's future water loss control efforts (Figure 1). The recommendations featured in the strategy have three primary goals:

1. **Increase confidence in water loss assessment:** The annual water audit requires complete, consistent, and accurate data sources to provide reliable assessments of water loss over time. Although CWD already focuses on data collection, management, and reporting, several recommendations in this strategy have the potential to refine these practices.
2. **Determine the baseline of leakage:** CWD's historical water audits indicate that the system is experiencing substantial leakage. In contrast, the volume of reported leakage encountered in the field by CWD is relatively low. To investigate the extent of recoverable leakage within the

distribution system, CWD should consider field validating their leakage through comprehensive leak detection, in which every available fitting on main pipe and service connections is sounded.

3. **Prepare for state regulatory requirements:** The current draft water loss performance standards issued by the SWRCB in December 2020 requires CWD to reduce water losses to 18.8 gallons per connection per day by 2028. This strategy will assist CWD in evaluating the extent of water loss in their distribution system. In addition, this strategy serves as documentation of existing and future efforts to minimize water losses at CWD.

The water loss control strategy recommended for CWD includes the following activities:

Water Loss Management Enhancement

- **Volumetric Testing of Import Meters**: Currently, most of CWD's water supply is provided by imported water from Calleguas Municipal Water District (CMWD). Although CMWD annually calibrates the import meters, these meters are not tested to determine if they are accurately detecting volumes. It may be useful to discuss the possibility of have these meters tested for accuracy with CMWD to ensure that they are accurately registering volume.
    - Goal(s): Increase confidence in water loss assessment.

Data Management

- **Billing Data Management Refinement**: CWD staff investigates and verifies hundreds of flagged customer meter reads before sending out bills each month. Because this process can be time-consuming and the billing department is relatively small, CWD should consider investing in technology that can streamline monthly meter verification.
    - Goals(s): Increase confidence in water loss assessment.
- **Reported Leakage Data Refinement**: CWD has developed a database with reported leaks dating back to 2017. To refine this database going forward, CWD staff should consider documenting the timestamp in which each leak was stopped or repaired and flushing volumes used during repairs. Furthermore, CWD staff should ensure that orifice size and local pressure are documented for each leak.
    - Goal(s): Increase confidence in water loss assessment, prepare for state regulatory requirements.
- **Zonal Water Loss Analysis Refinement**: CWD examines monthly production and consumption volumes to estimate the volume of water loss per pressure zone. To refine this analysis, CWD staff should consider tracking water loss in normalized units to enable better comparison of water loss between zones. In addition, staff should continue to ensure pressure zones are hydraulically discrete so that the zonal water loss analysis may effectively pinpoint water loss to specific zones (see Pressure Zone Assessment for more information).
    - Goal(s): Increase confidence in water loss assessment, prepare for state regulatory requirements.

Apparent Loss Recovery

- **Small Customer Meter Testing**: Although CWD has replaced 95% of their customer meter registers with AMI within the past decade, many meter bodies were not replaced and the accuracy of the customer meter population is unknown. CWD should consider testing a random, representative sample of small meters (less than 2 inches) to assess the accuracy of their small customer meter population.

    - Goals(s): Increase confidence in water loss assessment.
- **Large Customer Meter Testing**: CWD may be interested in testing several large customer meters (greater than 2 inches) to verify their accuracy, as these meters tend to register a greater portion of consumption than small meters and thus have a larger impact on revenue generated by the District's water sales.
    - Goals(s): Increase confidence in water loss assessment.
- **Customer Meter Replacement:** CWD staff monitor customer meters in the field to gauge the performance of different meter brands and models. The District may be interested in implementing a customer meter replacement strategy targeting historically low-performing meter types, such as Sensus SR2 and Sensus iPERL meters, for replacement.
    - Goals(s): Increase confidence in water loss assessment.

Real Loss Recovery

- **Pressure Zone Assessment**: CWD should continue to verify and monitor the integrity of its five pressure zones to ensure that they are hydraulically discrete. Hydraulically discrete zones are essential to effectively conducting a zonal water loss analysis. It may be useful to install pressure data loggers along zone boundaries to confirm there is no correlation between pressures inside each zone.
    - Goal(s): Increase confidence in water loss assessment.
- **Proactive Leak Detection**: CWD's has engaged in proactive leak detection in the past. To refine proactive leak detection, CWD should ensure that every available appurtenance is sounded through comprehensive leak detection surveys of the system. Comprehensive leak detection can assist in determining the extent of unreported leakage and addressing any backlog of leakage.
    - Goal(s): Increase confidence in water loss assessment, determine the baseline of leakage, prepare for state regulatory requirements.
- **Real Loss Component Analysis:** After completing comprehensive leak detection, CWD should consider completing a real loss component analysis (RLCA) using latest annual water audit results, reported leak work order data, and recent leak detection findings to establish the unique profile of real loss. A RLCA can categorize real loss into reported, unreported, and background leakage components, which is useful since each component of leakage can be addressed through specific, targeted intervention strategies.
    - Goal(s): Increase confidence in water loss assessment, determine the baseline of leakage, prepare for state regulatory requirements.

Limited staffing may impede the completion of these water loss control management activities. CWD may need to consider hiring additional staff or contracting out some of the activities, depending on the capacity of staff.

Figure 1: Timeline of Prioritized Water Loss Control Activities

1.2 Water Loss Control at CWD

CWD's current operations and data management practices support tracking and managing real and apparent water loss through:

- **Annual water auditing:** CWD performs annual water auditing using standard American Water Works Association (AWWA) M36 methodology. The water audit is validated by an internal certified validator and provides a high-level indication of water loss performance.
- **Source meter calibration and testing:** CWD electronically calibrates secondary instrumentation and conducts accuracy testing on their active groundwater well meters annually to verify that they are capturing their groundwater production volumes correctly. Accurate production volumes are critical to reliable water auditing.
- **Customer meter AMI installation:** Approximately 95% of CWD's customer meters have been retrofitted with Advanced Metering Infrastructure (AMI). AMI technology provides higher resolution and more reliable meter read data, in comparison to monthly manual meter reads.
- **Efficient response to reported breaks:** By utilizing Mobile 311 for the documentation of breaks, field staff can respond to work orders related to reported leaks quickly and repair breaks effectively, minimizing leakage.
- **Zonal water loss analysis:** CWD analyzes their water production and usage volumes monthly to estimate water loss in seven zones. They maintain a record of monthly zonal water loss dating back several years, which can be used to assess the trend of water loss in the potable system.
- **Proactive leak detection**: In 2020, Wachs Water Services surveyed CWD's distribution system for leaks, but not every available appurtenance was sounded. CWD is planning to conduct leak detection surveys targeting all available appurtenances going forward.

1.3 Past Water Loss Performance

CWD has submitted water audits every year since 2017, as required by SB-555. A water audit is an accounting exercise used to systematically track all sources and uses of water in a distribution system. By comparing the volume of water produced to the volume of water consumed and adjusting for known errors, the audit provides a "top-down" evaluation of water loss, non-revenue water, and overall system efficiency. Table 1 shows selected performance indicators from water audits submitted for fiscal years 2017 to 2020.

Table 1: Selected Water Audit Performance Indicators 2017 – 2020

Water Audit Performance Indicator	FY 2017	FY 2018	FY 2019	FY 2020
Total Water Losses (AF)	328.7	607.1	485.4	638.4
Apparent Losses (AF)	143	153.6	135.4	177
Value of Apparent Loss per Year	$193,733	$218,856	$192,208	$281,355
Apparent Loss (gal/conn/day)	17	16.2	14	18
Real Losses (AF)	185.7	453.5	349.9	461.4
Value of Real Loss per Year	$139,901	$399,459	$370,872	$528,466
Real Loss (gal/conn/day)	22.1	47.9	36.1	47
Infrastructure Leakage Index	1.12	2.58	1.97	2.58

WSO reviewed the past four years of water audits for CWD. Recent water audit results indicate that there may be significant leakage in CWD's potable system. Figure 2 depicts the normalized rate of real and apparent losses for the four water audits submitted to DWR for fiscal years 2017 - 2020. The y-axis shows the normalized rate of loss in gallons per connection per day; the x-axis shows the fiscal year. The height of each bar indicates the value for that year.

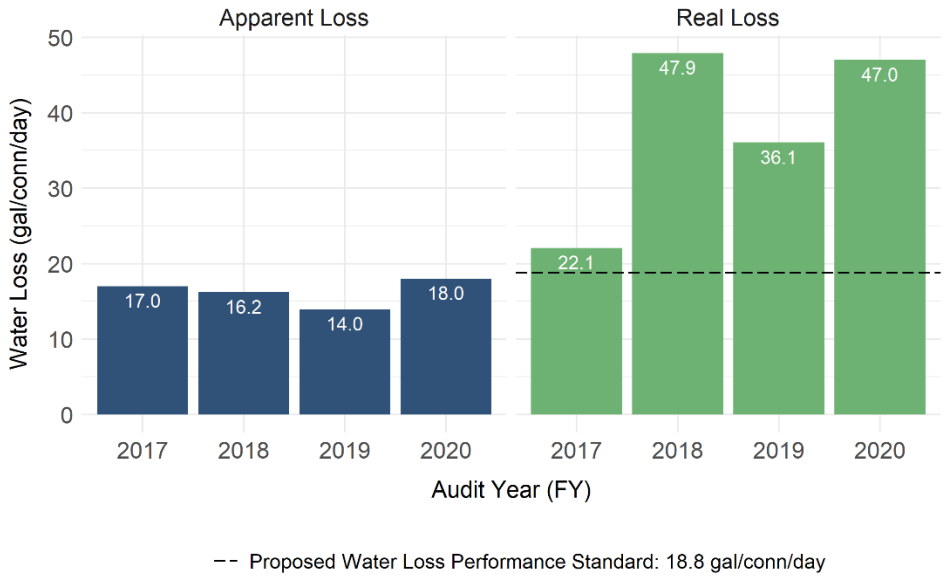

Figure 2: Real and Apparent Loss 2017 – 2020

Figure 2 displays a substantial increase in real loss from 2017 to 2018; water audit results indicate that real loss more than doubled. Through conversations with CWD staff, it was determined that this change in real loss estimated by the water audit could potentially be attributed to the availability of more accurate data to complete FY 2018's water audit, rather than notable changes in operation. Additionally, real loss appears to stabilize from 2018 to 2020. From 2018 to 2020, real loss averages 43.7 gallons per connection per day, which is significantly greater than the SWRCB's draft proposed water loss performance standard of 18.8 gallons per connection per day for CWD, indicated by the dashed black line in the figure.

CWD's current water loss, as estimated from historical water audits, will need to be reduced to meet SWRCB regulatory compliance. CWD staff have noted that they have not encountered many reported leaks in the field, so it is noteworthy that the water audit is indicating large levels of system leakage. The District has tracked reported leaks since 2017 and based on examination of this data, CWD has a substantially smaller failure frequency of its main lines (0.71 leaks per 100 miles per year) in comparison to the average failure frequency in North America (25.0 leaks per 100 miles per year) based on a literature review conducted for the Water Research Foundation[1] (Figure 3).

[1] WRF (Water Research Foundation). 2014. Real Loss Component Analysis: A Tool for Economic Water Loss Control. Denver, Colo.: WRF.

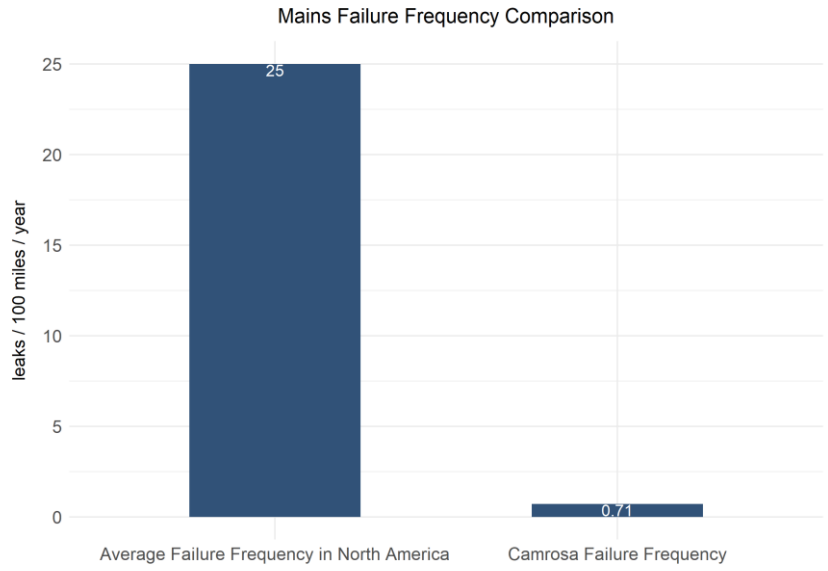

Figure 3: CWD and North American Mains Failure Frequency Comparison

While CWD has not encountered many reported main line leaks in the past four years, a greater number of service connection leaks have been reported during this time. CWD's failure frequency of service connections (2.25 leaks per 1,000 service connections per year) is equal to the AWWA's Unavoidable Annual Real Loss (UARL) component of reported service line failures as reported in the Water Research Foundation's Real Loss Component Analysis[1] (Figure 4).

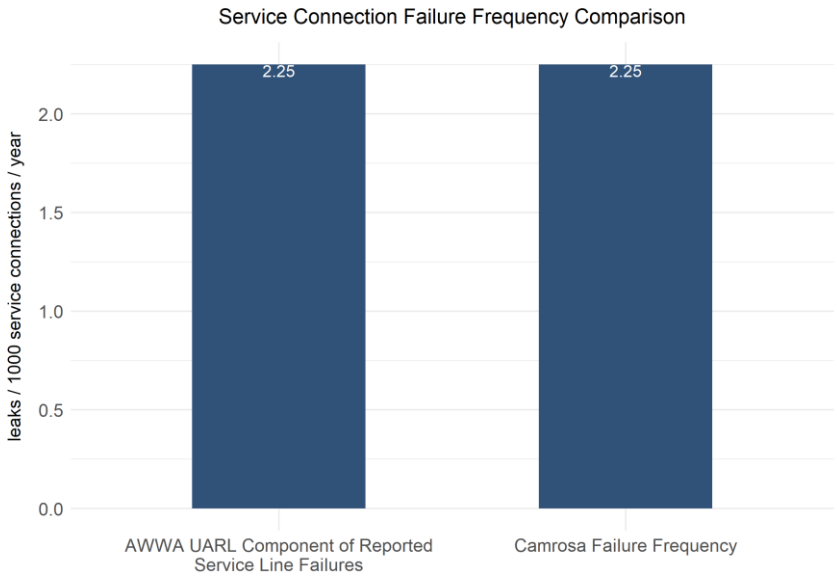

Figure 4: CWD and AWWA Service Connection Failure Frequency Comparison

The water audit's relatively large estimate of real losses may indicate one of two things:

- **Water audit data quality concerns:** If CWD truly exhibits low levels of leakage, then the water audit is mistakenly estimating substantial real loss in the CWD potable system due to erroneous data. CWD would need to refine their data collection and management to ensure that the data used in their water audit accurately reflects their system.
- **Substantial unreported leakage:** The data used to complete the water audit may be accurate and correctly estimating leakage within the distribution system. If this is the case, CWD may have substantial hidden leakage that could be reduced through proactive leak detection.

1.4 California Regulatory Context

The most recent draft proposal for water loss performance standards released by the SWRCB in December 2020 set volumetric thresholds to real loss that each water supplier must meet beginning in 2028, using either 2026 or 2027 water audit data for confirmation. Supplier-specific water loss performance standards are determined using an economic model that incorporates parameters from audits submitted in 2017 – 2020. At the time of writing (April 2021), CWD will be required to maintain its current level of loss (18.8 gal/connection/day) beginning in 2028.

Although the standards do not prescribe specific intervention strategies to achieve compliance, the economic model does assume a default manual acoustic leak detection frequency when calculating each real loss threshold. If the 30-year net present value (NPV) of that strategy is positive, the utility's target is equal to the modeled level of leakage in 2026, assuming the assigned leak detection frequency. If the NPV is negative, the utility's target is equal to the average of real loss obtained from audits submitted in 2017 - 2020.

Based on the draft water loss performance targets, CWD will be required to reduce its overall real losses. The water loss control strategy presented in this report will help CWD develop a plan to refine its data management practices and reduce leakage in an effort to meet SWRCB compliance by 2028. In addition, it serves as documentation of the existing and future efforts at CWD to minimize water losses.

1.4.1 SWRCB Water Loss Target Adjustment Filing

CWD may be interested in filing for an adjustment to the SWRCB's proposed water loss standard by submitting custom inputs to the SWRCB's economic model. CWD's most recent estimate of real loss from the FY2020 water audit is 47.0 gal/connection/day, which is almost three times greater than the SWRCB's proposed water loss performance standard of 18.8 gal/connection/day for CWD. In WSO's experience, it may be difficult to meet the real loss performance standard of 18.8 gal/connection/day by 2028, as measured by the 2026 or 2027 water audit. Therefore, WSO recommends that CWD files for an adjustment to the water loss standard to derive a more realistic target.

The SWRCB uses a combination of water audit inputs from each supplier and default values in their economic model to calculate supplier-specific water loss performance standards. The SWRCB has provided suppliers with the opportunity to replace the default values used in the model with supplier-specific data through an adjustment filing. The official deadline to file for an adjustment is July 2023. However, there are two distinct windows of opportunity to file for an adjustment: the formal rulemaking period, which is anticipated to be August – September 2021, and the period after formal rulemaking, October 2021 – July 2023. The SWRCB has expressed that adjustments submitted during the

formal rulemaking period will be assessed more leniently than adjustments submitted after formal rulemaking ends.

The water loss control strategy provided in this report includes recommendations that will assist CWD in refining their estimate of real loss in the water audit and determining the extent of leakage in the field. CWD can use the leakage data obtained through these water loss control activities to customize the inputs of the SWRCB's economic model and pursue an adjustment filing with the SWRCB by July 2023.

2 Current Operations

WSO conducted a thorough review of CWD's existing system characteristics, data management practices, and water loss control efforts to gain an appreciation for the need of data management refinement and potential additional water loss control initiatives. The following sections present the synthesized results of this review.

2.1 Water Production

CWD obtains potable water from a combination of local groundwater and imported State Water Project water delivered by Calleguas Municipal Water District (CMWD), as shown in Figure 5.

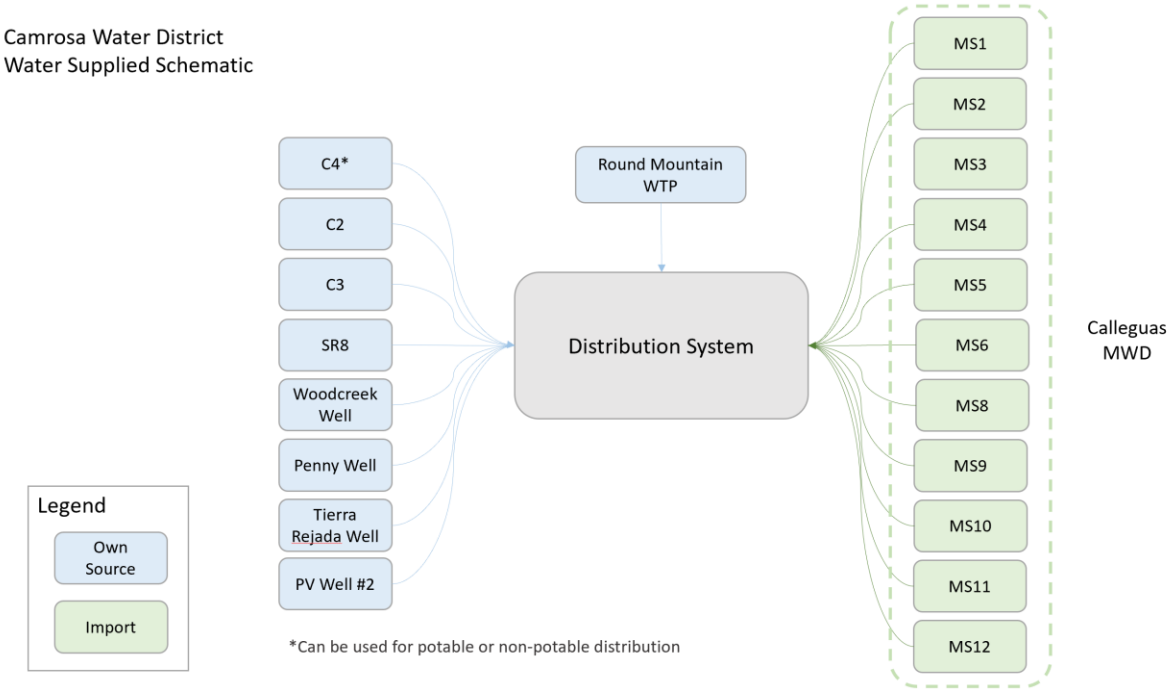

Figure 5: Camrosa Water District Water Production Schematic

2.1.1 Groundwater Wells

Overview

CWD operates ten potable wells that draw water from three groundwater basins: Tierra Rejada, Santa Rosa, and Pleasant Valley. Due to high nitrate levels, well water is blended with imported water before

distribution. Groundwater represented approximately thirty percent of CWD's potable water supply in FY 2020; ; it typically represents 40-50 percent of potable supply, with a goal of 60 percent by 2023.

Currently, five out of the ten potable wells are online. In 2018, the State Water Board implemented a new maximum contaminant limit (MCL) for 1,2,3,–Trichlorpropane (TCP), a synthetic organic compound that was an impurity in certain soil fumigants used in agriculture, of 5 ppt. Upon testing, it was discovered above the MCL in three of the wellfield's four wells, which were promptly removed from service. The fourth well was taken offline in early 2020. After an initial, ultimately unsuccessful attempt to resolve the TCP issue with blending, which turned out to be an ineffective strategy due to the very low MCL for TCP and the District's inability to meet its blend plan objectives, CWD is now constructing a granular activated carbon (GAC) treatment plant to treat for the TCP. The plant is expected to be completed in FY2021-22. The wellfield will remain off until that time.

Data Management

CWD tracks production volumes with continuous SCADA data collection. Automated emails with summarized production volumes are sent to CWD staff daily. Additionally, volumes are reviewed for trends and anomalies monthly.

Maintenance

McCalls conducts yearly accuracy testing on all active groundwater well meters using a comparative test with a Pitot tube. When issues are detected, the meter is adjusted, and the adjustments are tracked to monitor long-term performance trends among the source meters. In addition, each meter's secondary instrumentation is electronically calibrated annually to verify the accuracy of the transmission signal.

2.1.2 Imported Water

Overview

CWD imports treated State Water Project water from Calleguas Municipal Water District (CMWD) through ten connections for potable distribution. Imported water represented roughly seventy percent of CWD's potable water supply in FY 2020.

Data Management

Each of the ten connections are equipped with meters maintained by the exporter (CMWD). Each meter generates a 4-20 mA signal that sends readings from the meter to CWD's SCADA system. CWD receives monthly invoices documenting the total volumes of purchased water and corroborates these volumes using SCADA data.

Maintenance

CMWD is responsible for maintaining the meters at the ten import connections. Each meter is electronically calibrated yearly to verify the accuracy of its signal. In the past, CMWD has conducted flow testing on some of the import connections using clamp-on meters. However, these meters are not regularly tested by CMWD to verify their accuracy. See 3.1.1 Volumetric Testing of Import Meters for more information about testing and calibration of import meters.

2.2 Water Consumption

2.2.1 Customer Meter Stock

Overview

CWD's customer meter stock consists mainly of ¾-inch residential meters, along with several large agricultural meters that are equipped to distribute potable and non-potable water. CWD began an Advanced Metering Infrastructure (AMI) changeout in 2006 and currently, ninety-five percent of all customer meters are equipped with AMI technology. Meters vary in age, with some meters as old as thirty years. Meters equipped with AMI registers may have older meter bodies, as some meter bodies were not replaced during the AMI changeout.

Meter Testing

CWD does not have an active testing program for its small or large customer meters.

Meter Replacement

There is no active replacement program for managing the existing AMI customer meter stock. Replacement is currently based on total meter failure.

2.2.2 AMI to Billing Data Transfer

CWD meters all customers in its service area and bills them according to consumption. Most customer meters are equipped with AMI, a technology that transmits consumption data to a central database using a cellular network. Figure 6 displays the flow of data from a customer meter to verified consumption summaries.

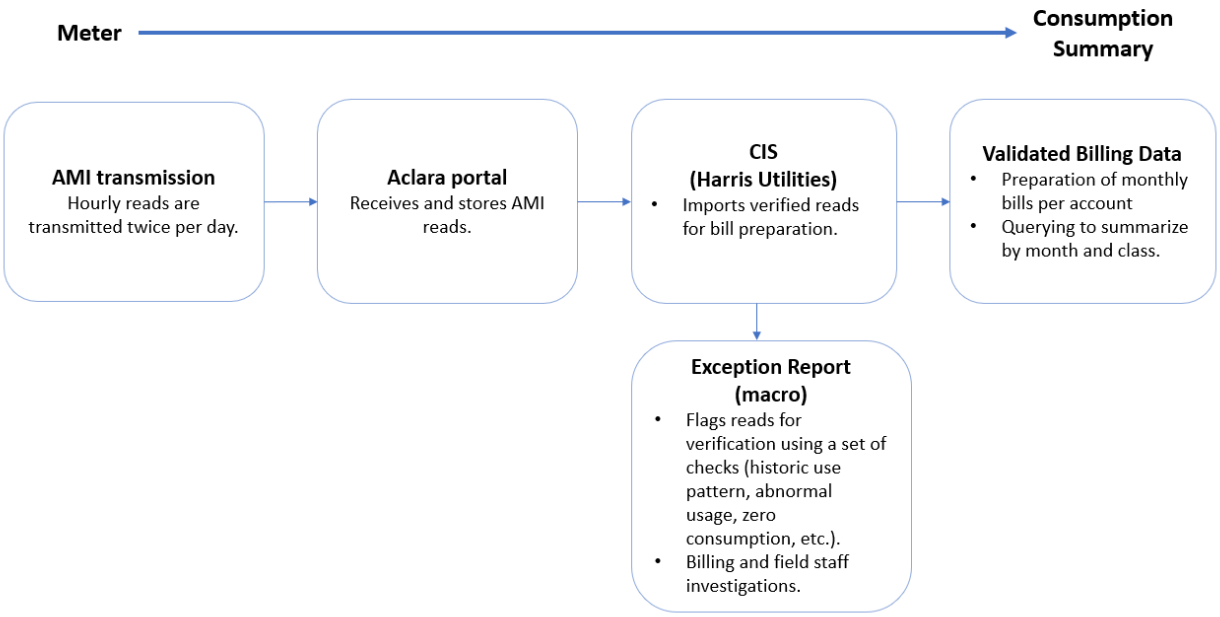

Figure 6: Customer Meter Data Flow

All meters equipped with AMI transmit hourly consumption data to a centralized database (Aclara) twice daily. The billing system communicates with the AMI database to pull monthly reads. After the billing system extracts records from the AMI system, certain reads are flagged for rereads in an Excel-based "exception report". Together, billing department staff and meter technicians verify the volumes of these flagged meters before generating the validated billing report. Billing department staff use the Advanced

Customer Information System (CIS) hosted by Harris Utilities to generate individual monthly bills as well as summary volumes for use in the water audit.

2.3 Distribution System

2.3.1 Infrastructure

Overview

CWD maintains a potable distribution system with approximately 211 miles of mains. Main lines are mostly composed of asbestos cement and PVC; service laterals are primarily composed of copper. Plastic coated copper has been used in recent service lateral replacements to prevent pin-hole corrosion.

Parts of CWD's potable distribution system infrastructure were installed as early as 1966. Currently, there is no active replacement program. Staff have noted that there is no evident pattern in leakage that could guide a systematic main line replacement program.

Data Management

The location of all new and existing mains, service laterals, meters, and hydrants are tracked in a geographic information system (GIS) that is regularly updated by staff.

2.3.2 Pressure Management

Overview

Because CWD's service territory varies in elevation, the territory is divided into five pressure zones maintained through a combination of gravity and booster pumps. CWD manages pressure in each zone to ensure optimal water distribution and comply with fire flow requirements.

Data Management

CWD has access to several sources of information regarding distribution system pressure, including pressure gauges and a hydraulic model. Pressure is sampled every thirty seconds through pressure gauges located at pumping stations. CWD has a hydraulic model that was calibrated with pressure logger data sometime in the past few years. Pressure data is stored in SCADA.

2.3.3 Leakage

Reported Leakage

Reported leaks are recorded and tracked using Mobile 311. Work orders issued for reported leaks track data on orifice size and system pressure to estimate the flow rate of the leak. CWD staff have compiled a tracking sheet documenting leaks that have been reported since 2017.

Most of the reported leaks consist of main breaks, and often result from direct damage to the main lines rather than pipe degradation. Staff tend to encounter pin-hole breaks on service laterals. To combat pin-hole leakage, many service laterals have been replaced with plastic coated copper.

Proactive Leak Detection

In June and July 2020, CWD worked with Wachs Water Services (Wachs) to conduct a manual acoustic leak detection survey. Wachs surveyed a total of 208 miles within the service territory and identified 50 leaks amounting to a total flow rate of 3.5 gallons per minute. Most of the identified leaks (46 out of 50) were classified by Wachs as small leaks not causing direct damage to the surrounding area; the

remaining leaks were classified as stopped or repaired at time of report or customer leaks. Technicians did not listen to all available service connections during this leak detection survey.

Going forward, CWD is planning to partner with a third-party vendor to perform full system acoustic leak detection surveys on a regular basis.

3 Water Loss Management Enhancement Projects

3.1 Source Meter Projects

3.1.1 Volumetric Testing of Import Meters

Imported water comprises a significant portion of CWD's water supply. CWD receives State Water Project water through import connections with Calleguas Municipal Water District (CMWD). CMWD is responsible for maintaining these import connections and they organize the annual calibration of each meter's secondary instrumentation; however, these meters are not tested for accuracy.

In FY 2020, seventy percent of potable water was supplied by imported water, while the remaining volumes were supplied by groundwater. FY 2020 was an anomaly, as local production has been steadily increasing for the last 20 years towards 60 percent of potable supplies, as the District has invested in local production and brought new facilities online. With the construction of PV Well #2 in 2020 and the GAC plant at the Conejo Wellfield, CWD expects to return to and exceed 60-percent local production.

CWD has installed additional meters in line with several of CMWD's import meters. CWD compares the volume of water registered by their redundant meters and CMWD's import meters to determine if the volumes align. Misalignment among the volumes registered by these meters serves as an indication that one of the meters may be inaccurately registering volume. Although several import meters are equipped with redundant meters, it would be useful to assess the accuracy of the import meters lacking in-line redundant meters through meter testing.

Calibration refers to the verification of the accuracy and transmission of a signal generated by a meter's secondary instrumentation. Although calibration is appropriate for verifying electronic signals, calibration does not verify the accuracy of the meter's primary measuring mechanism. Thus, meters that are calibrated and properly broadcasting signals to the SCADA system may actually be transmitting inaccurate volumes because the meter's primary measuring mechanism is not operating accurately. It is best to conduct volumetric accuracy testing on meters, especially for meters that register a significant portion of water supplied into the distribution system.

Because CWD's import connections supply a significant portion of the water supply, it may be useful to verify the accuracy of these meters. If an import meter is over-registering, CWD is being billed for water that it is not receiving. Consider a hypothetical situation in which each import meter was over-registering by 2% in FY2020. In FY2020, the total volume of water registered by the import meters (MS 1 – 6, 8 – 12) for potable distribution was 5,182 AF. If these import meters were over-registering by 2%, the true volume of water received by CWD in FY2020 was actually 5,081 AF. In this hypothetical situation, CWD was billed for an additional 101 AF due to meter inaccuracy.

Meter inaccuracy among import connections may result in CWD being overbilled for a large volume of water. To ensure that the import meters are accurately registering volumes, CWD may be interested in initiating a conversation with CMWD to discuss the possibility of having the meters tested for accuracy.

4 Data Management Projects

Data management projects seek to streamline and refine CWD's data collection and archival practices. By engaging in these projects, CWD can expect to collect more accurate data in a format that allows for efficient analysis.

The costs of refining CWD's existing data projects will depend on the current capacity of staff. CWD may consider allocating time to current staff to refine their billing data, reported leak data, and zonal water loss analysis as capacity allows. If CWD staff are at capacity, the District may consider hiring analysts to assist with the following data management projects.

4.1 Billing Data Management Refinement

CWD's billing system communicates with the AMI database to pull monthly reads. After monthly reads are obtained from the AMI database, these reads are subjected to a series of integrity checks. If a meter read fails a check, it is extracted into an excel-based report for verification. After meter reads are verified, consumption volumes are entered into the billing portal.

About 600-800 meters are flagged for verification every month and from this list, approximately 200-300 meters are flagged to be reread. In December 2020, 802 meters were flagged for verification. After an initial review of their consumption, it was determined that 427 meters (53%) needed to be reread. Technology to automate the verification of consumption volumes may assist staff. Products to examine the history of a meter's consumption may help narrow the list of meters flagged for verification, optimizing the billing department's resources.

Staff are working to upgrade the CIS billing system to integrate billing and AMI and provide customers with the ability to view their consumption. As a part of this upgrade, it may be useful to investigate technology that can assist with the automation of monthly meter verification.

Constraints

Billing department staff have indicated that the process of verifying consumption volumes each month can be time-consuming. Billing department staff, along with meter technicians, must devote a significant amount of time to reviewing flagged consumption records monthly. Additional technology to assist with meter read verification and additional staff may assist with this process.

4.2 Reported Leakage Data Refinement

Efficient tracking of reported leaks will become even more essential with the SWRCB's upcoming water loss performance standards. Compliance with the SWRCB's supplier-specific water loss targets will be determined using real loss, as estimated by validated water audits. In some cases, the volume of real loss estimated by audits may not accurately reflect distribution system water loss. It may be in CWD's interest to verify their system's level of leakage in comparison to the water audit's estimate of leakage. One component of verifying system leakage is to refine the documentation of reported leakage.

WSO reviewed two sources of data that describe leaks repaired by CWD: work orders and a reported leak tracking sheet documenting leaks reported since 2017. The reported leak tracking sheet contains a record of 109 leaks reported to CWD from 2017 – 2020. Overall, CWD effectively tracks reported leaks, documenting useful information that can be used in a Real Loss Component Analysis.

WSO identified several opportunities for data refinement:

- **Track orifice size and local pressure for each leak**: Although the system that generates work orders for reported leaks requires information on orifice size and the local pressure at the leak site, several reported leak records documented in the leak tracking sheet are missing these variables. Out of the 109 reported leaks included in the leak tracking sheet, 26 records are missing a local pressure (24% of total records). Sixteen records are missing the orifice diameter (15% of total records). CWD should ensure that they are tracking all necessary data points to estimate the flow rate and volume lost for each reported leak.
- **Document leak stop/repair time**: CWD should verify how the time duration of leaks are currently estimated to ensure that the volume lost to leakage can be approximated as accurately as possible (Figure 7). For more precision, CWD should consider adding an additional parameter (leak stop/repair time) in the reported leak tracking sheet documenting the time in which the leak was contained or repaired.
- **Consider tracking flushing volumes used during repairs**: CWD staff has expressed interest in documenting the volume of water used for flushing during leak repair within the reported leak tracking sheet. WSO affirms the value of tracking flushing volumes and ensuring that flushing volumes are differentiated from the volume lost to leakage.

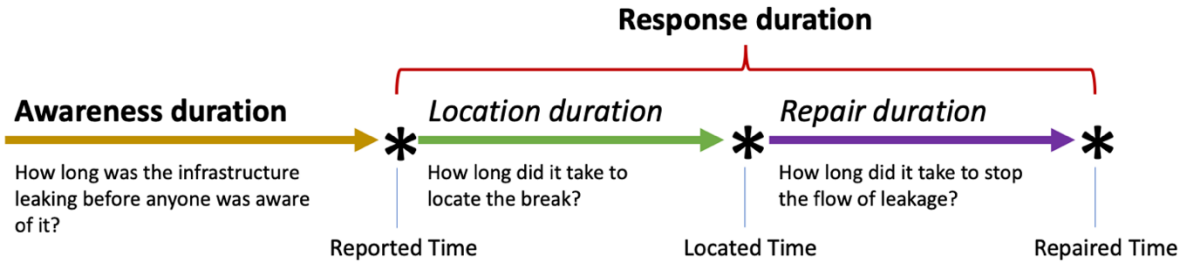

Figure 7: Components of Leakage Duration

4.3 Zonal Water Loss Analysis Refinement

CWD has been comparing its production and consumption volumes on a monthly basis to conduct a "top down" estimate of water loss in seven zones since 2017. If staff identify abnormal changes in water loss, they attempt to pinpoint the cause within the potable distribution system.

CWD staff should continue to conduct a monthly zonal analysis of water loss. Staff should consider calculating water loss in units of gallons per service connection per day or gallons per mile of main per day to normalize the volume of loss based on the infrastructure in each zone. The decision to use the count of service connections or miles of main for normalization will depend on the characteristics of the infrastructure within each pressure zone. By tracking volume at the inflow and comparing it to total consumption of all service connections within each zone at a high frequency, it is possible to assess water losses in a smaller and more manageable portion of the distribution system.

Proactive leak detection in combination with zonal water loss analysis may provide CWD with more information about the extent of real loss in each zone. As discussed later in the Proactive Leak Detection

section, CWD should consider conducting full system leak detection surveys to assess the backlog of leakage in each zone. The zonal water loss analysis provides an estimate of total water loss in each zone, which can be compared to field-based information on unreported leakage to ascertain the proportion of water loss in each zone that can be targeted for reduction going forward.

5 Apparent Loss Recovery Projects

Apparent loss recovery projects aim to identify and subsequently reduce apparent losses, like systematic data handling errors, customer metering inaccuracy, and theft. This section focuses on customer metering inaccuracy.

5.1 Customer Meter Testing

CWD replaced many of its customer meter registers with AMI in the past decade. Ninety-five percent of the customer meter stock is currently equipped with AMI technology. However, a large portion of meter bodies were not replaced during this changeout and the ages of the meter bodies themselves are not tracked. It is estimated that some meter bodies may be up to thirty years old and the accuracy of these meters is unknown.

It may be in CWD's best interest to implement a customer meter testing program to assess the accuracy of their customer meter population. Customer meter test results may be used to more accurately determine the volume of apparent loss in the annual water audit. This will be useful for investigating total water loss in the distribution system. The water audit may be underestimating apparent losses, thus inflating real losses, contributing to substantially large estimates of real loss reported by audits submitted in 2017-2020.

The following sub-sections describe potential strategies for testing small and large customer meters and constraints to customer meter testing.

5.1.1 Small Customer Meter Testing

CWD is equipped with a small meter test bench, but it is currently only used for repairs. It may be useful to assess the accuracy of the small meter population for the District's knowledge and to inform the estimate of apparent losses within the annual water audit. WSO recommends testing a random sample of small meters (less than 2 inches) that is representative of the entire small meter population at AWWA-recommended low, medium, and high flow rates to assess their performance.

5.1.2 Large Customer Meter Testing

Customer meters greater than 2 inches tend to record a greater portion of consumption volume than small customer meters. Therefore, inaccuracy among large customer meters may have a larger impact on the revenues collected for District's water sales than other meters that record less volume. CWD may be interested in testing several large customer meters (greater than 2 inches) to verify their accuracy and ensure that the total volume of water sent to customers is accurately registered and billed for. CWD should aim to test a few large customer meters each year and may prioritize testing large meters that have historically registered the greatest volumes of consumption.

5.1.3 Constraints

CWD staff have indicated that the barriers to developing a customer meter testing program include limited staffing and financial costs. Customer meters are not tested because the small crew of meter

technicians must focus on meter maintenance and lack the time and resources to devote to testing. CWD may benefit from outsourcing meter testing to a meter testing vendor or expanding their staff to include an additional meter technician to assist in developing and implementing a customer meter testing program.

If the District chooses to outsource meter testing, the cost of testing customer meters will differ depending on the third-party contracted for testing. Table 2 displays estimates of testing customer meters based on size.

Table 2: Estimated Costs of Testing Customer Meters

Meter Size	Estimated Cost of Testing per Meter
5/8 – 1 Inch	$ 30 - $ 35
1 ½ - 2 Inch Non-Turbine	$ 50 - $ 65
1 ½ - 2 Inch Turbine	$ 55 - $ 65
>= 3 Inch	$ 70 - $ 250

5.2 Customer Meter Replacement

CWD's customer meter stock consists mainly of Badger meters, along with a smaller group of Sensus SR2 and Sensus iPERL meters. Field staff monitor customer meters to gauge the performance of different types of meters in the field. In the past, this monitoring has guided CWD's replacement of customer meters. WSO recommends that CWD consider implementing a customer meter replacement strategy targeting historically low-performing meter types, such as Sensus SR2 and Sensus iPERL meters, for replacement.

Cost

The costs of a targeted customer meter replacement program will include labor and new meters, and will differ depending on the number of meters the District is aiming to replace.

6 Real Loss Recovery Projects

Real loss recovery projects aim to assess the types of real loss among the distribution system and reduce real losses by helping to find and subsequently repair leaks in the distribution system.

6.1 Pressure Zone Assessment

CWD's service territory is divided into five pressure zones that are maintained with a mix of gravity and booster pumps. WSO recommends that CWD continues to regularly assess and monitor the integrity of its five pressure zones to ensure that they are hydraulically discrete by investigating each zone to confirm that all valves are closed and there is no flow into adjacent zones. It may be useful to install pressure data loggers on either side of pressure zone boundaries to confirm that there is no correlation between pressures inside each zone.

Ensuring that the pressure zones are discrete is especially important for CWD's practice of conducting monthly zonal water balances, as staff will want to track the volume of flow into each discrete pressure zone and compare it to total consumption of all service connections within that zone to accurately assess water losses in these smaller portions of the distribution system.

6.2 Proactive Leak Detection

CWD partnered with Wachs Water Services to conduct a leak detection survey in 2020, but not every available appurtenance was sounded during this survey. Detectable leakage may have been missed due to the sounding of selective appurtenances. WSO recommends that CWD engages in a comprehensive leak detection survey of the entire system to determine the extent of unreported leakage in the distribution system.

Comprehensive acoustic leak detection surveys involve trained leak detection technicians walking the distribution system and listening to all accessible appurtenances including hydrants, valves, and service connections. CWD should aim to survey the entire system once, repair all detected leaks, and survey the system again in the following year to determine the extent to which leak detection can reduce leakage. These surveys will essentially establish a baseline of unreported leakage that CWD can use to assess the backlog of leakage and verify the water audit's estimate of real loss for the system.

The results from leak detection can assist CWD in their zonal water loss analysis. CWD should compare the results of leak detection per zone to their zonal water loss analysis to gauge how much of the water lost in each zone may be attributed to unreported leakage. Using this information, CWD can develop a targeted plan to reduce leakage in zones with considerable water loss.

Cost

The cost of a comprehensive full system leak detection survey will differ depending on the party conducting the survey. An average estimate of leak detection at $300 per mile is estimated to cost CWD approximately $63,300.

6.3 Real Loss Component Analysis

A real loss component analysis is the latest industry standard methodology for estimating potential water loss recovery. Furthermore, it is the starting point for evaluating investments in water loss recovery. WSO recommends that after conducting a comprehensive leak detection survey, CWD completes a real loss component analysis (RLCA) using the results of their latest annual water audit, work order data, and proactive leak detection findings to establish a unique profile of real loss in its system.

The remainder of this section provides a conceptual overview of the real loss component analysis approach. Based upon the results of the water audit, the total volume of real loss can be further subdivided to allocate the volume to three meaningful categories:

- **Background Leakage:** Leaks of low flow rates, continuously running, and not discoverable by leak detection. Typically composed of pinholes and minor leaks at pipe joints and fittings.
- **Reported Leakage:** Reported leakage includes breaks reported by the public or utility staff. Generally high flow rate and of relatively short duration.
- **Unreported Leakage:** Breaks not reported by the public or utility staff but either discovered or potentially discoverable through leak detection. Unreported leaks that have not yet been discovered are collectively referred to as "**hidden losses**" or "hidden leakage." Unreported leaks are generally moderate flow rates with average runtimes dependent on the intervention practices of the respective utility.

The disaggregation of real losses (also called a real loss component analysis) is a process of elimination, and as such, any error in the preceding volumes will have a direct impact on subsequent volumes. Figure 8 shows how volumes are deducted from the total volume of water supplied to estimate components of real losses.

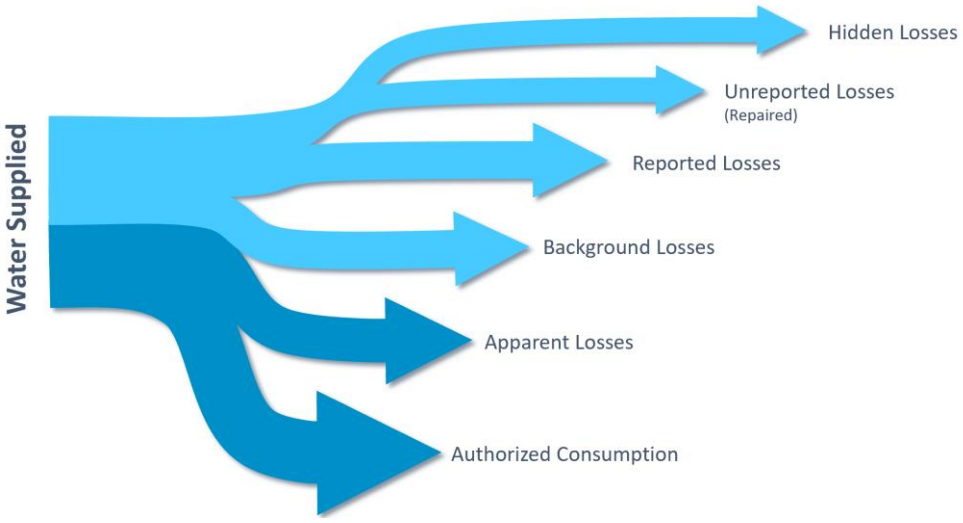

Figure 8: From Water Audit to Real Loss Component Analysis

The categories of background, reported, and unreported leakage were defined to describe types of loss that can be recovered using specific intervention strategies. Figure 9 shows the different types of real loss and the intervention strategies relevant to their recovery. For example, the principal recovery strategy for unreported leaks that have not been identified and repaired is proactive leak detection. Notably, all forms of real loss can be recovered through strategic pressure management because leak incidence and flow rate are highly related to pressure dynamics in water distribution systems.

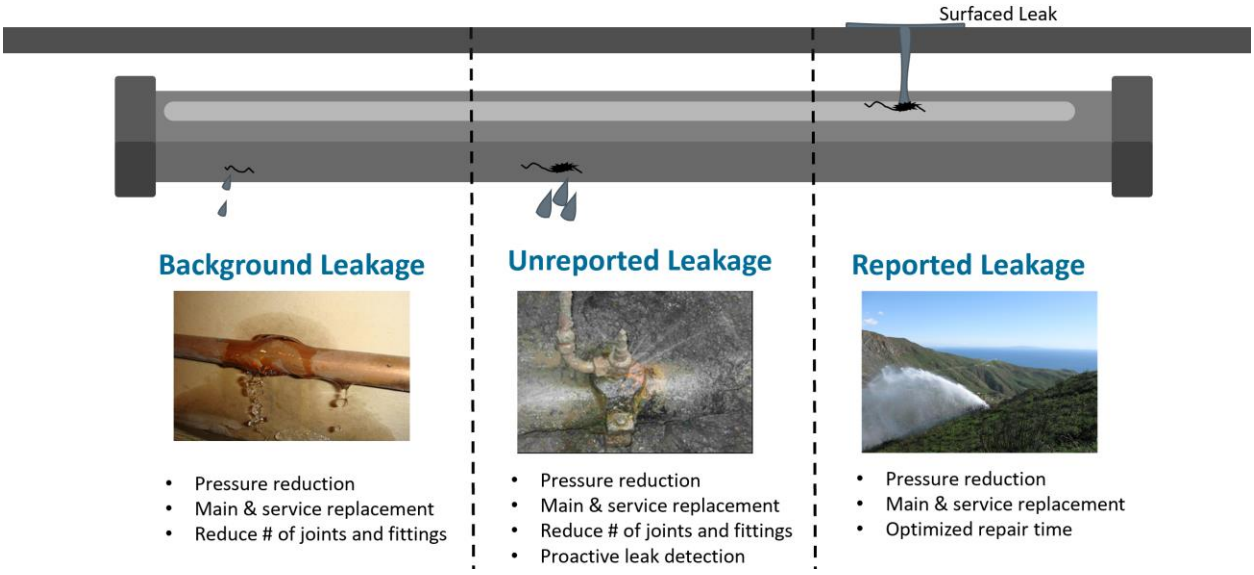

Figure 9: Types of Real Loss and Intervention Strategies

The goal in prescribing real loss intervention is to seek a balance between the value of water saved and the cost of intervention. This balance is called the Economic Level of Leakage (ELL). WSO typically considers three primary short to medium term intervention strategies against real losses because they are commonly the most cost effective:

- **Proactive Leak Detection:** The largest volume of recoverable leakage currently running in the distribution system is comprised of hidden losses. These losses are potentially recoverable using acoustic leak detection equipment.
- **Pressure Management:** Pressure management is typically the only viable intervention strategy to reduce background losses, although it is also an effective strategy for reducing all types of loss.
- **Improved Response Time**: Typically, a small percentage of real losses are lost to reported leakage—leaks that were called in to the utility for repair. One avenue for recovery is to respond to and contain these reported leaks faster.

The ELL, visualized in Figure 10, represents the most effective level of leakage given current valuation of resources. The outer blue circle represents the Current Annual Real losses (CARL). The inner core represents the volume of real losses that cannot be technically removed due to the inherent limitations of current leakage management technologies. This volume is called the Unavoidable Annual Real loss (UARL). The UARL is calculated based on industry standard values (leakage allowances) published by the AWWA. The published UARL values represent the technically achievable lowest level of real losses for networks operated with 'best practice' leakage management and with infrastructure in good condition.

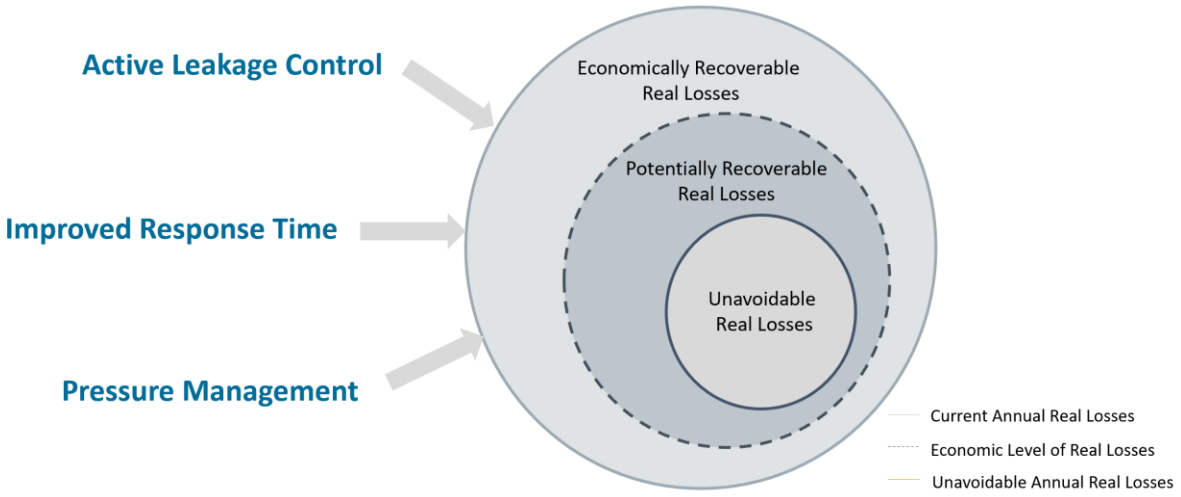

Figure 10: The Economic Level of Real Losses

Cost

The cost of conducting a Real Loss Component Analysis may differ depending on the water loss consulting company carrying out the analysis and the quantity and condition of work order data and leak detection results. The average cost of a Real Loss Component Analysis with WSO is $12,120.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: General Manager

From: Terry Curson, District Engineer

Subject: **Valve Box and Manhole Cover Raising**

Objective: Issue purchase orders for raising valve boxes and manhole covers to grade as part of two City of Camarillo street resurfacing projects.

Action Required: Authorize the General Manager to issue purchase orders to the City of Camarillo in the amount of $38,410.00 (ST-5020) and $57,914.00 (ST-5021).

Discussion: On September 24, 2020, District staff provided an informational memo to the Board outlining that the City of Camarillo (City) had gone out to bid for ST-5020, as part of their annual street resurfacing program. The areas include parts in Mission Oaks and a residential neighborhood south of the 101 Freeway. Camrosa has approximately 87 valve stackings and 22 manholes in this area that will need to be raised to grade once the streets are resurfaced. The City's bid package included a schedule for the contractor to quote on performing this work on the District's behalf.

The District signed an agreement with the City in 2018 which allows for the option of having the Contractor hired by the City to perform the work under their contract, with a 15% charge to cover managing and inspection. Total cost for the work was estimated to be $53,992.50, which includes the 15% markup.

After completion of the project, only 59 valve boxes and 17 manhole covers needed to be raised, which resulted in a cost savings to the District.

The next street resurfacing phase, ST-5021, consist of raising 49 valve boxes and 13 manhole covers. On September 2, 2021 the City opened bids for ST-5021. Five bids were received. The lowest bidder is Roy Allen Slurry Seal (Roy Allen), and the City is scheduled to make an award to them on September 29, 2021.

Based on the current bidding environment and significant increases in material and labor costs over the last year, District staff believes that there is no benefit to contract independently for this work despite the increased price over the previous year. In addition, having the City administer and inspect this project provides significant continuity, coordination, and limits the District's liability.

Funding has been allocated and is available in the FY2021-22 Operating Budget for the current work.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: General Manager

From: Jozi Zabarsky, Manager of Customer Accounts/Business

Subject: **Purchase of Meters**

Objective: Purchase meters and related equipment.

Action Required: Authorize the General Manager to spend up to $225,000.00, the Fiscal Year (FY) 2021-22 budgeted amount, to purchase meters and related equipment.

Discussion: It is the goal of the District to reduce water revenue loss by routinely replacing aging and damaged meters. There are approximately 8,600 meters throughout the District.

The District budgeted and has funds available as a line item for the purchase of meters and related equipment in the approved FY 2021-22 Budget.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: General Manager

From: Jozi Zabarsky, Manager of Customer Accounts/Business

Subject: **Water Arrearages Payment Program**

Objective: Discuss California Water and Wastewater Arrearages Payment Program.

Action Required: No action necessary; for information only.

Discussion: Governor Newsom's Executive Order N-42-20 prevents water suppliers from disconnecting water service to residential customers for nonpayment. The order was intended to protect the health and safety of California residents facing pandemic-related financial hardship. On June 11, 2021, Governor Newsom extended the prohibition on discontinuing water service for residential customers and small businesses in a critical infrastructure sector until September 30, 2021.

The State has determined that the COVID-19 pandemic has made it difficult for many Californians to pay their bills due to job loss and other hardships. As a result, systems that provide water services to customers are assumed to have been financially impacted.

Through $985 million in federal funding allocated by the state legislature, the State Water Board is creating a new program to provide relief to community water and wastewater systems for unpaid bills related to the pandemic accrued between March 4, 2020 and June 15, 2021.

The Arrearages Program will initially prioritize drinking water residential and commercial arrearages. Agricultural and landscape irrigation does not qualify for the program.

Funding to community water systems will be disbursed through January 31, 2022. Funds will be disbursed on a proportional basis to each water system applicant. If the Program still has funding available, it will extend to wastewater residential and commercial arrearages by February 2022.

The State Water Board released a survey on August 11, 2021 to determine the financial impact of the COVID-19 pandemic on each water system. All water systems must complete the survey by September 10, 2021. The State Water Board is expected to convene September 22-23, 2021 to adopt a resolution to provide guidance on program eligibilities and requirements. Within 14 days of the adoption, the Water Board will begin accepting applications for funds.

If Camrosa applies for the funds, the Board of Directors will need to pass their own resolution and the District will need to submit arrearage information and tax forms. Some requirements might change as the process evolves.

Staff recommends against applying for these State funds for the following reasons:

1) District staff have been diligently working with customers who are genuinely facing hardship and making a good faith effort to pay and/or use water responsibly. There are only a handful of customers who continue to refuse to pay their bills, enter into payment arrangements, or

reduce their water use. To mitigate this, on February 11, 2021, the Board adopted Ordinance 40-21 authorizing the installation of flow restriction devices on delinquent accounts. This tool has been very useful in encouraging customers to pay.

2) As of today, there are only 13 accounts meeting the criteria for State funds. Of those, some have applied for State assistance through the Business, Consumer Services and Housing Agency (BCSH). Those payments will come directly to the District. If the District applies for the Arrearages Program and the BCSH payments arrive, the Arrearages Program funds will need to be returned to the State.

3) The past due balance of those 13 accounts is $7,254. Subtracting the wastewater portion, that balance is reduced to $4,336. Further subtracting surety deposits previously collected on the majority of those accounts, the arrears balance eligible for program funds is $2,861, and the number of eligible accounts is reduced to 10. Furthermore, half of those accounts have eligible arrears under $50. The arrearages balance will never increase; only decrease as the eligibility period ended June 15, 2021, and most of those customers are still making good faith payments.

4) Many water agencies are reporting thousands of delinquent accounts with revenue losses in the hundred thousands. The funds Camrosa would possibly receive pro rata is negligible and the possibility of BCSH payments only means if granted, much of those funds will eventually be returned to the State.

After almost a year and a half of suspending late fees, approximately 10% of customers fail to pay their bill by the delinquent date. Some are high water users and the consequence of receiving a flow restrictor or having their irrigation meter disconnected usually encourages payment. The remaining delinquent customers are customers who were habitually delinquent and previously turned off for non-payment prior to the pandemic. Through the collection efforts made by staff, the delinquency rate at the end of the month is about 1-2%. This success far exceeds any other water agency in the region.

In summary, the District has been proactive in managing delinquent accounts since the onset of the COVID-19 pandemic and has suffered very little financial loss that is recoupable through the Arrearages Program. Staff recommends foregoing the Arrearages Program. Staff will brief the Board on the assessment of late fees and normal collection practices once the Governor's Order expires on September 30, 2021.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: Board of Directors

From: Ian Prichard, Assistant General Manager

Subject: **Voluntary Water Use Reduction**

Objective: Increase awareness of water use efficiency.

Action Required: Adopt the attached Resolution Calling for a Voluntary Fifteen-Percent Reduction in Potable Water Use.

Discussion: Nine of the last eleven years have received below-average precipitation. This year's State Water Project allocation was five percent of contracted amounts. The Bureau of Reclamation recently declared its first-ever water shortage on the Colorado River. Fifty of California's fifty-eight counties are under Governor Newsom's drought emergency declaration.

Ventura is not one of those counties. Calleguas Municipal Water District recently declared water shortages and Metropolitan Water District recently entered into a Water Supply Alert condition, but neither agency has instituted mandatory reduced allocations for retailers. The investments Camrosa ratepayers have made to build self-reliance, including offsetting imported water purchases by increasing the types and volume of local supply, have prepared us for the kind of extended dry period we in California and the West find ourselves in. We have a diverse supply portfolio that has provided a buffer against potential future reduced allocations of imported water.

As partners in our regional imported water supply system, increasing water use efficiency within Camrosa contributes to efforts to extend the supply Calleguas and Metropolitan have for the region.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Resolution No: 21-14

A Resolution of the Board of Directors
of Camrosa Water District

Calling for a Voluntary Fifteen-Percent Reduction in Potable Water Use

Whereas, Camrosa Water District provides high-quality drinking water to customers in its service area; and

Whereas, Camrosa relies in part on water imported from the California State Water Project (SWP) by the Metropolitan Water District of Southern California (MWD) and Calleguas Municipal Water District (CMWD); and

Whereas, the State of California is now in its second consecutive year of drought, and in each year of the current drought, annual precipitation levels were inadequate to fill the state's key reservoirs; and

Whereas, on March 23, 2021, upon determining that dry conditions continue to impact California's water supply, the Department of Water Resources (DWR) revised the SWP allocation for 2021 to only 5 percent of requested supplies; and

Whereas, on July 8, 2021, through Executive Order N-10-21, Governor Gavin Newsom expanded the drought emergency declaration to include a total of 50 counties across the state, and called on all Californians to voluntarily reduce their water use by 15 percent from 2020 levels; and

Whereas, the United States Bureau of Reclamation, on August 16, 2021, issued its first ever shortage declaration for the Colorado River System; and

Whereas, over the past 30 years, southern California ratepayers, including Camrosa customers, have invested in regional storage, infrastructure improvements, and water conservation programs that are now serving to sustain supplies during this historically dry year; and

Whereas, MWD has indicated that its water storage reserves dedicated to meeting regional drought demands remain relatively high at nearly 3.2-million-acre feet and, as such, it does not intend to institute mandatory water delivery reductions within its service area in 2021; and

Whereas, MWD issued on August 17, 2021, a Condition 2 Water Supply Alert calling for conservation through drought ordinances and other measures; and

Whereas, CMWD declared on August 18, 2021 a Stage Two Water Shortage in its service area and encouraged water users within its service area to reduce their use of water by 15 percent and implement feasible water use efficiency measures in an effort to extend stored water supplies and minimize effects associated with prevailing drought conditions; and

Whereas, the current extreme statewide drought condition, and SWP constraints serve to underscore the need for enhanced conservation measures to maintain reliable supplies during prolonged water shortages; and

Whereas, as partners in a regional imported water system, Camrosa recognizes its actions can contribute to efforts to extend imported water supplies;

Now, Therefore, Be It that the Camrosa Water District Board of Directors encourages water users within its service area to voluntarily reduce their use of water by 15 percent and implement feasible water use efficiency measures in an effort to extend stored water supplies and minimize effects associated with prevailing drought conditions.

Adopted, Signed, and Approved this 9th day of September 2021.

_____	_____ (ATTEST)
Eugene F. West, President	Tony L. Stafford, Secretary
Board of Directors	Board of Directors
Camrosa Water District	**Camrosa Water District**

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: General Manager

From: Sandra Llamas, Senior Accountant

Subject: **Transfer of Unclaimed Funds to the General Fund**

Objective: Transfer unclaimed funds to the General Fund.

Action Required: Adopt a resolution of the Board authorizing the transfer of unclaimed funds in the amount of $265.36, to the District's General Fund.

Discussion: Unclaimed money consists of funds greater than fifteen ($15) dollars, which are not the property of the District, but remain in the District's unclaimed funds account for three (3) or more years, or individual items of less than fifteen ($15) dollars, which remain unclaimed for a period of (1) year. The unclaimed funds currently held include overpayments by District customers**.**

California Government Code Sections 50050 through 50056 provide for the disposition of unclaimed funds that are held with the District and remain unclaimed after a notice has been published once a week for two consecutive weeks in a newspaper of general circulation. Prior to publication, the District makes every effort to contact payees of unclaimed funds.

The District provided a notice of unclaimed funds in satisfaction of the requirement of Government Code Sections 50050 and 50051. Of these published amounts, there were three (3) items totaling $171.25, which were not claimed and require Board approval to transfer to the District's general fund. Other items totaling $94.11 are also held in the unclaimed funds account, which per Government Code Section 50055, may be transferred to the general fund without public notification.

California Government Code Section 50053 states that when any such money becomes the property of the District and is in an unclaimed funds account, the legislative body may transfer money by resolution to the general fund.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Resolution No: 21-15

A Resolution of the Board of Directors
of Camrosa Water District

Authorizing Transfer of Unclaimed Funds to the District's General Fund

Whereas, unclaimed funds in the amount of $265.36 are on deposit with the District; and

Whereas, California Government Code Sections 50050 and 50051 provide that money greater than fifteen dollars that is not property of the District and remains unclaimed for three years, becomes the property of the District after notice has been published once a week for two consecutive weeks in a newspaper of general circulation, and if no person has claimed the money or filed and served a verified complaint; and

Whereas, the District caused notice to be published in the Ventura County Star in satisfaction of the requirements of Government Code Section 50051; and

Whereas, no person has claimed the money or filed and served a verified complain; and

Whereas, unclaimed funds in the amount of $265.36 are now the property of the District and are currently deposited in a special fund; and

Whereas, California Government Code Section 50053 provides that when an such money becomes the property of the District and is in an unclaimed funds account, the legislative body may transfer to the general fund;

Now, Therefore, Be It Resolved pursuant to the provisions of California Government Code Section 50053, that the unclaimed $265.36, which has become the property of the District, shall be transferred to the District's general fund.

Adopted, Signed, and Approved this 9th day of September 2021.

_____
Eugene F. West, President
Board of Directors
Camrosa Water District

_____ (ATTEST)
Tony L. Stafford, Secretary
Board of Directors
Camrosa Water District

Public Notice

CAMROSA WATER DISTRICT
PUBLIC NOTICE

The following list of disbursements are unclaimed by the listed payees and held by the Camrosa Water District. If you have a claim against these funds, please contact Camrosa Water District, 7385 Santa Rosa Road, CA 93012, phone (805) 482-4677. Proper proof of claim and current identification must be provided before funds will be released. Funds not claimed by September 9, 2021 become the property of the Camrosa Water District. This notice and its contents are in accordance with California Government Code Section 50050.

Check Date	Check Number	Amount	Payee
10/05/2016	50646	$71.71	Silvia Atanasio
11/09/2016	50722	$70.20	Annette Natella
12/20/2017	52186	$29.34	Jack Kujawa
06/06/2018	52785	$43.76	Alisa Barlow

Published July 12, 19, 2021 AD#4816805

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: General Manager

From: Joe Willingham, IT and Special Projects Manager

Subject: **Ankura LLC, Managed Cyber Detection & Response Service Annual Renewal**

Objective: Maintain the Districts Cyber Security Posture.

Action Required: Authorize the General Manager to renew agreement and approve a purchase order, in an amount of $51,250.00, to Ankura LLC for annual renewal of computer endpoint detection and response (EDR) managed cloud services.

Discussion: For the past year Ankura has provided managed cyber security services for all district-owned, Microsoft Windows server and workstation computers. Services include traditional anti-virus protection and Next Generation Anti-Virus (NGAV) advanced analytics to combat zero-day, malware attacks. These cloud services are managed real-time, 24/7 from Ankura's Security Operations Center (SOC).

Funding is available in the FY2021-22 operating budget.

Agenda Item #10

Camrosa Water District
7385 Santa Rosa Rd.
Camarillo, CA 93012
Telephone (805) 482-4677 - FAX (805) 987-4797

Some of the important terms of this agreement are printed on pages 2 through 8. For your protection, make sure that you read and understand all provisions before signing. The terms on Page 2 through 8 are incorporated in this document and will constitute a part of the agreement between the parties when signed.

TO: Ankura Consulting Group, LLC
2000 K Street NW, 12th floor
Washington, DC 20006

DATE: 9/17/2021

Agreement No.: 2022-94

The undersigned Consultant offers to furnish the following:

Contract price $: Not to exceed $51,250

Contract Term: 9/17/2021-9/16/2022

Instructions: Sign and return original. Upon acceptance by Camrosa Water District, a copy will be signed by its authorized representative and promptly returned to you. Insert below the names of your authorized representative(s).

Accepted: Camrosa Water District	Consultant: Ankura Consulting Group, LLC
By: _____	By: _____
Tony L. Stafford	Jason Straight
Title: General Manager	Title: Senior Managing Director
Date: _____	Date: _____
Other authorized representative(s):	Other authorized representative(s):
. _____	_____

This agreement (the "**Letter**") and its attached terms of business (the "**Terms of Business**"; together with this Letter, the "**Engagement Letter**") confirms the retention of Ankura Consulting Group, LLC ("**Ankura**" or "**Consultant**"), effective as of the date set forth on the first page, by Camrosa Water District (the "**District**" or "**Client**"). Ankura and Client may herein be referred to as the "Parties".:

1. Scope of Engagement: Pursuant to this Engagement Letter, Ankura will provide the following services, the "**Services**").

Managed Detection and Response for Endpoints Service (MDR-Endpoint):
Ankura will provide a managed endpoint security and threat hunting solution that includes:

- Security monitoring of endpoint devices using the Carbon Black endpoint monitoring, threat detection, response and protective tools
- Threat intelligence feed reporting and alerting
- Threat and compromise hunting using behavior-based methodology
- Cyber-attack visualization with easy-to-follow attack chain
- Cyber-attack root cause analysis
- Threat mitigation measures such as banning of unauthorized or malicious binaries, isolation of compromised endpoints, and live response.

Ankura will perform threat hunting on Camrosa Water District's endpoint infrastructure and designate a single point of contact to act as Camrosa Water District's primary technical point of contact. Camrosa Water District's endpoints will be monitored 24x7 by way of Carbon Black automated solutions, and 8x5 by Ankura's security engineers and analysts from the MDR Team. Ankura will not take any action on endpoints without Camrosa Water District's written authorization. Ankura will provide daily health check updates and monthly conference calls to discuss threat updates and recommendation.

2. Fees and Expenses: For Ankura's Services hereunder, the Client agrees to pay to Ankura the following fixed fee (the "**Fees**") payable on a quarterly basis (payment table below). Our Fees are not contingent on the substance of our findings, analyses, work product, and/or outcome of the Services. Ankura does not predict or warrant the outcome of any particular matter or issue, and our fees are not dependent on such outcomes. Our Fees are based on the experience and skills of the personnel involved and are adjusted periodically.

Endpoint Detection and Response (EDR) with NextGen Anti-Virus (NGAV)

Managed Detection and Response for Endpoints Service (MDR-Endpoint) with NGAV and EDR
• Duration: 52 weeks (1 year: 9/17/21-9/16/22)
• Price includes Ankura MDR-Endpoint Service and CB licenses.
  ○ MDR-Endpoint Service
  ○ CB License Cost (1-year, up to 100 endpoints, CB Enterprise EDR)
  ○ CB License Cost (1-year, up to 100 endpoints, CB Standard (NGAV))
• Assumption: CB Standard (NGAV) will replace legacy AV's being used by Camrosa Water District. CB Enterprise EDR will be utilized for threat hunting and response. Ankura will monitor both CB Defense (NGAV) and CB Enterprise EDR.

Total Fee **$51,250**

Below is the payment schedule and approximate invoice dates:

Quarter #	Fees
1: 9/17/21	$12,812.50
2: 12/17/21	$12,812.50
3: 3/17/22	$12,812.50
4: 6/17/22	$12,812.50

Any additional Client preapproved consulting will be billed based on the actual hours expended at our standard hourly rates that are in effect when the Services are rendered. Our rates generally are revised annually. Our current hourly rates are as follows:

Level	Rate
Senior Managing Directors and Managing Directors	$525 - $650
Senior Directors and Directors	$395 - $460
Senior Associates and Associates	$275 - $335

3. Expense Reimbursement: Ankura shall be entitled to reimbursement of actual, reasonable out-of-pocket and direct expenses incurred in connection with the Services to be provided under this Engagement Letter, including travel and lodging, outside research, copying, telephone, postage and courier costs (collectively, "**Expenses**").

4. Invoices and Payment: The payment of the Fees and Expenses hereunder are the exclusive obligations of the Client. Payment of the Fees and Expenses shall be submitted within 30 days of receipt of an invoice. Unless any objections to an invoice are received within thirty (30) days, such invoice shall be deemed accepted by Client. In the event that you do not pay our invoices in accordance with their terms, we have the discretion to (i) terminate or suspend the engagement and the performance of Services, and (ii) deduct any outstanding amounts owed from monies held on your behalf. Under these circumstances, you will also be responsible for any costs, including legal fees, associated with the collection of outstanding and overdue fees and expenses.

5. Term and Termination of Engagement Letter: This Engagement Letter shall be effective upon execution by all the parties and continue until the earlier of (i) conclusion of the Services or (ii) termination in accordance with this Section. If either party hereto desires to terminate the engagement, it may do so at any time for any reason by giving written notice to the other party. In such event, Ankura will be paid for fees and expenses incurred through the termination date. Any termination of the Engagement Letter shall not affect any provisions that survive the termination hereof or Ankura's right to receive payment of fees earned and expenses incurred by Ankura through the date of termination, and you shall immediately pay or cause to be paid all such reasonable Fees and Expenses due and owing.

6. Entire Engagement Letter; Amendments: This Engagement Letter represents the entire agreement between the parties in relation to the Services, supersedes all previous agreements relating to the subject matter hereof (should they exist) and may not be modified or amended except in a subsequent writing, signed by all of the parties hereto. In

the event of a conflict between this Letter and the Terms of Business or any other letter or communication regarding the provision of the Services, the Terms of Business control unless this Letter specifically states otherwise.

7. Ankura Indemnification: To the extent permitted by law, Consultant shall hold harmless, defend at its own expense, and indemnify the District, its directors, officers, employees, and authorized volunteers, against any and all liability, claims, losses, damages, or expenses, including reasonable attorney's fees and costs, arising from grossly negligent acts, errors or omissions of Consultant or its officers, agents, or employees in rendering services under this contract; excluding, however, such liability, claims, losses, damages or expenses arising from the District's negligence or willful acts.

8. Insurance Requirements:

a. **Minimum Insurance Requirements:** Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Consultant, his agents, representatives, employees or subcontractors.

b. **Coverage:** Coverage shall be at least as broad as the following:

   1. **Commercial General Liability (CGL) -** Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with limit of at least two million dollars ($2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to the District) or the general aggregate limit shall be twice the required occurrence limit.

   2. **Automobile Liability -** (If applicable) Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) or if Consultant has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars ($1,000,000) for bodily injury and property damage each accident.

   3. **Workers' Compensation Insurance -** as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.

   4. **Waiver of Subrogation:** The insurer(s) named above agree to waive all rights of subrogation against the District, its directors, officers, employees, and authorized volunteers for losses paid under the terms of this policy which arise from work performed by the Named Insured for the District; but this provision applies regardless of whether or not the District has received a waiver of subrogation from the insurer.

   5. **Professional Liability** - (also known as Errors & Omission) Insurance appropriates to the Consultant profession, with limits no less than $1,000,000 per occurrence or claim, and $2,000,000 policy aggregate.

c. **If Claims Made Policies:**

   1. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.

   2. Insurance must be maintained **for at least three (3) years after completion of the contract of work.**

   3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of three (3) years after completion of contract work.

Other Required Provisions: The general liability policy must contain, or be endorsed to contain, the following provisions:

a. **Additional Insured Status:** The District, its directors, officers, employees, and authorized volunteers are to be given insured status (at least as broad as ISO Form CG 20 10 10 01), with respect to liability arising out of work or operations performed by or on behalf of the Consultant including materials, parts, or equipment furnished in connection with such work or operations.

b. **Primary Coverage:** For any claims related to this project, the Consultant's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to the District, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the District, its directors, officers, employees, and authorized volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the District.

Self-Insured Retentions: Self-insured retentions must be declared to and approved by the District. The District may require the Consultant to provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or the District.

Acceptability of Insurers: Insurance is to be placed with insurers having a current A.M. Best rating of no less than A:VII or as otherwise approved by the District.

Verification of Coverage: Upon written request by the District, Consultant shall furnish the District with certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the District before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Consultant's obligation to provide them. If any of the required coverages expire during the term of this agreement, the Consultant shall deliver the renewal certificate(s) including the general liability additional insured endorsement to the District.

Subcontractors: Consultant shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Consultant shall ensure that the District, its directors, officers, employees, and authorized volunteers are an additional insured on Commercial General Liability Coverage.

Other Requirements:

a. Consultant shall not accept direction or orders from any person other than the General Manager or the person(s) whose name(s) is (are) inserted on Page 1 as "other authorized representative(s)."

b. Payment, unless otherwise specified on Page 1, is to be 30 days after acceptance by the District.

c. Permits required by governmental authorities will be obtained at Consultant's expense, and Consultant will comply with applicable local, state, and federal regulations and statutes including Cal/OSHA requirements.

d. Any change in the scope of the professional services to be done, method of performance, nature of materials or price thereof, or to any other matter materially affecting the performance or nature of the professional services will not be paid for or accepted unless such change, addition or deletion is approved in advance, in writing by the District. Consultant's "other authorized representative(s)" has/have the authority to execute such written change for Consultant.

[Remainder of this page intentionally left blank.]

TERMS OF BUSINESS

1. INTRODUCTION

(a) **Terms.** These Terms of Business apply to the Services you have engaged us to provide to you as set forth in the Engagement Letter. If anything in these terms is inconsistent or conflicts with the Letter, these terms take precedence, unless the Letter specifically states otherwise.

(b) **Interpretation.** The following words and expressions have the following meaning in these Terms of Business and the Engagement Letter given to them below:

(i) Ankura: any entity within the worldwide network of Ankura Holdings, LP.
(ii) Engagement Letter: means the Letter between you and us and these Terms of Business.
(iii) Services: the Services set forth in the Letter, including any schedules or statements of work.
(iv) We, us, or our: Ankura.
(v) You or your: refers to person(s) or entity(ies) engaging Ankura and as identified in the Letter, including, when engaged through counsel, the Client.

2. SERVICES; DELIVERABLES

(a) **Deemed Knowledge.** In performing the Services, we will not be deemed to have information from other Services or prior engagements.

(b) **Use of Services, Deliverables and Reports.** The Services, including the deliverables and reports, are provided solely for your use and the purpose set forth in the Engagement Letter. You may not disclose or discuss the Services or any deliverable or report or make the benefit of the Services available to anyone else or refer to the contents of a deliverable or report or the findings of our work except (i) as specifically stated in the Engagement Letter, (ii) with our prior written consent on terms to be agreed in writing, (iii) where we are providing expert witness services or advice for the purpose of litigation, to any other party to the litigation and to the court or forum with conduct of the litigation, or (iv) where required by law or regulation.

(c) **Limitation on Services.** You acknowledge that Ankura is being retained solely to assist you as described in the Engagement Letter. You agree that you will be solely responsible for implementing any advice or recommendations and for ensuring that any such implementation complies with applicable law. We do not and will not be providing any financial statement audits or attest procedures, nor will we be providing legal advice in the course of our Services. If the provision of our Services includes work product prepared by persons or firms other than Ankura, Ankura assumes no responsibility for the completeness, adequacy and coordination of the work product prepared by others and/or the professionals of record, and/or the parties providing services to you other than Ankura.

3. RETENTION OF MATERIALS

We may, but are not obligated to, retain copies of all materials relevant to the Services, including any materials given to us by you or on your behalf. At the end of the provision of Services, as determined by Ankura, you will have several options with respect to disposition of documents related to the engagement that we do not wish to retain. You can (i) direct us to return all such documents to you, where practicable, (ii) authorize us to discard or destroy such documents or (iii) direct us to store such documents, at your expense. If you do not request one of these options for the disposition of materials within sixty (60) days after the engagement is concluded or terminated, we may implement one of these options in our sole discretion. We retain the right to retain a copy of our reports or work papers as necessitated by internal policies or archiving procedures or pursuant to law or regulation.

4. CONFIDENTIALITY

(a) **Generally.** In connection with this engagement, either party (the "**Receiving Party**") may come into the possession, whether orally or in writing, of Confidential Information (as defined below) of the other party (the "**Disclosing Party**"). The Receiving Party hereby agrees that it will not disclose, publish or distribute such Confidential Information to any third party without the Disclosing Party's consent, which consent shall not be unreasonably withheld other than (i) to the Receiving Party's affiliates and their employees, officers, directors, auditors, and advisors; (ii) if such disclosure is requested or required by a governmental agency having regulatory authority or other authority over the Receiving Party; (iii) pursuant to court order, subpoena or legal process requiring disclosure, provided that Receiving Party shall use its best efforts to promptly give Disclosing Party written prior notice (if legally permissible) of any disclosure under this clause (iii) so that Disclosing Party can seek a protective order; or (iv) to tax advisors regarding the tax treatment or tax structure of any transaction; provided that such advisors are informed of the confidential obligations hereunder.

(b) **Other Agreement.** Notwithstanding Section 4(a), in the event that the parties are subject to a confidentiality agreement, protective order, or other agreement that specifically addresses the treatment of confidential information, to the extent that the confidentiality terms of that agreement and these Terms of Business Conflict, the confidentiality terms of such agreement will control and govern and the Parties agree that the confidentiality provisions of that agreement are incorporated into these Terms of Business.

(c) **Personally Identifiable Information.** In the event that the Services involve sensitive personally identifiable information ("**PII**"), the use and security of such PII shall be addressed in the business associate agreement (if necessary, attached hereto as an addendum) entered into between Ankura and you, and such agreement is incorporated into and made a part of these Terms of Business.

(d) **Definition of Confidential Information.** "**Confidential Information**" means any and all non-public, confidential or proprietary knowledge, data, or information of or concerning the

Disclosing Party. For the avoidance of doubt, Confidential Information includes without limitation, research, analyses, names, business plans, valuations, databases and management systems. Confidential Information shall not include information that: (i) was publicly known and made generally available in the public domain prior to the time of disclosure; (ii) is already in the lawful possession of the Receiving Party at the time of disclosure; (iii) is lawfully obtained from a third party lawfully in possession of such information and without a breach of such third party's obligations of confidentiality; or (iv) is independently developed without use of or reference to any Confidential Information.

5. CONFLICTS

Ankura is involved in a wide range of other activities from which conflicting interests, or duties, may arise. We have undertaken an inquiry of our records in accordance with our standard business practices based on the parties identified to us and have determined that we may proceed. A copy of our conflict policy, as may be amended from time to time in our sole discretion, can be found here https://ankura.com/conflict-policy/.

6. SUBPOENA; LIABILITY; INDEMNITY

(a) **Witness; Subpoena.** If Ankura is requested or required to appear as a witness in any Action that is brought by, on behalf of, or against you or that otherwise relates to the Engagement Letter or the Services rendered by Ankura hereunder, you agree to (i) compensate Ankura for its associated time charges at our regular rates in effect at the time and (ii) reimburse Ankura for all documented, actual out of pocket expenses incurred by Ankura in connection with such appearance or preparing to appear as a witness, including without limitation, the fees and disbursements of legal counsel of Ankura's choosing. In addition, Ankura will be compensated and reimbursed for any time and expense (including without limitation, fees and expenses of legal counsel of Ankura's choosing) that Ankura may incur in considering or responding to discovery requests or other formal information requests for documents or information made in connection with any Action or in connection with the Services.

(b) **Limit of Liability.** Except in the event of gross negligence, neither you nor anyone acting on your behalf shall hold Ankura liable for (i) an aggregate amount (including interest and legal fees) in excess of the amount of Fees actually received by Ankura from you pursuant to the Engagement Letter, (ii) loss or corruption of data from your systems, (iii) loss of profit, goodwill, business opportunity, anticipated savings or benefits, or (iv) special, consequential, exemplary, incidental, punitive or indirect damages. In the event that we agree in writing to accept liability to more than one party, the limit of our liability in this Section 6(b) will be shared between them as determined by the parties, and in no event shall Ankura's aggregate liability exceed that set forth in Section 6(b)(i).

(c) **Indemnity.** You agree to defend, indemnify and hold harmless Ankura and its affiliates and its respective directors, officers, employees, attorneys and other agents appointed by any of the foregoing and each other person (each such person and entity being referred to as an "**Indemnified Person**"), from and against any losses, claims, damages, judgments, assessments, costs and other liabilities (collectively, "**Liabilities**"), and will reimburse each Indemnified Person for all reasonably incurred and documented fees and expenses (collectively, "**Indemnity Expenses**") as they are incurred in investigating, preparing, pursuing or defending any claim, action, proceeding or investigation ("**Action**"), in each case, related to or arising out of or in connection with the Services rendered or to be rendered by an Indemnified Person; provided that no Party shall be responsible for any Liabilities or Indemnity Expenses of any Indemnified Person that are finally determined by a judgment of a court of competent jurisdiction to have resulted from such Indemnified Person's gross negligence or willful misconduct in connection with any of the actions, inactions or Services of Ankura.

7. INTELLECTUAL PROPERTY; DATA PROTECTION

(a) **Intellectual Property.** Ankura owns the intellectual property rights in the deliverables and reports and any materials created under the Engagement Letter. Ankura agrees that upon payment in full for the Services, you will have a non-exclusive, non-transferable license to use the deliverables for your own internal use in accordance with the terms of the Engagement Letter. Notwithstanding the foregoing, (i) any patent, copyright, trademark and other intellectual property rights of Ankura contained in any deliverable or report shall remain the sole and exclusive property of Ankura, and (ii) all methodologies, processes, techniques, ideas, concepts, trade secrets and know-how and other intellectual property embedded in the deliverable or reports that we may develop or supply in connection with our Services shall remain the sole and exclusive property of Ankura.

(b) **Data Protection.** You and we will comply with all applicable data protection legislation in relation to any personal data shared with us under the Engagement Letter. Full details of how we use data can be found here https://ankura.com/privacy-policy/.

8. GENERAL

(a) **Authority; Due Authorization; Enforceability.** You represent and warrant that you have all requisite power and authority to enter into the Engagement Letter and to perform your obligations hereunder. You further represent and warrant that the Engagement Letter has been duly and validly authorized by all necessary corporate action and has been duly executed and delivered by you constitutes a legal, valid and binding agreement, enforceable in accordance with its terms.

(b) **Force Majeure.** No party shall be liable for any delays or nonperformance directly or indirectly resulting from circumstances or causes beyond its reasonable control, including but not limited to, fire, epidemic or other casualty, act of God, strike or labor dispute, war or other violence, or any law, order or requirement of any governmental agency or authority.

(c) **Assignment.** The Engagement Letter may not be assigned by any party hereto without the prior written consent of the other parties. Any attempted assignment made without such consent shall be void and of no effect, at the option of the non-assigning parties. Notwithstanding the forgoing, Ankura may assign or novate the Engagement Letter to a transferee of all or part of our business upon written notice from us. We may also transfer or deal with our rights in any unpaid invoice without notice.

(d) **Independent Contractors; Subcontractors.** In connection with the Services, Ankura may utilize employees, agents or independent contractors or its own affiliates (each of which is a separate and independent legal entity) or its own agents or independent contractors. References in the Engagement Letter to Ankura personnel shall apply equally to employees, agents or independent contractors of Ankura and its affiliates. Ankura shall act as an independent contractor under this Engagement Letter, and not in any other capacity including as a fiduciary, and any obligations arising out of its engagement shall be owed solely to you. As an independent contractor, Ankura will have complete and exclusive charge of the management and operations of its business, including hiring and paying the wages and other compensation of all its employees and agents, and paying all bills, expenses and other charges incurred or payable with respect to the operations of its business. Ankura will remain solely responsible for the Services.

(e) **Restrictions on Claims.** You agree not to bring any claim against a direct or indirect holder of any equity interests or securities of Ankura whether such holder is a limited or general partner, member, stockholder or otherwise, affiliate of Ankura, or director, officer, employee, representative, or agent of Ankura, or of an affiliate of Ankura or of any such direct or indirect holder of any equity interests or securities of Ankura (collectively, the "**Party Affiliates**"). You further agree that no Party Affiliate shall have any liability or obligation of any nature whatsoever in connection with or under the Engagement Letter or the Services contemplated thereby, and you waive and release all claims against such Party Affiliates related to any such liability or obligation.

(f) **Notices.** Notice given pursuant to any of the provisions of the Engagement Letter shall be in writing and shall be mailed or delivered (including via email so long as the recipient acknowledges receipt) at the address set forth in the signature blocks of each person listed in the Engagement Letter. Notices shall be deemed provided on the date sent.

(g) **Governing Law.** The Engagement Letter and Terms of Business will be governed by and construed in accordance with the laws of the State of California.

(h) **Venue.** Each party hereto hereby irrevocably and unconditionally (a) submits for itself and its property in any legal action or proceeding relating to the Engagement Letter or for recognition and enforcement of any judgment in respect thereof, to the exclusive general jurisdiction of the state courts residing in the County of Ventura in the State of California, and appellate courts of any of the foregoing and (b) consents that any such action or proceeding shall be brought exclusively in such courts and waives any objection that it may now or hereafter have to the venue of any such action or proceeding in any such court or that such action or proceeding was brought in an inconvenient court and agrees not to plead or claim the same.

(i) **Jury Trial Waiver.** Each party hereto knowingly, voluntarily and irrevocably waives any right to trial by jury in any action, proceeding or counterclaim (whether based upon contract, tort or otherwise) related to, or arising out of or in connection with, the Engagement Letter or these Terms of Business or the performance by Ankura of the Services contemplated herein.

(j) **Mediation.** Other than disputes regarding non-payment, if a dispute arises, the parties will first attempt to resolve it by discussion, negotiation and mediation before commencing legal proceedings.

(k) **Limitation Period.** No action, regardless of form, relating to the Engagement Letter or the Services provided thereunder, may be brought by either party more than one (1) year after the cause of action has accrued, except that an action for nonpayment may be brought by a party no later than one (1) year following the due date of the last payment owing to the party bringing such action.

(l) **Third Party Beneficiaries.** The terms of the Engagement Letter do not and are not intended to confer any rights or remedies upon any person or entity other than the Parties.

(m) **Headings.** Headings used herein are for convenience of reference only and shall not affect the interpretation or construction of the Engagement Letter or these Terms of Business.

(n) **Severability.** The invalidity or unenforceability of any provisions of the Engagement Letter or these Terms of Business shall not affect the validity or enforceability of any other provision.

(o) **Survival.** Those provisions (and related rights and obligations of the parties) that by their nature and context are intended to survive termination or expiration of these Terms of Business or the Engagement Letter shall so survive any such termination or expiration of these Terms of Business or the Engagement Letter.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board Memorandum

September 9, 2021

To: Board of Directors

From: General Manager

Subject: **Closed Session Conference with Legal Counsel – Pending Litigation**

Objective: Confer with and receive advice from counsel regarding pending litigation.

Action Required: No action necessary; for information only.

Discussion: Pending litigation may be discussed in closed session pursuant to paragraph (1) of subdivision (d) of Government Code section 54956.9.

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Read File

The following material is provided to members of the Board for information only and is not formally a part of the published agenda.

A. Cash Balances (July 2021)
B. 2021 Board Calendar

FUNDS FY 21-22

UNRESTRICTED FUNDS	JUNE	JULY		AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
LAIF	27,640,311.09	29,063,071.14	1,2,10					
UNION BANK DEPOSIT ACCOUNT	895,403.41	540,806.84						
UNION BANK DISBURSEMENTS ACCOUNT	823,414.27	709,022.24						
BANK OF AMERICA-RTL ACCOUNT	915,885.23	402,940.55						
TOTAL	$ 30,275,014.00	$ 30,715,840.77		$ -	$ -	$ -	$ -	$ -
RESTRICTED FUNDS								
PAYMENT FUND 2016	208,715.63	83.30	3,4,5,6					
RESERVES 2016	879,528.69	879,528.69	5					
WATER ACQUISITION FUND 2016	3,831,796.40	3,438,209.23	6,7					
INSURED CASH SHELTER ACCOUNT (Wastewater Fund)	13,792.18	13,793.94	8,9					
TOTAL	$ 4,933,832.90	$ 4,331,615.16		$ -	$ -	$ -	$ -	$ -
GRAND TOTAL	$ 35,208,846.90	$ 35,047,455.93		$ -	$ -	$ -	$ -	$ -

Series 2016-Reserve Fund

Cusip Number	Financial Institution	Settlement Date	Coupon Rate	Maturity	Amount	Accrued Income
09248u445	Blackrock Liquidity Funds	10/19/2016	0.03%	N/A	879,528.69	18.91

Series 2016-Water Acquisition Fund

Cusip Number	Financial Institution	Settlement Date	Coupon Rate	Maturity	Amount	Accrued Income
09248u445	Blackrock Liquidity Funds	10/19/2016	0.03%	N/A	3,438,209.23	75.36

ANTICIPATED OUTFLOWS	
Water Purchases July 2021	1,074,777.11
Payroll PR 8-1, 8-2 & ME	300,000.00
AP Check Run 08/18	500,000.00
Large CIP Project Payments	-
Bond Payments	-
	$ 1,874,777.11

FINANCE MEETING

DATE **8/23/2021**

Tony Stafford -General Manager

Tamara Sexton-Finance Manager

Sandra Llamas-Senior Accountant

MEETING NOTES:

1. $1,400,000 were transferred into LAIF on July 22nd.
2. Quarterly interest earnings for quarter ended June 30, 2021 in the amount of $22,760.05 were deposited on July 15th.
3. The payment fund disbursed $208,715.63 to pay Interest due to bondholders on July 15th.
4. The payment fund received $1.40 in interest int eh month of July.
5. The Reserve Fund received $15.31 in interest. The full amount was transferred to the Payment Fund.
6. The Water Acquisition Fund received $66.59 in interest. The full amount was transferred to the Payment Fund.
7. A reimbursement for capital expenditures in the amount of $393,587.17 was transferred to Camrosa from the Water Acquisition Fund
8. The Insured Cash Shelter Account (ICSA) received $1.76 in interest in the month of July.
9. The Insured Cash Shelter Account average monthly rate of return for the period was 0.1500%
10. LAIF's average monthly rate of return for the period was 0.221%

2021 Camrosa Board Calendar

JANUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY

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28						

MARCH

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APRIL

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MAY

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30	31					

JUNE

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JULY

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AUGUST

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29	30	31				

SEPTEMBER

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OCTOBER

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31						

NOVEMBER

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DECEMBER

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2021 Observed Holidays

- January 1st - New Year's Day
- February 15th - President's Day
- May 31st - Memorial Day
- July 5th - Independence Day (Observed)
- September 6th - Labor Day
- November 11th - Veteran's Day
- November 25th & 26th - Thanksgiving
- December 23rd & 24th - Christmas
- December 31st - New Year's Eve

2021 Conferences

- CASA Winter Conf. (**Virtual Event**) - Jan. 27th - 28th
- ACWA Spring Conf. (Monterey) - May 4th - 7th
- CASA 66th Annual Conf. (San Diego) - Aug. 11th - 13th
- ACWA Fall Conf. (Pasadena) - Nov. 30th - Dec. 3rd

2021 AWA Meetings

- *"Water Issues" Third Tuesday (except Apr., Aug., Dec.)*
- Waterwise Breakfast (See yellow on calendar)
- AWA Board Meetings (See orange on calendar)
- ***August - DARK (No Meetings or Events)***
- September 30th - Reagan Library Reception
- October 21st - Annual Symposium
- December 9th - Holiday Mixer

2021 VCSDA Meetings

- February 2nd - Annual Dinner
- April 6th
- June 1st
- August 3rd
- October 5th
- December 7th

Camrosa Water District
7385 Santa Rosa Road
Camarillo, CA 93012

Note: Board of Directors meetings are highlighted in RED. Board Meetings are held on the **2nd & 4th Thursday** of each month at 5pm unless indicated.

Calleguas Board Meetings are held 1st & 3rd Wednesday - 5:00 PM