MARINA COAST WATER DISTRICT

11 RESERVATION ROAD, MARINA, CA 93933-2099
Home Page: www.mcwd.org
TEL: (831) 384-6131 FAX: (831) 883-5995

Agenda
Regular Board Meeting, Board of Directors
Marina Coast Water District
and
Regular Board Meeting, Board of Directors
Marina Coast Water District Groundwater Sustainability Agency

Monday, December 13, 2021, 6:30 p.m. PST

Due to Governor Newsom's Executive Order N-29-20 and recommendations on protocols to contain the spread of COVID-19, staff and Board members will be attending the December 13, 2021 meeting remotely from various locations and the meeting will be held via Zoom conference. There will be NO physical location of the meeting. The public is strongly encouraged to use the Zoom app for best reception.
There may be limited opportunity to provide verbal comments during the meeting. Persons who are participating via telephone will need to press *9 to be acknowledged for comments. Members of the public participating by Zoom will be placed on mute during the proceedings and will be acknowledged only when public comment is allowed, after requesting and receiving recognition from the Board President. Public comment can also be submitted in writing to Paula Riso at priso@mcwd.org by 9:00 am on Monday, December 13, 2021; such comments will be distributed to the MCWD Board before the meeting.

This meeting may be accessed remotely using the following Zoom link:
https://us02web.zoom.us/j/81917923055?pwd=dmt1VXRyUkVxWElaaTNBdGNqSExBdz09
Passcode: 549319

To participate via phone: 1-669-900-9128; Meeting ID: 819 1792 3055 Passcode: 549319

Our Mission: *We provide our customers with high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management, and the development of water resources in an environmentally sensitive manner.*

1. Call to Order

2. Roll Call

3. Election of Board President and Vice-President for 2022
(Page 1)

This agenda is subject to revision and may be amended prior to the scheduled meeting. Pursuant to Government Code section 54954.2(a)(1), the agenda for each meeting of the Board shall be posted at the District offices at 11 Reservation Road, Marina. The agenda shall also be posted at the following locations, but those locations are not official agenda posting locations for purposes of section 54954.2(a)(1): City of Marina Council Chambers. A complete Board packet containing all enclosures and staff materials will be available for public review on the District website, Thursday, December 9, 2021. Information about items on this agenda or persons requesting disability related modifications and/or accommodations should contact the Board Clerk 48 hours prior to the meeting at: 831-883-5910

4. Public Comment on Closed Session Items *Anyone wishing to address the Board on matters appearing on Closed Session may do so at this time. Please limit your comment to four minutes. The public may comment on any other items listed on the agenda at the time they are considered by the Board.*

5. Closed Session

A. Pursuant to Government Code 54956.9
Conference with Legal Counsel – Existing Litigation
City of Marina vs. RMC Lonestar [CEMEX], California-America Water Company, Marina Coast WD, et al Defendants, Monterey County Superior Court Case No. 20CV001387 (Complaint for Breach of Contract, Declaratory Relief under the Agency Act, and Tortious Interference with Existing Contract)

B. Conference with Legal Counsel – Anticipated Litigation
Significant exposure to litigation pursuant to subdivision (b) of Section 54956.9
1-Case

7:30 p.m. Reconvene Open Session

6. Reportable Actions Taken During Closed Session *The Board will announce any reportable action taken during closed session and the vote or abstention on that action of every director present and may take additional action in open session as appropriate. Any closed session items not completed may be continued to after the end of all open session items.*

7. Pledge of Allegiance

8. Oral Communications *Anyone wishing to address the Board on matters not appearing on the Agenda may do so at this time. Please limit your comment to four minutes. The public may comment on any other items listed on the agenda at the time they are considered by the Board.*

9. Presentation

A. Receive a Presentation from Laura Jensen, California Water Commission, Regarding Groundwater Trading
(Page 2)

10. Consent Calendar

A. Receive and File the Check Register for the Month of November 2021
(Page 12)

B. Receive the Quarterly Financial Statements for April 1, 2021 to June 30, 2021
(Page 20)

C. Approve the Revised Draft Minutes of the Regular Joint Board/GSA Meeting of October 18, 2021
(Page 32)

D. Approve the Draft Minutes of the Regular Joint Board/GSA Meeting of November 15, 2021
(Page 40)

E. Receive the Validated 2020 Water Loss Audit Report and Level 1 Validation Document
(Page 48)

F. Approve the Proposed Regular Board/GSA Meeting and Workshop Meeting Schedule for 2022
(Page 83)

G. Adopt Resolution No. 2021-58 to Proclaim a Local Emergency, and Authorize Remote Teleconference Meetings of All District Legislative Bodies for the Following 30 Days
(Page 85)

11. Action Items *The Board will review and discuss agenda items and take action or direct staff to return to the Board for action at a following meeting. The public may address the Board on these Items as each item is reviewed by the Board. Please limit your comment to four minutes.*

A. Accept the Annual Comprehensive Financial Report and the Independent Auditor's Report for the Fiscal Year ended June 30, 2021
(Page 89)

B. Make Director Appointments to Standing Committees of the Board and to Outside Agencies for 2022, and as Negotiators to any Ad Hoc Committees of the Board
(Page 91)

12. Staff Report

A. Receive an Update on the Fiscal Impacts to the District due to Covid-19
(Page 94)

13. Informational Items *Informational items are normally provided in the form of a written report or verbal update and may not require Board action. The public may address the Board on Informational Items as they are considered by the Board. Please limit your comments to four minutes.*

A. General Manager's Report

B. Counsel's Report

C. Committee and Board Liaison Reports

1. Executive Committee
2. Community Outreach Committee
3. Budget and Personnel Committee
4. M1W Board Member Liaison
5. LAFCO Liaison

14. Board Member Requests for Future Agenda Items

15. Director's Comments *Director reports on meetings with other agencies, organizations and individuals on behalf of the District and on official District matters.*

16. Adjournment *Set or Announce Next Meeting(s), date(s), time(s), and location(s):*

Special Meeting: Tuesday, January 4, 2022, 5:30 p.m.

Regular Meeting: Wednesday, January 19, 2022, 6:30 p.m.

Return to Agenda

Marina Coast Water District
Agenda Transmittal

Agenda Item: 4 Meeting Date: December 14, 2020

Prepared By: Paula Riso Approved By: Remleh Scherzinger

Agenda Title: Election of Board President and Vice-President

Staff Recommendation: The Board of Directors elect a President and Vice-President to serve the next 1-year term.

Background: *Strategic Plan, Mission Statement – We Provide high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management and the development of water resources in an environmentally sensitive manner.*

Discussion/Analysis: The Board Procedures Manual states in part:

> "The Board of Directors shall have a President who is elected by the Board from among the five Directors. The President shall be elected annually in the month of December but not before any newly elected or reelected Director(s) have taken office. No Director shall serve more than three consecutive years as President. If a majority of the Directors cannot agree on who should be the new President, then the existing President shall remain President until the issue can be resolved."
>
> "This Board of Directors shall have one Vice-President who shall be elected by the Board from among the five Directors at the same time as the President is elected. The Vice-President shall be elected annually in the month of December but not before any newly elected or reelected Director(s) have taken office. It is the Board's policy to rotate the office of Vice-President among the Board members. However, no Director shall serve more than three consecutive years as Vice President. If a majority of the Directors cannot agree on who should be the new Vice President, then the existing Vice President shall continue in office until the issue can be resolved."

Environmental Review Compliance: None required.

Financial Impact: _____Yes ___X___No Funding Source/Recap: None

Other Considerations: None.

Material Included for Information/Consideration: None.

Action Required: _____Resolution ___X___Motion _____Review

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

Return to Agenda

Marina Coast Water District
Agenda Transmittal

Agenda Item: 9-A Meeting Date: December 13, 2021

Prepared By: Paula Riso Approved By: Remleh Scherzinger

Agenda Title: Receive a Presentation from Laura Jensen, California Water Commission, Regarding Groundwater Trading

Staff Recommendation: The Board of Directors receive a presentation on groundwater trading.

Background: *Strategic Plan Mission Statement – We provide our customers with high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management and the development of water resources in an environmentally sensitive manner.*

Discussion/Analysis: Ms. Jensen will give a brief presentation on groundwater trading.

Environmental Review Compliance: None required.

Financial Impact: ____Yes __X__No Funding Source/Recap: None

Other Consideration: None.

Material Included for Information/Consideration: Groundwater Slide Presentation.

Action Required: _____Resolution _____Motion ___X___Review

Board Action

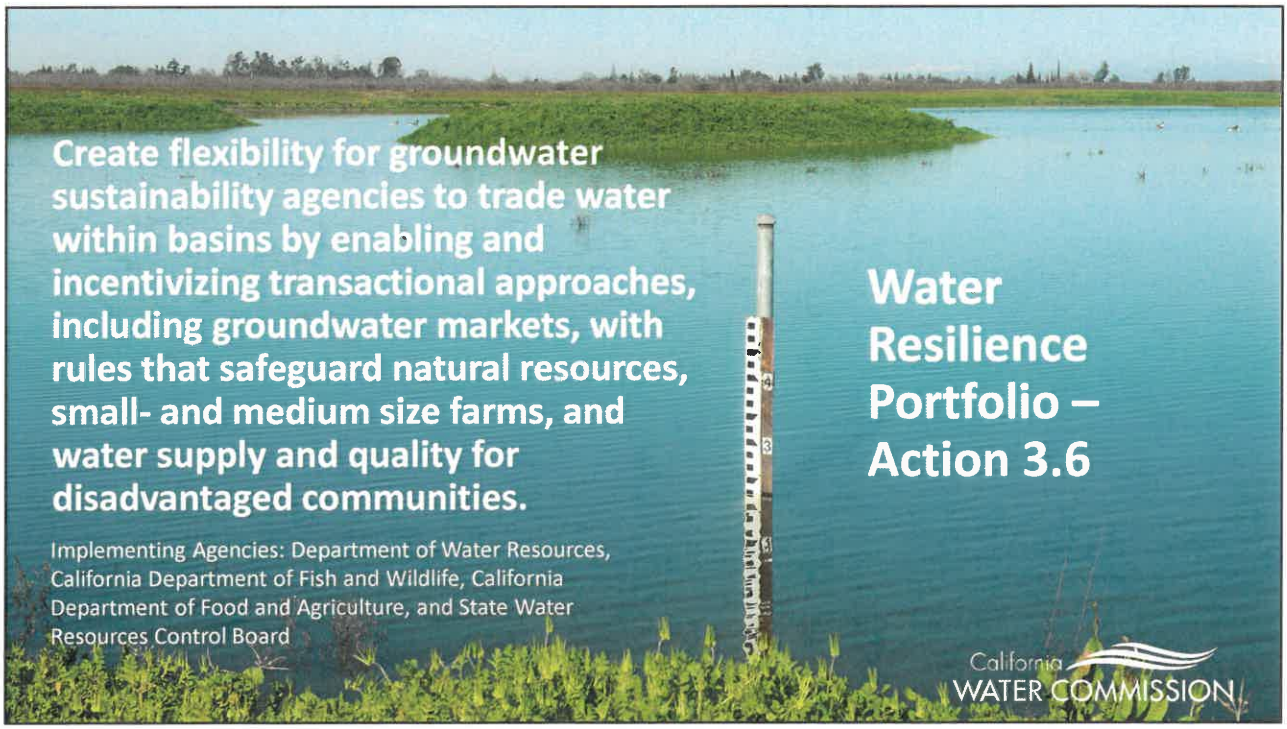
Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____


Discussion on Well-Managed Groundwater Trading
California
WATER COMMISSION
December 13 • 2021

1


Create flexibility for groundwater sustainability agencies to trade water within basins by enabling and incentivizing transactional approaches, including groundwater markets, with rules that safeguard natural resources, small- and medium size farms, and water supply and quality for disadvantaged communities.
Implementing Agencies: Department of Water Resources, California Department of Fish and Wildlife, California Department of Food and Agriculture, and State Water Resources Control Board
Water Resilience Portfolio – Action 3.6
California
WATER COMMISSION

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Commission timeline

Frame the Issue
- Expert Panels
- Small Group Conversations

June - September 2021

Hold Public Discussions
- Localized Outreach
- Public Workshops

September – December 2021

Draft White Paper
- Present Draft
- Present Final

January - March 2022

California Water Commission 3

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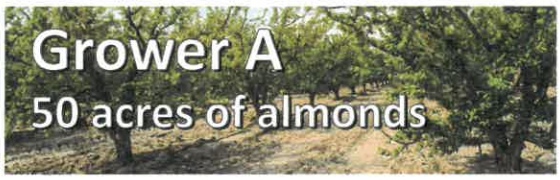
What is Groundwater Trading?



Requires: 150 AF

Allocation: 50 AF

Requires: 200 AF

Allocation: 100 AF

$$

Sold allocation to Grower A, fallowed crop

Purchased the ability to pump more water

California Water Commission 4

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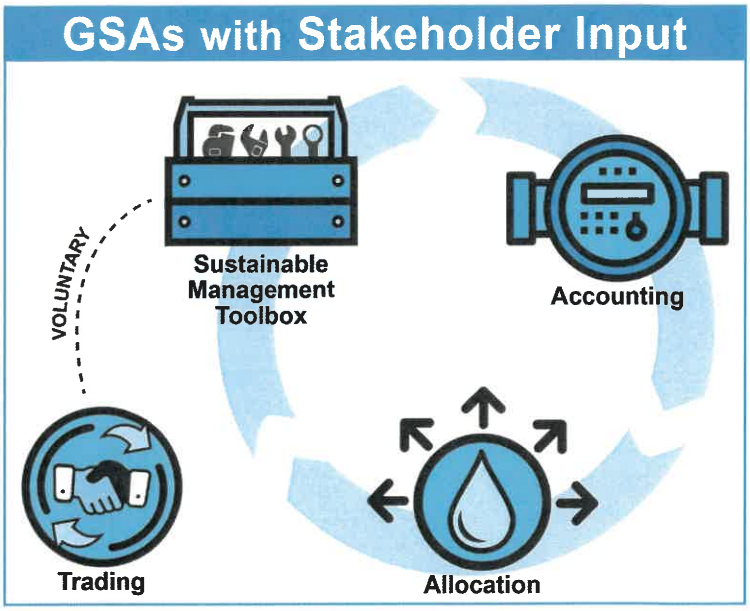
Accounting & Allocations: Building Blocks for Groundwater Trading

California WATER COMMISSION



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How is Groundwater Trading Related to SGMA?

- **GSAs** have the authority to allocate and manage groundwater.
- **The state** ensures that GSAs are compliant with SGMA by reviewing GSPs to make sure that they are adequate.

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Groundwater trading: Best case scenario

- Flexible, efficient approach to reduction of groundwater use
- Reduced economic impact to individuals, communities, region
- No negative impacts on third parties
- Opportunities for diverse water users to participate in ways that benefit them

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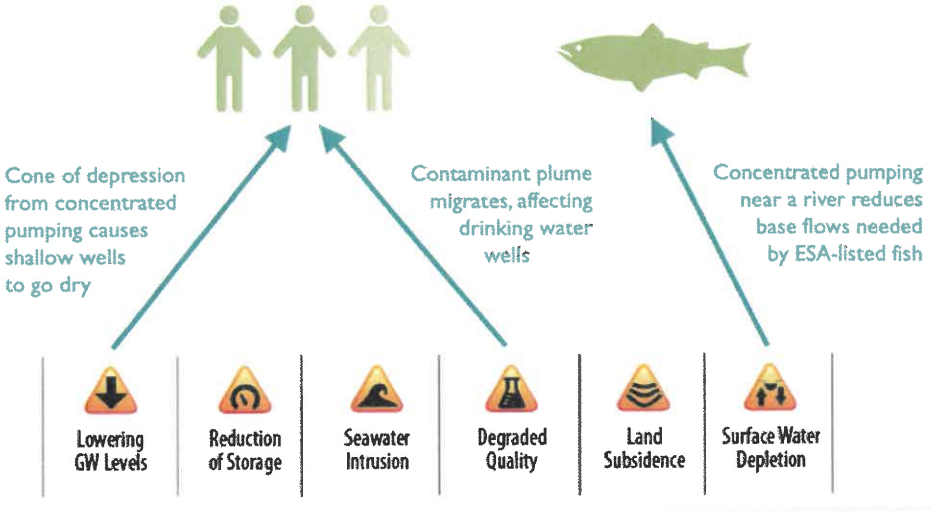
Groundwater trading: Potential negative impacts



Slide credit: Nell Green Nylen, Wheeler Water Institute, Center for Law, Energy & the Environment (CLEE), UC Berkeley School of Law

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Trading rules that could help minimize impacts:

Impacts	Trading rules
Cone of depression causes shallow drinking water or agricultural wells to go dry	• Spatial concentration limits • Pumping schedules
Contaminant plume migration makes water from drinking water wells unsafe to drink	• Pumping restrictions to prevent migration • Requirements to provide substitute water
Excessive pumping near a river drops its level too low, imperiling fish	• Directional restrictions ("sell-only" zone) • Closure dates
Landowners selling extraction allocations out from under tenant farmers	• Notice requirements • Consent requirements
Various	• Mitigation / compensation requirements

Slide credit: Nell Green Nylen, Wheeler Water Institute, Center for Law, Energy & the Environment (CLEE), UC Berkeley School of Law

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Cross-cutting themes

- Trust is critical
- Part of a larger groundwater management effort
- Good data is imperative
- Start small – geographically, temporally
- Beware market power & gaming the system
- State has a role to play

California Water Commission 10

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Characteristics of well-managed trading

Precursors

- Accounting and allocations are in place
- Water use is measured
- Flexibility to develop local solutions exists
- Good governance is in place

Design

- Goal for trading program is articulated
- Stakeholders are fully engaged
- Understanding of third-party impacts
- Clear, well-designed trading rules are developed
- Design is tested & refined

Operation

- Market information is transparent
- Operations are efficient
- Means of monitoring/reporting *and mitigating* impacts is in place
- Enforcement is consistent

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Points of Divergence

Transparency ↔ Confidentiality

What mechanisms are needed to ensure public trust in the process?

How should sensitive information be managed? What types of information should be disclosed?

Customization ↔ Standardization

How would unique, place-based solutions be considered?

How could economies of scale and State resources be used to enhance the program?

Local Control ↔ State Oversight

What mechanisms are needed to maintain the integrity of SGMA and the authority given to GSAs?

What safeguards should be in place if trading becomes harmful to beneficial users? Who would oversee them?

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Role for the State

- Provide information & education
- Provide technical & financial assistance
- Provide guidance/minimum standards
- Ensure metrics, monitoring are in place
- Ensure Human Right to Water is met
- Enforce safeguards for vulnerable users
- Other?

13

Discussion Questions

1. What do you think about groundwater trading programs?

2. Is groundwater trading likely to impact or benefit you?

3. What would make groundwater trading programs work well?

4. What role would you like to see the state play?

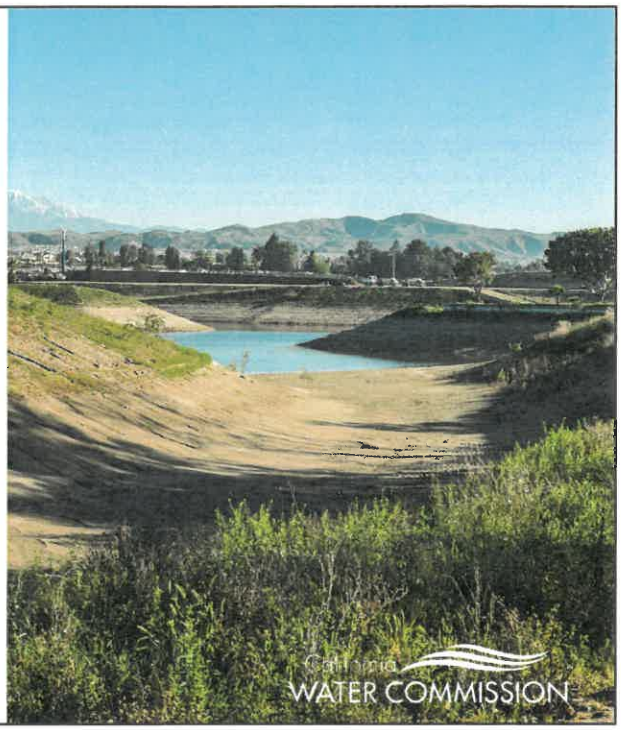
14

Upcoming Commission Meetings

- January – discussion of draft white paper [anticipated]
- March – presentation of final white paper [anticipated]

More information:

https://cwc.ca.gov/Meetings



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Contacts

Laura.Jensen@water.ca.gov

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Return to Agenda

Marina Coast Water District
Agenda Transmittal

Agenda Item: 10 Meeting Date: December 13, 2021

Prepared By: Paula Riso Approved By: Remleh Scherzinger

Agenda Title: Consent Calendar

Staff Recommendation: The Board of Directors approve the Consent Calendar as presented.

Background: *Strategic Plan Mission Statement – We provide our customers with high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management and the development of water resources in an environmentally sensitive manner.*

Consent calendar consisting of:

A) Receive and File the Check Register for the Month of November 2021
B) Receive the Quarterly Financial Statements for April 1, 2021 to June 30, 2021
C) Approve the Revised Draft Minutes of the Regular Joint Board/GSA Meeting of October 18, 2021
D) Approve the Draft Minutes of the Regular Joint Board/GSA Meeting of November 15, 2021
E) Receive the Validated 2020 Water Loss Audit Report and Level 1 Validation Document
F) Consider Approving the Proposed Regular Board/GSA Meeting and Workshop Meeting Schedule for 2021
G) Adopt Resolution No. 2021-58 to Proclaim a Local Emergency, and Authorize Remote Teleconference Meetings of All District Legislative Bodies for the Following 30 Days

Discussion/Analysis: See individual transmittals.

Environmental Review Compliance: None required.

Other Considerations: The Board of Directors can approve these items together or they can pull them separately for discussion.

Material Included for Information/Consideration: Check Register for November 2020; quarterly financial statements for April 1, 2021 to June 30, 2021; draft minutes of October 18, 2021; draft minutes of November 15, 2021; the Validated 2020 Water Loss Audit Report and review document; and, Resolution No.2021-58.

Action Required: _____Resolution ___X___Motion _____Review
(Roll call vote is required.)

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

Return to Agenda

Marina Coast Water District
Agenda Transmittal

Agenda Item: 10-A Meeting Date: December 13, 2021

Prepared By: Kelly Cadiente Approved By: Remleh Scherzinger

Agenda Title: Receive and File the Check Register for the Month of November 2021

Staff Recommendation: The Board of Directors receive and file the November 2021 expenditures totaling $2,755,550.52.

Background: *Strategic Plan, Objective No. 3 – Our objective is to manage public funds to assure financial stability, prudent rate management and demonstrate responsible stewardship. Our fiscal strategy is to forecast, control and optimize income and expenditures in an open and transparent manner. We will efficiently use our financial resources to assure availability to fund current and future demands.*

Discussion/Analysis: These expenditures were paid in November 2021 and the Board is requested to receive and file the check register.

Environmental Review Compliance: None required.

Financial Impact: _____Yes __X__No Funding Source/Recap: Expenditures are allocated across the six cost centers; 01-Marina Water, 02-Marina Sewer, 03- Ord Water, 04- Ord Sewer, 05-Recycled Water, 06-Regional Water.

Other Consideration: None.

Material Included for Information/Consideration: November 2021 Summary Check Register.

Action Required: _____Resolution __X__Motion _____Review
(Roll call vote is required.)

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

November 2021 SUMMARY CHECK REGISTER

DATE	CHECK #	CHECK DESCRIPTION	AMOUNT
11/05/2021	Wire	Friedman & Springwater LLP	66,663.50
11/05/2021	71293 - 71366	Check Register	411,380.21
11/10/2021	71367 - 71395	Check Register	361,690.26
11/19/2021	Wire	U.S. Bank National Association	921,130.32
11/19/2021	71396 - 71444	Check Register	478,582.49
11/02/2021	ACH	Internal Revenue Service	382.57
11/02/2021	501257	Board Compensation Checks and Direct Deposit	2,254.86
11/05/2021	501258 - 501260	Check Register	1,427.70
11/12/2021	ACH	CalPERS	26,938.87
11/12/2021	ACH	Internal Revenue Service	52,780.82
11/12/2021	ACH	MassMutual Retirement Services, LLC	10,360.44
11/12/2021	ACH	State of California - EDD	12,387.75
11/12/2021	501261 - 501266	Payroll Checks and Direct Deposit	124,707.92
11/12/2021	501267 - 501268	Check Register	1,684.01
11/22/2021	501269 - 501272	Check Register	84,317.56
11/26/2021	ACH	CalPERS	25,342.54
11/26/2021	ACH	Internal Revenue Service	42,174.92
11/26/2021	ACH	MassMutual Retirement Services, LLC	9,963.94
11/26/2021	ACH	State of California - EDD	9,735.19
11/26/2021	501273 - 501275	Payroll Checks and Direct Deposits	110,826.64
11/26/2021	501276	Check Register	818.01
		TOTAL DISBURSEMENTS	**2,755,550.52**

Check No	Invoice Date	Check Date	Vendor Name	Description	Amount
Wire	10/05/2021	11/05/2021	Friedman & Springwater LLP	Legal Fees - MCWD v CPUC, RPD Superior Court Damages Cases, CEMEX Litigation 09/2021	66,663.50
71293	10/08/2021	11/05/2021	Salinas Valley Ford	Vehicle Inspection, Brake Repair, Oil Change - Vehicle #1235	1,720.06
71294	10/07/2021	11/05/2021	City of Marina	Encroachment Permit - 285 Young Cir	155.00
71295	10/13/2021	11/05/2021	Monterey Peninsula Unified School District	Water Conservation Education 09/2021	1,940.91
71296	10/08/2021	11/05/2021	Denise Duffy & Associates, Inc.	Post-Construction Biological and Non-Biological Monitoring - RUWAP; Water Distribution Laterals Construction Compliance - RUWAP, CSUMB, Bayonet	27,353.30
71297	10/07/2021	11/05/2021	PG&E	Gas and Electric Service 09/2021	90,065.66
71298	10/07/2021	11/05/2021	Grainger	(4) Safety Vests	100.51
71299	10/19/2021	11/05/2021	Area Communications	Answering Service 09/22 - 10/19	164.00
71300	10/14/2021	11/05/2021	Hopkins Technical Products, Inc.	Chlorine Analyzer Maintenance - (9) Sites; Chlorine Analyzer, Membrane Caps	7,108.42
71301	10/26/2021	11/05/2021	Monterey Bay Analytical Services	Laboratory Testing	1,170.00
71302	09/01/2021	11/05/2021	Industrial Machine Shop	Metal Roof Framing - Well 31	1,028.63
71303	10/18/2021	11/05/2021	Verizon Wireless	Cell Phone Service 10/2021	1,696.37
71304	10/18/2021	11/05/2021	Orkin Franchise 925	Pest Control - BLM 10/2021	191.00
71305	03/10/2021	11/05/2021	Johnson Controls Security Solutions LLC	Service Cancellation - Modular Office	439.30
71306	10/07/2021	11/05/2021	Maggiora Bros Drilling	Service Call, 300 HP VHS Motor - Well 31	44,650.00
71307	10/12/2021	11/05/2021	Maynard Group	AT&T Wireless Backup, eMVS Cloud, VoIP Services, NEC Phone Equipment Maintenance, General Services 10/2021	4,735.48
71308	10/08/2021	11/05/2021	Forensic Analytical Consulting Services, Inc.	Asbestos Cement Pipe Classes	2,900.00
71309	10/19/2021	11/05/2021	Core & Main LP	(2) MM 2" SS Octave Meters - Hampton Inn; (2) Mega Flanges - Ord Well Field Bypass; MM 2" SS Octave Meter, General Supplies	5,432.98
71310	10/24/2021	11/05/2021	NEC Financial Services, Inc.	Phone Equipment Lease 10/2021	335.76
71311	10/07/2021	11/05/2021	Fastenal Industrial & Construction Supplies	General Supplies	210.81
71312	10/12/2021	11/05/2021	Sabre Backflow, LLC	General Supplies	139.33
71313	10/19/2021	11/05/2021	Cal-Risk Control Services, Inc	First Aid/ CPR, Silica/ Valley Fever, COVID-19 Prevention, Forklift Training Certifications	419.00
71314	10/15/2021	11/05/2021	Integrity Print & Design LLC	(250) Business Cards - District Engineer	44.79
71315	10/13/2021	11/05/2021	Univar Solutions USA, Inc.	Chlorine - Wells 10 and 11, Intermediate Reservoir	4,622.45
71316	09/15/2021	11/05/2021	WIN-911 Software	Annual Software Maintenance and Support	1,320.00
71317	10/08/2021	11/05/2021	Sturdy Oil Company	(25) 5-gallon Pails Clarion FM AW32 Hydraulic Oil	3,005.47
71318	10/14/2021	11/05/2021	Conservation Rebate Program	3120 Bradley Cir - Washer Rebate	150.00
71319	09/30/2021	11/05/2021	Star Sanitation LLC	Mobile Restroom Rental - Beach Office	71.01
71320	10/22/2021	11/05/2021	Central Coast Sign & Design	MCWD Metal Site Sign	136.43
71321	10/08/2021	11/05/2021	Industrial Safety Gear	(28) High Visibility Safety Jackets	866.64
71322	09/30/2021	11/05/2021	ECAM Secure	Monthly Security Fees - Ord Wastewater Treatment Facility	1,218.50
71323	10/14/2021	11/05/2021	CLK Supplies, LLC	(9) Schlage Locks, Various Schlage Bottom/ Master Pins	434.47

Check No	Invoice Date	Check Date	Vendor Name	Description	Amount
71324	10/07/2021	11/05/2021	Conservation Rebate Program	125 Redondo Ct - Washer Rebate	100.00
71325	09/13/2021	11/05/2021	Craig Evans Pump Testing Service	Pump Testing - (24) Sites	5,900.00
71326	11/03/2021	11/05/2021	Government Finance Officers Association	Annual Governmental GAAP Update Webinar - Accounting Supervisor	150.00
71327	10/06/2021	11/05/2021	U.S. Bank Corporate Payment Systems	Employment Advertisements (Accountant, System Operator I), 2021 ACWA Conference - GM, Cross-Connection Control Specialist Training - Lead Operator, Construction Inspection Workshop - Senior Engineer, SCADA Internet Service, Cloud Hosted Server - CityWorks/ ESRI, SCADA Mobile/ Laptop Hotspot, General Supplies	7,627.90
71328	10/20/2021	11/05/2021	Marina Tire & Auto Repair	Oil Change, Rear Brake Pad Replacement - Vehicle #1304, Oil Change - Vehicle #1238	349.90
71329	10/12/2021	11/05/2021	Richards, Watson & Gershon	Legal Fees - Opp to Cal Am Asserted Water Rights to CEMEX Prop, Regional Project Litigation 09/2021	37,335.99
71330	10/07/2021	11/05/2021	Conservation Rebate Program	3094 Redwood Cir - Landscape Rebate	337.82
71331	10/12/2021	11/05/2021	Abacherli Fence Co.	Fence/ Gate Installation - Watkins Gate Well	6,015.00
71332	10/22/2021	11/05/2021	ICONIX Waterworks (US), Inc.	(2) Flanged Elbows, Mega Flange Kit, Mega Lug Kit - Ord Well Field Bypass; (3) 8" Cla-Val Booster Control Valves - Marina Booster; Gate Valve, Mega Flange Kit - Ord Water Pressure Relief Valve; Ford Saddle Brass Cap, Saddle Strap - Well 31; General Supplies	53,066.42
71333	10/26/2021	11/05/2021	Eurofins Eaton Analytical, LLC	Laboratory Testing	1,550.00
71334	10/26/2021	11/05/2021	Access Monterey Peninsula, Inc.	Filming and Production 10/2021	460.00
71335	10/07/2021	11/05/2021	Evoqua Water Technologies, LLC	Chemical Pump Maintenance - East Garrison LS	1,635.49
71336	10/31/2021	11/05/2021	Peninsula Messenger LLC	Courier Service 11/2021	173.00
71337	10/28/2021	11/05/2021	AT&T	Phone and Alarm Line Services 11/2021	190.13
71338	10/11/2021	11/05/2021	EKI Environment & Water, Inc.	Monterey Subbasin Groundwater Sustainability Plan Prop 68, Groundwater Sustainability Planning Study	73,959.34
71339	09/30/2021	11/05/2021	Cintas Corporation No. 630	Uniforms, Towels, Rugs 09/2021; District Sweatshirts	1,689.10
71340	10/21/2021	11/05/2021	Conservation Rebate Program	3133 Ocean Ter - Toilet Rebate	50.00
71341	10/08/2021	11/05/2021	Ferguson Enterprises, Inc.	(4) Ball Corporation Stops	358.76
71342	10/25/2021	11/05/2021	WEX Bank	Fleet Gasoline 10/2021	5,274.94
71343	10/13/2021	11/05/2021	Conservation Rebate Program	3083 Crescent Ave - (2) Toilet Rebates	100.00
71344	10/13/2021	11/05/2021	School Specialty, LLC	General Supplies	10.20
71345	10/21/2021	11/05/2021	Conservation Rebate Program	2967 Hayden Way - Washer Rebate	150.00
71346	10/27/2021	11/05/2021	Conservation Rebate Program	476 Hood Way - Washer Rebate	100.00
71347	08/25/2021	11/05/2021	American Water Works Association	Utility Membership 12/2021 - 11/2022	2,373.00
71348	10/21/2021	11/05/2021	Interstate Battery of San Jose	(4) Batteries - C Reservoir; Battery - Valve Turner Truck	757.46
71349	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 483 Larson Ct	46.36
71350	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 3102 Bayer St	16.63

Check No	Invoice Date	Check Date	Vendor Name	Description	Amount
71351	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 479 Logan Way	41.63
71352	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 210 Sicily Rd	200.00
71353	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 3102 Bayer St	40.26
71354	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - Hydrant Meter	1,912.09
71355	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 250 Reservation Rd #D	26.22
71356	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 3003 Tyndall Way	11.59
71357	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 165 Pebble Pl	67.42
71358	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - Hydrant Meter	1,857.12
71359	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - Hydrant Meter	1,908.61
71360	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 3008 Concord Ct	128.64
71361	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 178 Noumea Rd	35.00
71362	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 131 Robin Dr	14.86
71363	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 353 Ardennes Cir	23.21
71364	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 18915 Kilpatrick Ln	26.61
71365	10/28/2021	11/05/2021	Customer Service Refund	Refund Check - 476 Hood Way	35.00
71366	11/03/2021	11/05/2021	Customer Service Refund	Refund Check - 484 Logan Way	1,448.23
71367	10/31/2021	11/10/2021	Ace Hardware of Watsonville, Inc.	General Supplies	706.75
71368	10/30/2021	11/10/2021	Insight Planners	Web Development/ Maintenance and Hosting 10/2021	1,734.00
71369	11/01/2021	11/10/2021	Grainger	4 Cycle Gas Engine - Valve Turner Truck; Flame Resistant Tarp, Fire Hose Adapter	3,261.64
71370	08/31/2021	11/10/2021	Schaaf & Wheeler	Construction Meetings, Respond to RFI's, Review Submittals - Ord Village LS FM Improvements; Design Phase - A1/A2 Tanks B/C Booster; Developers (Campus Town, Enclave at Cypress Grove, Wathen-Castanos Homes)	39,042.06
71371	10/31/2021	11/10/2021	Peninsula Welding & Medical Supply, Inc.	Gas Cylinder Tank Rental Fee - Welding Supplies	12.90
71372	10/27/2021	11/10/2021	CWEA - Monterey Bay Section	Membership Renewal - O&M	288.00
71373	10/14/2021	11/10/2021	Harris & Associates	Developers (City of Marina Slurry, Dunes 2 East, Enclave at Cypress Grove, Hampton Inn, Lower Stilwell, Wathen-Castanos Homes)	30,305.90
71374	10/15/2021	11/10/2021	Johnson Controls Security Solutions LLC	(4) Replacement Smoke Sensors - Ord Office	2,305.13
71375	10/27/2021	11/10/2021	State Water Resources Control Board	Grade I Wastewater Treatment Certificate Renewal - O&M	110.00
71376	10/19/2021	11/10/2021	CSC of Salinas	General Supplies	26.76
71377	10/13/2021	11/10/2021	Carollo Engineers, Inc.	Construction Meetings, Submittal Review, Design Clarification - RUWAP	29,131.18
71378	09/29/2021	11/10/2021	Calcon Systems, Inc.	Chlorine/ Communication/ SCADA Programming Changes, Flume Meter Calibration	24,950.00
71379	11/01/2021	11/10/2021	Daiohs USA	Coffee Supplies	283.17
71380	10/19/2021	11/10/2021	Sherwin-Williams Co.	Paint - Beach Office Renovation	495.48
71381	10/21/2021	11/10/2021	Global Equipment Company, Inc.	General Supplies	64.39
71382	10/26/2021	11/10/2021	Marina Tire & Auto Repair	Brake Rotors - Vehicle #1304	420.39

Check No	Invoice Date	Check Date	Vendor Name	Description	Amount
71383	11/04/2021	11/10/2021	U.S. Bank National Association	Beach Office Copier Lease 09/2021 - 10/2021	550.64
71384	10/25/2021	11/10/2021	U.S. Bank National Association	IOP Office Copier Lease 11/2021	287.34
71385	10/20/2021	11/10/2021	Remy Moose Manley, LLP	Legal Fees - CPUC 08/2021; CPUC, CSUMB, Desalination Plan/ MPWSP, H2O 09/2021	79,413.00
71386	11/02/2021	11/10/2021	Monterey Bay Technologies, Inc.	(2) Tripplite 1350 VA UPS, IT Support Services 11/2021	3,668.48
71387	11/02/2021	11/10/2021	ICONIX Waterworks (US), Inc.	Meter Box Lid - 431 Reindollar Ave, (2) Air Release Valves	944.31
71388	10/31/2021	11/10/2021	Eurofins Eaton Analytical, LLC	Laboratory Testing	1,190.00
71389	10/29/2021	11/10/2021	The Pun Group, LLP	2021 Audit - 1st Progress Billing	20,000.00
71390	10/19/2021	11/10/2021	Aleshire & Wynder, LLP	Legal Fees - Opinion for Bay View Community vs. MCWD 09/2021	23,838.55
71391	10/29/2021	11/10/2021	Marina Coast Water District (BLM)	BLM Water, Sewer, Fire Service 10/2021	372.75
71392	11/01/2021	11/10/2021	Pure Janitorial, LLC	Janitorial Service - MCWD, BLM Offices 10/2021, Check Re-Issue 09/2021	11,200.00
71393	10/31/2021	11/10/2021	Cintas Corporation No. 630	Uniforms, Towels, Rugs 10/2021; District Sweatshirts	3,749.22
71394	10/22/2021	11/10/2021	United Rentals, Inc.	Light Tower	11,938.85
71395	10/18/2021	11/10/2021	Psomas	Construction Management/ Inspections - Ord Village LS FM Improvements, A1/A2 Tanks B/C Booster; Developer (Seaside Senior Living Project)	71,399.37
Wire	10/20/2021	11/19/2021	U.S. Bank National Association (Bond Payments)	2015 Series A Bond and 2019 Series Bond Payments	921,130.32
71396	11/19/2021	11/19/2021	CSUMB	Permitting/ Support Services - A1/A2 Tanks B/C Booster	195,910.00
71397	10/28/2021	11/19/2021	Quinn Company	Fuel System Repair	390.00
71398	11/03/2021	11/19/2021	Becks Shoe Store, Inc. - Salinas	Boot Benefit - Meter Reader	153.22
71399	09/21/2021	11/19/2021	Monterey Co Tax Collector	Property Fees	1,954.40
71400	09/21/2021	11/19/2021	Monterey Co Tax Collector	Property Fees	2,011.52
71401	10/28/2021	11/19/2021	Home Depot Credit Services	(2) Cat 6 Jacks, 100' Cat 6 Data Cable, Melamine Shelving, General Supplies - Beach Office Renovation	808.04
71402	09/30/2021	11/19/2021	Schaaf & Wheeler	Construction Meetings, Respond to RFI's, Review Submittals - Ord Village LS FM Improvements; Design Phase/ Construction Support - A1/A2 Tanks B/C Booster; RFI's Review Civil/ Painting Contracts - Intermediate Reservoir; Submittal Reviews - Gigling LS FM; Developers (Campus Town, Enclave at Cypress Grove, Wathen-Castanos Homes)	48,278.70
71403	11/10/2021	11/19/2021	MBS Business Systems	Copier Maintenance (3 Units) 08/06 - 02/11	1,386.57
71404	10/27/2021	11/19/2021	McMaster-Carr Supply Co.	General Supplies	26.40
71405	11/03/2021	11/19/2021	Monterey Bay Analytical Services	Laboratory Testing	330.00
71406	11/04/2021	11/19/2021	CWEA - Monterey Bay Section	Membership Renewal - O&M	192.00
71407	11/17/2021	11/19/2021	SWRCB - DWOCP	Grade V Water Distribution Operator Certification Renewal - O&M	210.00
71408	11/05/2021	11/19/2021	Staples Credit Plan	Storage Cabinet - IOP Conference Room; (7) Chair Mats, (3) Monitor Stands, (2) Trash Cans, Office Supplies	1,311.03

Check No	Invoice Date	Check Date	Vendor Name	Description	Amount
71409	10/13/2021	11/19/2021	Harris & Associates	Inspection Services - Crescent Ave Connector, RUWAP Distribution	76,482.21
71410	11/01/2021	11/19/2021	Pacific Smog	Smog Test - (5) Vehicles	198.75
71411	11/01/2021	11/19/2021	Maynard Group	AT&T Wireless Backup, eMVS Cloud, VoIP Services, NEC Phone Equipment Maintenance, General Services 11/2021	3,765.03
71412	10/27/2021	11/19/2021	Shape Incorporated	Flygt MiniCAS Pump Sensor Monitor - Dunes LS	651.93
71413	11/04/2021	11/19/2021	HD Supply Facilities Maintenance LTD	(4) Swivel Adapters, Chlorine Test Kit	1,678.08
71414	11/04/2021	11/19/2021	Core & Main LP	Cast Iron Grate, Concrete Drain Box - 431 Reindollar Ave; (3) 12" Stargrip PVC Kits, 12" 90 Degree Mechanical Joint, (2) 12" Magaflanges, Flanges - PRVs; (100) 3/4" Registers, (150) Registers Bottom Load, (20) 1 1/2" Registers, (20) 2" Registers, (2) Saddle Straps, (2) Ball Corp Stops, General Supplies	50,348.84
71415	10/31/2021	11/19/2021	DataProse, LLC	Customer Billing Statements 10/2021	4,966.08
71416	11/18/2021	11/19/2021	Employee Reimbursement	Poster Paper - Conservation Education Program	50.23
71417	10/27/2021	11/19/2021	American Supply Company	Janitorial Supplies	461.75
71418	10/28/2021	11/19/2021	O'Reilly Automotive Stores, Inc.	Auto/ General Supplies	75.35
71419	10/29/2021	11/19/2021	BHI Management Consulting	Strategic Planning Preparation/ Meeting	975.00
71420	08/30/2021	11/19/2021	Calcon Systems, Inc.	PLC Programming - Various Sites, SCADA Updates, Service Call	21,027.50
71421	10/26/2021	11/19/2021	Power Engineers, Inc.	CityWorks/ ESRI Support Services 10/2021	3,380.00
71422	10/31/2021	11/19/2021	Star Sanitation LLC	Mobile Restroom Rental - Beach Office	71.01
71423	10/31/2021	11/19/2021	ECAM Secure	Monthly Security Fees - Ord Waste Water Treatment Facility	1,218.50
71424	11/02/2021	11/19/2021	CARB/ PERP	Registration Fee - Tow Behind Bypass Pump	805.00
71425	10/25/2021	11/19/2021	Green Rubber-Kennedy AG, LP	Rain Gear, General Supplies	201.25
71426	11/04/2021	11/19/2021	Marina Tire & Auto Repair	Oil Change, Tire Rotation, Tire Repair - Vehicle #1801	130.00
71427	11/09/2021	11/19/2021	Chicago Title Company	Title Report - City of Marina Corporate Yard Easement	500.00
71428	11/09/2021	11/19/2021	Eurofins Eaton Analytical, LLC	Laboratory Testing	105.00
71429	10/07/2021	11/19/2021	Griffith, Masuda & Hobbs	Legal Fees - ACWA JPIA, Armstrong Ranch Property, Bay View Mobile Home Park, CSUMB, Infrastructure Agreement, Procurement, PWM Expansion, GSA (City of Marina, City of Marina GSA Lawsuit, Groundwater, Moss Landing Brackish Water Desal Project), Developer (Campus Town, Hamstra Infrastructure Agreement), General Matters 09/2021	25,093.27
71430	11/15/2021	11/19/2021	WageWorks, Inc.	FSA Admin Fees 10/2021	158.00
71431	11/03/2021	11/19/2021	Western Exterminator Company	Pest Control - Beach Office 11/2021	97.91
71432	11/06/2021	11/19/2021	TIAA Commercial Finance, Inc.	Ord Office Copier, eCopy ScanStation Lease 11/2021	422.04
71433	10/31/2021	11/19/2021	Iron Mountain, Inc.	Shredding Service 10/2021	206.88
71434	11/01/2021	11/19/2021	Simpler Systems, Inc.	UB Datapp Maintenance 11/2021	500.00
71435	10/30/2021	11/19/2021	Johnson Electronics	BLM Fire Alarm Monitoring 10/2021 - 12/2021	84.00

Check No	Invoice Date	Check Date	Vendor Name	Description	Amount
71436	10/26/2021	11/19/2021	Akel Engineering Group, Inc.	Capacity Fee Study	3,565.00
71437	11/01/2021	11/19/2021	Verizon Connect NWF, Inc.	GPS Service - (2) Meter Reader Trucks 10/2021	38.00
71438	11/08/2021	11/19/2021	The Pape' Group, Inc.	Maintenance/ Repairs - Vehicle #1201	8,081.50
71439	10/31/2021	11/19/2021	AutoZone Parts, Inc.	Auto/ General Supplies	30.13
71440	11/02/2021	11/19/2021	Conservation Rebate Program	145 Lakewood Dr - Hot Water Recirculation Pump Rebate	250.00
71441	10/21/2021	11/19/2021	Conservation Rebate Program	5000 Beachwood Dr - (3) Toilet Rebates	600.00
71442	11/05/2021	11/19/2021	Bartle Wells Associates	Capacity Fee Study	8,755.00
71443	11/01/2021	11/19/2021	Greenwaste Recovery, Inc.	Garbage Collection & Recycling Services 11/2021	777.38
71444	11/17/2021	11/19/2021	Customer Service Refund	Refund Check - 9th St West of 2nd Ave	9,869.99
ACH	11/02/2021	11/02/2021	Internal Revenue Service	Board Compensation 07/2021 - 10/2021	382.57
501257	11/02/2021	11/02/2021	Payroll Checks and Direct Deposit	Board Compensation 07/2021 - 10/2021	2,254.86
501258	10/18/2021	11/05/2021	Principal Life	Employee Paid Benefits 11/2021	259.60
501259	10/15/2021	11/05/2021	WageWorks, Inc.	FSA Admin Fees 09/2021	158.00
501260	10/15/2021	11/05/2021	Transamerica Life Insurance Company	Employee Paid Benefits 10/2021	1,010.10
ACH	11/12/2021	11/12/2021	CalPERS	Payroll Ending 11/05/2021	26,938.87
ACH	11/12/2021	11/12/2021	Internal Revenue Service	Payroll Ending 11/05/2021	52,780.82
ACH	11/12/2021	11/12/2021	MassMutual Retirement Services, LLC	Payroll Ending 11/05/2021	10,360.44
ACH	11/12/2021	11/12/2021	State of California - EDD	Payroll Ending 11/05/2021	12,387.75
501261 - 501263			Void		
501264 - 501266	11/12/2021	11/12/2021	Payroll Checks and Direct Deposits	Payroll Ending 11/05/2021	124,707.92
501267	11/12/2021	11/12/2021	General Teamsters Union	Payroll Ending 11/05/2021	866.00
501268	11/12/2021	11/12/2021	WageWorks, Inc.	Payroll Ending 11/05/2021	818.01
501269	11/02/2021	11/22/2021	ACWA/ JPIA	Medical, Dental, Vision, EAP Insurance 12/2021	81,590.52
501270	10/25/2021	11/22/2021	AFLAC	Employee Paid Benefits 10/2021	2,359.14
501271	11/05/2021	11/22/2021	LegalShield	Employee Paid Benefits 11/2021	25.90
501272	11/02/2021	11/22/2021	Boutin Jones, Inc.	Legal Fees - Employment	342.00
ACH	11/26/2021	11/26/2021	CalPERS	Payroll Ending 11/19/2021	25,342.54
ACH	11/26/2021	11/26/2021	Internal Revenue Service	Payroll Ending 11/19/2021	42,174.92
ACH	11/26/2021	11/26/2021	MassMutual Retirement Services, LLC	Payroll Ending 11/19/2021	9,963.94
ACH	11/26/2021	11/26/2021	State of California - EDD	Payroll Ending 11/19/2021	9,735.19
501273 - 501275	11/26/2021	11/26/2021	Payroll Checks and Direct Deposits	Payroll Ending 11/19/2021	110,826.64
501276	11/26/2021	11/26/2021	WageWorks, Inc.	Payroll Ending 11/19/2021	818.01
				Total Disbursements for November 2021	**2,755,550.52**

Return to Agenda

Marina Coast Water District
Agenda Transmittal

Agenda Item: 10-B Meeting Date: December 13, 2021

Prepared By: Kelly Cadiente Approved By: Remleh Scherzinger

Agenda Title: Receive the Quarterly Financial Statements for April 1, 2021, to June 30, 2021

Staff Recommendation: The Board receives the Quarterly Financial Statements for April 1, 2021, to June 30, 2021.

Background: *District Strategic Plan, Strategic Element No. 3.2 – Regular Financial Updates to Policymakers and Managers.*

Discussion/Analysis: All figures reported for the quarter are based on accrual basis accounting. The District's consolidated financial statement for the quarter includes operating revenues of $5.554 million and expenses of $4.736 million, resulting in a net gain from operations of $0.818 million. The District budget projected a net loss from operations of $0.171 million for the same period.

The difference between the actual net gain from operations for the quarter from the budget loss expectation is $0.989 million due to the timing of when revenues are earned and expenses are accrued producing different results than those in which the annual budget amounts are divided evenly by quarter.

Summary of Cost Centers:

Description	Actual Qtr	Budget Qtr	Actual FYTD	Budget FYTD
Marina Water				
Revenue	1,410,657	1,123,888	4,277,731	4,495,551
Expenses	1,128,673	1,132,186	3,753,985	4,528,739
Net Gain/(Loss)	281,984	(8,298)	523,746	(33,188)
Marina Sewer				
Revenue	469,424	378,345	1,459,956	1,513,379
Expenses	284,547	243,164	821,011	972,658
Net Gain/(Loss)	184,877	135,181	638,945	540,721
Ord Community Water				
Revenue	2,721,594	2,136,750	8,735,691	8,546,998
Expenses	2,499,513	2,558,978	8,388,870	10,235,915
Net Gain/(Loss)	222,081	(422,228)	346,821	(1,688,917)
Ord Community Sewer				
Revenue	952,501	783,257	3,232,485	3,133,027
Expenses	660,737	555,764	1,913,578	2,223,056
Net Gain/(Loss)	291,764	227,493	1,318,907	909,971

Recycled Water Project				
Revenue	3	50	4	200
Expenses	162,712	102,964	325,357	411,855
Net Gain/(Loss)	(162,709)	(102,914)	(325,353)	(411,655)
Consolidated Cost Centers				
Revenue	**5,554,179**	**4,422,290**	**17,705,867**	**17,689,155**
Expenses	**4,736,182**	**4,593,056**	**15,202,801**	**18,372,223**
Net Gain/(Loss)	**817,997**	**(170,766)**	**2,503,066**	**(683,068)**

As of June 30, 2021, the District had $20.790 million in liquid investments. The District also had $16.805 million of 2019 Revenue Certificates of Participation Project Funds.

The District owed $17.270 million for the 2019 Revenue Certificates of Participation, $25.015 million for the 2015 Senior Revenue Refunding Bonds Series A as well as $2.461 million to Holman Capital Corporation for the conversion of the Rabobank N.A. construction loan for the BLM building, and $3.491 million to BVAA Compass Bank Line of Credit for the Regional Urban Water Augmentation Project as of June 30, 2021.

Environmental Review Compliance: None required.

Financial Impact: _____Yes ___X___No Funding Source/Recap: None

Other Considerations: None

Material Included for Information/Consideration: Quarterly Financial Statements, Investments, and Debt Summary Statements.

Action Required: _____Resolution _____Motion ___X___Review

Board Action

Motion By_____ Seconded By_____No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

MARINA COAST WATER DISTRICT
INCOME STATEMENT
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

CONSOLIDATED

	CURRENT QUARTER				YEAR-TO-DATE			
	2020/2021	2019/2020	$ VARIANCE	% VARIANCE	2020/2021	2019/2020	$ VARIANCE	% VARIANCE
REVENUES								
WATER SALES	3,934,575	3,051,979	882,596	28.92%	12,366,437	11,652,404	714,033	6.13%
SEWER SALES	1,398,418	1,153,926	244,492	21.19%	4,633,032	4,484,940	148,092	3.30%
INTEREST INCOME	15,657	68,916	(53,259)	(77.28%)	107,313	359,505	(252,192)	(70.15%)
OTHER REVENUE	205,529	164,980	40,549	24.58%	599,085	822,682	(223,597)	(27.18%)
TOTAL REVENUES	5,554,179	4,439,801	1,114,378	25.10%	17,705,867	17,319,531	386,336	2.23%
EXPENSES								
ADMINISTRATIVE	1,807,981	3,927,123	(2,119,142)	(53.96%)	6,708,497	8,243,137	(1,534,640)	(18.62%)
OPERATING & MAINTENANCE	1,211,071	915,001	296,070	32.36%	4,083,157	3,698,491	384,666	10.40%
LABORATORY	27,027	2,859	24,168	845.33%	87,294	255,418	(168,124)	(65.82%)
CONSERVATION	110,525	78,392	32,133	40.99%	286,123	326,074	(39,951)	(12.25%)
ENGINEERING	287,690	356,958	(69,268)	(19.41%)	1,021,170	1,151,857	(130,687)	(11.35%)
WATER RESOURCES	291,419	344,677	(53,258)	(15.45%)	1,019,506	948,216	71,290	7.52%
INTEREST EXPENSE	961,928	1,000,022	(38,094)	(3.81%)	1,843,042	1,753,074	89,968	5.13%
FRANCHISE FEE	38,541	176,096	(137,555)	(78.11%)	154,012	696,026	(542,014)	(77.87%)
TOTAL EXPENSES	4,736,182	6,801,128	(2,064,946)	(30.36%)	15,202,801	17,072,293	(1,869,492)	(10.95%)
NET GAIN (LOSS) FROM OPERATIONS	817,997	(2,361,327)	3,179,324	(134.64%)	2,503,066	247,238	2,255,828	912.41%
CAPACITY FEE/ CAPITAL SURCHARGE	146,109	735,237	(589,128)	(80.13%)	1,209,529	3,296,628	(2,087,099)	(63.31%)
CONTRIBUTIONS/ GRANT REVENUE	4,099,688	5,309,681	(1,209,993)	(22.79%)	4,099,688	6,188,854	(2,089,166)	(33.76%)
NON-OPERATING REVENUE	79,790	124,514	(44,724)	(35.92%)	314,650	497,152	(182,502)	(36.71%)
CAPITAL IMPROVEMENT PROJECT	5,527,131	(27,951,501)	33,478,632	(119.77%)	11,100,306	(18,962,336)	30,062,642	(158.54%)
DEVELOPER REVENUE	157,317	102,220	55,097	53.90%	386,136	382,614	3,522	0.92%
DEVELOPER EXPENSES	122,245	93,821	28,424	30.30%	315,159	373,763	(58,604)	(15.68%)
RDP CLOSEOUT	0	24,019,800	(24,019,800)	(100.00%)	0	24,019,800	(24,019,800)	(100.00%)

MARINA COAST WATER DISTRICT
STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

CONSOLIDATED

	MW FUND		MS FUND		OW FUND		OS FUND		RW FUND		CONSOLIDATED		CONSOLIDATED (YTD)	
	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET
REVENUES														
WATER SALES	1,385,280	1,095,889	0	0	2,549,295	2,022,894	0	0	0	0	3,934,575	3,118,783	12,366,437	12,475,131
SEWER SALES	0	0	464,416	371,965	0	0	934,002	774,943	0	0	1,398,418	1,146,908	4,633,032	4,587,631
INTEREST INCOME	3,078	12,519	716	5,010	8,655	20,100	3,205	3,784	3	50	15,657	41,463	107,313	165,850
OTHER REVENUE	22,299	15,480	4,292	1,370	163,644	93,756	15,294	4,530	0	0	205,529	115,136	599,085	460,543
TOTAL REVENUES	1,410,657	1,123,888	469,424	378,345	2,721,594	2,136,750	952,501	783,257	3	50	5,554,179	4,422,290	17,705,867	17,689,155
EXPENSES														
ADMINISTRATIVE	442,242	444,481	83,324	65,141	1,066,962	987,114	194,087	153,619	21,366	300	1,807,981	1,650,655	6,708,497	6,602,621
OPERATING & MAINTENANCE	318,710	276,097	117,698	120,148	574,123	514,896	200,540	228,652	0	0	1,211,071	1,139,793	4,083,157	4,559,173
LABORATORY	7,860	26,483	0	0	19,167	64,835	0	0	0	0	27,027	91,318	87,294	365,273
CONSERVATION	22,204	43,998	0	0	88,321	72,043	0	0	0	0	110,525	116,041	286,123	464,164
ENGINEERING	69,713	83,670	17,043	21,098	160,885	249,228	40,049	46,477	0	0	287,690	400,473	1,021,170	1,601,890
WATER RESOURCES	116,297	176,090	0	0	175,122	412,760	0	0	0	0	291,419	588,850	1,019,506	2,355,399
INTEREST EXPENSE	151,647	81,367	66,482	36,777	387,231	229,352	215,222	122,016	141,346	102,664	961,928	572,176	1,843,042	2,288,703
FRANCHISE FEE	0	0	0	0	27,702	28,750	10,839	5,000	0	0	38,541	33,750	154,012	135,000
TOTAL EXPENSES	1,128,673	1,132,186	284,547	243,164	2,499,513	2,558,978	660,737	555,764	162,712	102,964	4,736,182	4,593,056	15,202,801	18,372,223
NET GAIN (LOSS) FROM OPERATIONS	281,984	(8,298)	184,877	135,181	222,081	(422,228)	291,764	227,493	(162,709)	(102,914)	817,997	(170,766)	2,503,066	(683,068)
CAPACITY FEE/ CAPITAL SURCHARGE	8,512	22,630	6,765	12,233	120,541	599,948	10,291	221,753	0	0	146,109	856,564	1,209,529	3,426,253
CONTRIBUTIONS/ GRANT REVENUE	288,442	82,813	0	0	1,352,196	124,220	852,773	0	1,606,277	0	4,099,688	207,033	4,099,688	828,132
NON-OPERATING REVENUE	22,341	23,603	6,383	6,744	39,895	42,148	11,171	11,802	0	0	79,790	84,297	314,650	337,186
CAPITAL IMPROVEMENT PROJECT	56,047	0	35,856	0	1,904,228	0	1,087,222	0	2,443,778	0	5,527,131	0	11,100,306	0
DEVELOPER REVENUE	8,505	7,500	4,443	1,000	59,476	50,000	84,893	25,000	0	0	157,317	83,500	386,136	334,000
DEVELOPER EXPENSES	2,715	10,000	456	2,500	47,616	87,500	71,458	26,250	0	0	122,245	126,250	315,159	505,000

MARINA COAST WATER DISTRICT
INCOME STATEMENT
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

MARINA WATER FUND

	CURRENT QUARTER				YEAR-TO-DATE			
	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE
REVENUES								
WATER SALES	1,385,280	1,095,889	289,391	26.41%	4,174,833	4,383,556	(208,723)	(4.76%)
SEWER SALES	0	0	0	0.00%	0	0	0	0.00%
INTEREST INCOME	3,078	12,519	(9,441)	(75.41%)	20,996	50,075	(29,079)	(58.07%)
OTHER REVENUE	22,299	15,480	6,819	44.05%	81,902	61,920	19,982	32.27%
TOTAL REVENUES	1,410,657	1,123,888	286,769	25.52%	4,277,731	4,495,551	(217,820)	(4.85%)
EXPENSES								
ADMINISTRATIVE	442,242	444,481	(2,239)	(0.50%)	1,675,562	1,777,922	(102,360)	(5.76%)
OPERATING & MAINTENANCE	318,710	276,097	42,613	15.43%	1,025,705	1,104,388	(78,683)	(7.12%)
LABORATORY	7,860	26,483	(18,623)	(70.32%)	26,821	105,932	(79,111)	(74.68%)
CONSERVATION	22,204	43,998	(21,794)	(49.53%)	87,846	175,991	(88,145)	(50.08%)
ENGINEERING	69,713	83,670	(13,957)	(16.68%)	246,053	334,679	(88,626)	(26.48%)
WATER RESOURCES	116,297	176,090	(59,793)	(33.96%)	407,234	704,359	(297,125)	(42.18%)
INTEREST EXPENSE	151,647	81,367	70,280	86.37%	284,764	325,468	(40,704)	(12.51%)
FRANCHISE/MEMBERSHIP FEES	0	0	0	0.00%	0	0	0	0.00%
TOTAL EXPENSES	1,128,673	1,132,186	(3,513)	(0.31%)	3,753,985	4,528,739	(774,754)	(17.11%)
NET GAIN (LOSS) FROM OPERATIONS	281,984	(8,298)	290,282	(3498.22%)	523,746	(33,188)	556,934	(1678.12%)
CAPACITY FEE/ CAPITAL SURCHARGE	8,512	22,630	(14,118)	(62.39%)	104,288	90,520	13,768	15.21%
CONTRIBUTIONS/ GRANT REVENUE	288,442	82,813	205,629	248.31%	288,442	331,253	(42,811)	(12.92%)
NON-OPERATING REVENUE	22,341	23,603	(1,262)	(5.35%)	88,102	94,412	(6,310)	(6.68%)
CAPITAL IMPROVEMENT PROJECT	56,047	0	56,047	100.00%	277,675	0	277,675	100.00%
DEVELOPER REVENUE	8,505	7,500	1,005	13.40%	34,774	30,000	4,774	15.91%
DEVELOPER EXPENSES	2,715	10,000	(7,285)	(72.85%)	20,977	40,000	(19,023)	(47.56%)

MARINA COAST WATER DISTRICT
INCOME STATEMENT
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

MARINA SEWER FUND

	CURRENT QUARTER				YEAR-TO-DATE			
	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE
REVENUES								
WATER SALES	0	0	0	0.00%	0	0	0	0.00%
SEWER SALES	464,416	371,965	92,451	24.85%	1,445,422	1,487,859	(42,437)	(2.85%)
INTEREST INCOME	716	5,010	(4,294)	(85.71%)	4,863	20,040	(15,177)	(75.73%)
OTHER REVENUE	4,292	1,370	2,922	213.28%	9,671	5,480	4,191	76.48%
TOTAL REVENUES	469,424	378,345	91,079	24.07%	1,459,956	1,513,379	(53,423)	(3.53%)
EXPENSES								
ADMINISTRATIVE	83,324	65,141	18,183	27.91%	248,188	260,565	(12,377)	(4.75%)
OPERATING & MAINTENANCE	117,698	120,148	(2,450)	(2.04%)	384,761	480,593	(95,832)	(19.94%)
LABORATORY	0	0	0	0.00%	0	0	0	0.00%
CONSERVATION	0	0	0	0.00%	0	0	0	0.00%
ENGINEERING	17,043	21,098	(4,055)	(19.22%)	62,395	84,391	(21,996)	(26.06%)
WATER RESOURCES	0	0	0	0.00%	0	0	0	0.00%
INTEREST EXPENSE	66,482	36,777	29,705	80.77%	125,667	147,109	(21,442)	(14.58%)
FRANCHISE/MEMBERSHIP FEES	0	0	0	0.00%	0	0	0	0.00%
TOTAL EXPENSES	284,547	243,164	41,383	17.02%	821,011	972,658	(151,647)	(15.59%)
NET GAIN (LOSS) FROM OPERATIONS	184,877	135,181	49,696	36.76%	638,945	540,721	98,224	18.17%
CAPACITY FEE/ CAPITAL SURCHARGE	6,765	12,233	(5,468)	(44.70%)	49,536	48,933	603	1.23%
CONTRIBUTIONS/ GRANT REVENUE	0	0	0	0.00%	0	0	0	0.00%
NON-OPERATING REVENUE	6,383	6,744	(361)	(5.35%)	25,172	26,975	(1,803)	(6.68%)
CAPITAL IMPROVEMENT PROJECT	35,856	0	35,856	100.00%	68,155	0	68,155	100.00%
DEVELOPER REVENUE	4,443	1,000	3,443	344.30%	5,234	4,000	1,234	30.85%
DEVELOPER EXPENSES	456	2,500	(2,044)	(81.76%)	1,908	10,000	(8,092)	(80.92%)

MARINA COAST WATER DISTRICT
INCOME STATEMENT
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

ORD COMMUNITY WATER FUND

	CURRENT QUARTER				YEAR-TO-DATE			
	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE
REVENUES								
WATER SALES	2,549,295	2,022,894	526,401	26.02%	8,191,604	8,091,575	100,029	1.24%
SEWER SALES	0	0	0	0.00%	0	0	0	0.00%
INTEREST INCOME	8,655	20,100	(11,445)	(56.94%)	58,364	80,400	(22,036)	(27.41%)
OTHER REVENUE	163,644	93,756	69,888	74.54%	485,723	375,023	110,700	29.52%
TOTAL REVENUES	2,721,594	2,136,750	584,844	27.37%	8,735,691	8,546,998	188,693	2.21%
EXPENSES								
ADMINISTRATIVE	1,066,962	987,114	79,848	8.09%	4,170,159	3,948,457	221,702	5.61%
OPERATING & MAINTENANCE	574,123	514,896	59,227	11.50%	1,921,806	2,059,583	(137,777)	(6.69%)
LABORATORY	19,167	64,835	(45,668)	(70.44%)	60,473	259,341	(198,868)	(76.68%)
CONSERVATION	88,321	72,043	16,278	22.59%	198,277	288,173	(89,896)	(31.20%)
ENGINEERING	160,885	249,228	(88,343)	(35.45%)	570,720	996,913	(426,193)	(42.75%)
WATER RESOURCES	175,122	412,760	(237,638)	(57.57%)	612,272	1,651,040	(1,038,768)	(62.92%)
INTEREST EXPENSE	387,231	229,352	157,879	68.84%	742,369	917,408	(175,039)	(19.08%)
FRANCHISE/MEMBERSHIP FEES	27,702	28,750	(1,048)	(3.65%)	112,794	115,000	(2,206)	(1.92%)
TOTAL EXPENSES	2,499,513	2,558,978	(59,465)	(2.32%)	8,388,870	10,235,915	(1,847,045)	(18.04%)
NET GAIN (LOSS) FROM OPERATIONS	222,081	(422,228)	644,309	(152.60%)	346,821	(1,688,917)	2,035,738	(120.54%)
CAPACITY FEE/ CAPITAL SURCHARGE	120,541	599,948	(479,407)	(79.91%)	728,867	2,399,790	(1,670,923)	(69.63%)
CONTRIBUTIONS/ GRANT REVENUE	1,352,196	124,220	1,227,976	988.55%	1,352,196	496,879	855,317	172.14%
NON-OPERATING REVENUE	39,895	42,148	(2,253)	(5.35%)	157,325	168,593	(11,268)	(6.68%)
CAPITAL IMPROVEMENT PROJECT	1,904,228	0	1,904,228	100.00%	2,239,916	0	2,239,916	100.00%
DEVELOPER REVENUE	59,476	50,000	9,476	18.95%	170,196	200,000	(29,804)	(14.90%)
DEVELOPER EXPENSES	47,616	87,500	(39,884)	(45.58%)	160,053	350,000	(189,947)	(54.27%)

MARINA COAST WATER DISTRICT
INCOME STATEMENT
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

ORD COMMUNITY SEWER FUND

	CURRENT QUARTER				YEAR-TO-DATE			
	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE
REVENUES								
WATER SALES	0	0	0	0.00%	0	0	0	0.00%
SEWER SALES	934,002	774,943	159,059	20.53%	3,187,610	3,099,772	87,838	2.83%
INTEREST INCOME	3,205	3,784	(579)	(15.30%)	23,086	15,135	7,951	52.53%
OTHER REVENUE	15,294	4,530	10,764	237.62%	21,789	18,120	3,669	20.25%
TOTAL REVENUES	952,501	783,257	169,244	21.61%	3,232,485	3,133,027	99,458	3.17%
EXPENSES								
ADMINISTRATIVE	194,087	153,619	40,468	26.34%	570,629	614,477	(43,848)	(7.14%)
OPERATING & MAINTENANCE	200,540	228,652	(28,112)	(12.29%)	750,885	914,609	(163,724)	(17.90%)
LABORATORY	0	0	0	0.00%	0	0	0	0.00%
CONSERVATION	0	0	0	0.00%	0	0	0	0.00%
ENGINEERING	40,049	46,477	(6,428)	(13.83%)	142,002	185,907	(43,905)	(23.62%)
WATER RESOURCES	0	0	0	0.00%	0	0	0	0.00%
INTEREST EXPENSE	215,222	122,016	93,206	76.39%	408,844	488,063	(79,219)	(16.23%)
FRANCHISE/MEMBERSHIP FEES	10,839	5,000	5,839	116.78%	41,218	20,000	21,218	106.09%
TOTAL EXPENSES	660,737	555,764	104,973	18.89%	1,913,578	2,223,056	(309,478)	(13.92%)
NET GAIN (LOSS) FROM OPERATIONS	291,764	227,493	64,271	28.25%	1,318,907	909,971	408,936	44.94%
CAPACITY FEE/ CAPITAL SURCHARGE	10,291	221,753	(211,462)	(95.36%)	326,838	887,010	(560,172)	(63.15%)
CONTRIBUTIONS/ GRANT REVENUE	852,773	0	852,773	100.00%	852,773	0	852,773	100.00%
NON-OPERATING REVENUE	11,171	11,802	(631)	(5.35%)	44,051	47,206	(3,155)	(6.68%)
CAPITAL IMPROVEMENT PROJECT	1,087,222	0	1,087,222	100.00%	2,418,741	0	2,418,741	100.00%
DEVELOPER REVENUE	84,893	25,000	59,893	239.57%	175,932	100,000	75,932	75.93%
DEVELOPER EXPENSES	71,458	26,250	45,208	172.22%	132,221	105,000	27,221	25.92%

MARINA COAST WATER DISTRICT
INCOME STATEMENT
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

RECYCLED WATER FUND

	CURRENT QUARTER				YEAR-TO-DATE			
	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE	ACTUAL	BUDGET	$ VARIANCE	% VARIANCE
REVENUES								
WATER SALES	0	0	0	0.00%	0	0	0	0.00%
SEWER SALES	0	0	0	0.00%	0	0	0	0.00%
INTEREST INCOME	3	50	(47)	(94.00%)	4	200	(196)	(98.00%)
OTHER REVENUE	0	0	0	0.00%	0	0	0	0.00%
TOTAL REVENUES	3	50	(47)	(94.00%)	4	200	(196)	(98.00%)
EXPENSES								
ADMINISTRATIVE	21,366	300	21,066	7022.00%	43,959	1,200	42,759	3563.25%
OPERATING & MAINTENANCE	0	0	0	0.00%	0	0	0	0.00%
LABORATORY	0	0	0	0.00%	0	0	0	0.00%
CONSERVATION	0	0	0	0.00%	0	0	0	0.00%
ENGINEERING	0	0	0	0.00%	0	0	0	0.00%
WATER RESOURCES	0	0	0	0.00%	0	0	0	0.00%
INTEREST EXPENSE	141,346	102,664	38,682	37.68%	281,398	410,655	(129,257)	(31.48%)
FRANCHISE FEE	0	0	0	0.00%	0	0	0	0.00%
TOTAL EXPENSES	162,712	102,964	59,748	58.03%	325,357	411,855	(86,498)	(21.00%)
NET GAIN (LOSS) FROM OPERATIONS	(162,709)	(102,914)	(59,795)	58.10%	(325,353)	(411,655)	86,302	(20.96%)
CAPACITY FEE/ CAPITAL SURCHARGE	0	0	0	0.00%	0	0	0	0.00%
CONTRIBUTIONS/ GRANT REVENUE	1,606,277	0	1,606,277	100.00%	1,606,277	0	1,606,277	100.00%
NON-OPERATING REVENUE	0	0	0	0.00%	0	0	0	0.00%
CAPITAL IMPROVEMENT PROJECT	2,443,778	0	2,443,778	100.00%	6,095,819	0	6,095,819	100.00%
DEVELOPER REVENUE	0	0	0	0.00%	0	0	0	0.00%
DEVELOPER EXPENSES	0	0	0	0.00%	0	0	0	0.00%

MARINA COAST WATER DISTRICT
SCHEDULE OF INVESTMENTS SUMMARY
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

ACCOUNT	ACCT TYPE	YIELD APR	3/31/2021 BALANCE	QUARTERLY ACTIVITIES TRANSACTION TYPE	AMOUNT	6/30/2021 BALANCE
LAIF ACCOUNT		0.33%	16,856,426	INTEREST 04/15/2021	18,479	16,874,905
				TRANSFERS	0	**16,874,905**
SAVINGS ACCOUNT	MM	0.04%	274,968	INTEREST 04/01/21 - 06/30/21	29	274,997
				TRANSFERS	800,000	**1,074,997**
BUILDING REMOVAL FUND	MM	0.03%	977,839	INTEREST 04/01/21 - 06/30/21	73	977,912
				TRANSFERS	0	**977,912**
RESTRICTED FUNDS	MM	0.15%	1,080,181	INTEREST 04/01/21 - 06/30/21	404	1,080,585
				TRANSFERS	0	**1,080,585**
RUWAP LOC PROCEEDS	CK		4,574	DEPOSITS	744,621	749,195
				TRANSFERS	(744,621)	4,574
				FEES	(69)	**4,505**
CHECKING ACCOUNT	CK		3,121,396	QUARTERLY DEPOSITS & CREDITS	8,795,115	11,916,511
				QUARTERLY CHECKS & DEBITS	(11,083,554)	832,957
				TRANSFERS	(55,379)	**777,578**

SUMMARY	As of June 30 2020	2021
LAIF ACCOUNT	17,147,945	16,874,905
SAVINGS ACCOUNT	274,836	1,074,997
CPFCA DEPOSIT ACCOUNT	100,547	0
BUILDING REMOVAL FUND	0	977,912
RESTRICTED FUNDS	1,078,709	1,080,585
RUWAP LOC PROCEEDS	4,810	4,505
CHECKING ACCOUNT	1,281,732	777,578
TOTAL INVESTMENT	**19,888,579**	**20,790,482**

RESERVES DETAIL (LAIF ACCOUNT)	As of June 30 2020	2021
MW GEN OP RESERVE	882,848	669,242
MW CAPACITY REVENUE FUND	1,257,415	1,285,391
MW CAP REPL RESERVE FUND	1,162,791	1,371,494
MS GEN OP RESERVE	310,416	234,653
MS CAPACITY REVENUE FUND	186,319	165,773
MS CAP REPL RESERVE FUND	200,231	301,719
OW GEN OP RESERVE	1,769,528	1,462,174
OW CAPITAL/CAPACITY REVENUE FUND	7,623,356	7,795,699
OW CAP REPL RESERVE FUND	165,056	366,304
OS GEN OP RESERVE	758,906	1,204,555
OS CAPITAL/CAPACITY REVENUE FUND	2,769,237	1,855,517
OS CAP REPL RESERVE FUND	61,842	162,384
TOTAL	**17,147,945**	**16,874,905**

MARINA COAST WATER DISTRICT
SCHEDULE OF INVESTMENTS SUMMARY - BOND PROCEEDS
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

ACCOUNT	ACCT TYPE	YIELD APR	3/31/2021 BALANCE	QUARTERLY ACTIVITIES TRANSACTION TYPE	AMOUNT	6/30/2021 BALANCE
PROJECT FUND	MM	0.03%	16,803,763	INTEREST 04/01/21 - 06/30/21	1,354	16,805,117
2019 SERIES BOND				TRANSFERS	0	**16,805,117**

MARINA COAST WATER DISTRICT
SCHEDULE OF DEBT SUMMARY
APRIL 1, 2021 TO JUNE 30, 2021
(UNAUDITED)

PRINCIPAL AMOUNT	FIRST PAYMENT	FINAL PAYMENT	RATE	3/31/2021 BALANCE	QUARTERLY ACTIVITIES TRANSACTION TYPE	AMOUNT	6/30/2021 BALANCE
HCC - BLM INSTALLMENT LOAN							
2,799,880	07/20/2017	01/20/2037	5.750%	2,461,718	PAYMENT - PRINCIPAL	0	**2,461,718**
					INTEREST PAYMENT	(79,926)	
2015 SERIES A REFUNDING BOND - CLOSING DATE 07/15/2015							
29,840,000	12/01/2015	06/01/2037	3.712%	26,050,000	PAYMENT - PRINCIPAL	(1,035,000)	**25,015,000**
					INTEREST PAYMENT	(607,175)	
2019 SERIES REVENUE BOND - CLOSING DATE 12/19/2019							
17,725,000	06/01/2020	06/01/2049	2.990%	17,585,000	PAYMENT - PRINCIPAL	(315,000)	**17,270,000**
					INTEREST PAYMENT	(346,150)	
BVAA COMPASS RUWAP LOC							
		03/31/2022	2.040% *	2,746,211	ADVANCES	744,620	3,490,831
					PAYMENT - PRINCIPAL	(2,461,210)	**1,029,621**
					INTEREST PAYMENT	(14,807)	

*Line of Credit interest calculated on a variable basis (79.01% of the 30-Day Monthly LIBOR plus 1.25%). Amount represents interest rate at 06/01/2021.

SUMMARY

HCC - BLM INSTALLMENT LOAN	2,461,718
2015 REFUNDING BOND SERIES A	25,015,000
2019 SERIES REVENUE BOND	17,270,000
BVAA COMPASS RUWAP LOC	1,029,621
TOTAL DEBT	**45,776,339**

Return to Agenda

Marina Coast Water District
Agenda Transmittal

Agenda Item: 10-C Meeting Date: December 13, 2021

Prepared By: Paula Riso Approved By: Remleh Scherzinger

Agenda Title: Approve the Revised Draft Minutes of the Regular Joint Board/GSA Meeting of October 18, 2021

Staff Recommendation: The Board of Directors approve the revised draft minutes of the October 18, 2021 regular joint Board meeting.

Background: *Strategic Plan, Mission Statement – We Provide high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management and the development of water resources in an environmentally sensitive manner.*

Discussion/Analysis: At the November 15, 2021 Board meeting, the Board requested the public comment letter be placed under correspondence instead of Oral Communications. The revised draft minutes of October 18, 2021 are provided for the Board to consider approval.

Environmental Review Compliance: None required.

Financial Impact: _____Yes ___X___No Funding Source/Recap: None

Other Considerations: The Board can suggest changes/corrections to the minutes.

Material Included for Information/Consideration: Revised draft minutes of October 18, 2021.

Action Required: _____Resolution ___X___Motion _____Review

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

Marina Coast Water District

Regular Board Meeting/Groundwater Sustainability Agency Board Meeting
Via Zoom Teleconference
October 18, 2021

Draft Minutes

1. Call to Order:

President Shriner called the meeting to order at 6:32 p.m. on October 18, 2021 via Zoom teleconference in Marina, California. She then proceeded with a land acknowledgement. "As Marina Coast Water District celebrates its 60th year providing publicly owned water service to its customers in Marina and the Ord Community, we acknowledge that our service are is located on the traditional lands of the Esselen people. They are known today as the Ohlone/Constanoan-Esselen Nation. We respect their elders, past, present, and emerging, for they hold the memories, traditions, culture, and hopes of the Esselen people. We also acknowledge the government of the Ohlone/Coastanoan Esselen Nation and appreciate the spiritual role it plays today in preserving the cultural, historical and heritage beliefs of the Esselen people. We are grateful that they share their traditional lands with us."

2. Roll Call:

Board Members Present:

Jan Shriner– President
Thomas P. Moore – Vice President
Herbert Cortez
Gail Morton
Matt Zefferman

Board Members Absent:

None

Staff Members Present:

Remleh Scherzinger, General Manager
Roger Masuda, District Counsel
Kelly Cadiente, Director of Administrative Services
Derek Cray, Operations and Maintenance Manager
Jigar Shaw, District Engineer
Patrick Breen, Water Resources Manager
Teo Espero, IT Administrator
Paula Riso, Executive Assistant/Clerk to the Board

Agenda Item 2 (continued):

Audience Members:

Yuri Anderson, Supervisor Root-Askew Staff
Vera Nelson, EKI Water & Environment
Peter Le, Marina Resident
Andy Sterbenz, Schaaf & Wheeler
Sarah Babcock, MCWD
Rene Magdaleno, MCWD
Don Wilcox, MCWD
Joe Pineda, MCWD

3. Public Comment on Closed Session Items:

There were no comments made.

The Board entered into closed session at 6:35 p.m. to discuss the following items:

4. Closed Session:

1) California-American Water Company v. All Persons Interested…, Complaint for Reverse Validation, Monterey County Superior Court Case No. 20CV002436, and Marina Coast Water District's consideration of joining that case

2) City of Marina v. RMC Lonestar [CEMEX], California-American Water Company, Marina Coast WD, et al Defendants, Monterey County Superior Court Case No. 20CV001387 (Complaint for Breach of Contract, Declaratory Relief under the Agency Act, and Tortious Interference with Existing Contract)

The Board ended closed session at 7:02 p.m. President Shriner reconvened the meeting to open session at 7:03 p.m.

5. Reportable Actions Taken During Closed Session:

Mr. Roger Masuda, District Counsel, stated there were no reportable actions taken in Closed Session.

6. Pledge of Allegiance:

Director Zefferman led everyone present in the pledge of allegiance.

7. Oral Communications:

Mr. Peter Le, Marina resident, commented that he had submitted his comments in written format to the Board and General Manager and he asked that the Board review his comments and provide responses.

Agenda Item 7 (continued):

Mr. Le submitted an emailed comment on October 15, 2021 and it will be attached as correspondence, as well as kept on file within the District.

8. Presentation

   A. Adopt Resolution No. 2021-50 in Recognition of Rene Magdaleno, Electrical/Mechanical Technician, for 15 Years of Service to the Marina Coast Water District:

Mr. Derek Cray, Operations and Maintenance Manager, introduced this item thanking Mr. Magdaleno for his hard work and years of service to MCWD.

Vice President Moore made a motion to Adopt Resolution No. 2021-50 in Recognition of Rene Magdaleno, Electrical/Mechanical Technician, for 15 Years of Service to the Marina Coast Water District. Director Morton seconded the motion. Ms. Sarah Babcock, MCWD employee, congratulated Mr. Magdaleno on his 15 years with the District, and stated that it was an honor and joy to work with Rene. The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

President Shriner read the narration on the Resolution. Mr. Magdaleno thanked everyone for giving him the opportunity to apply for the new position and noted that he loved his job and plans to retire from the District someday.

9. Marina Coast Water District Groundwater Sustainability Agency Matters:

   A. Presentation:

      1. Receive a Presentation on the Monterey Sub-basin Groundwater Sustainability Plan (Plan):

Mr. Patrick Breen, Water Resources Manager, introduced this item. Ms. Vera Nelson, EKI Water & Environment, gave a brief presentation on the overall Plan. The Board asked clarifying questions and discussion followed.

Ms. Yuri Anderson, Supervisor Root-Askew staff member/Marina resident, commented that she and Supervisor Root-Askew would like to see more public outreach and opportunities for the public to learn more about the Plan. She added that the Board was being asked to join in a joint session with the County Board of Supervisors on December 8th. Ms. Anderson stated that other subbasins were also being invited to attend and share any planned regional projects.

Item 9-A1 (continued):

The Board asked to have more outreach to the community regarding the Plan. Mr. Breen stated that the outreach would be increased.

10. Return to Marina Coast Water District Matters:

11. Consent Calendar:

Vice President Moore made a motion to approve the Consent Calendar consisting of: A) Receive and File the Check Register for the Month of September 2021; B) Approve the Draft Minutes of the Regular Joint Board/GSA Meeting of September 20, 2021; and, C) Adopt Resolution No. 2021-51 to Amend the FY 2021-2022 Budget for the Unbudgeted Emergency Purchase of a Replacement Vertical Hollow Shaft Motor for Well 31 by Utilizing Ord Water Capital Replacement and Improvement Reserve Funds. Director Zefferman seconded the motion. The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

12. Action Item:

A. Adopt Resolution No. 2021-52 to Proclaim a Local Emergency, Ratifying the State of Emergency Proclaimed on March 4, 2020, and Authorizing Remote Teleconference Meetings of All District Legislative Bodies for the Following 30 Days:

Ms. Paula Riso, Executive Assistant/Clerk to the Board, introduced this item.
Director Morton made the finding that the state of emergency exists in the County of Monterey; that there is substantial risk to the Board, staff and members of the public to attend these meetings; and, made a motion to adopt Resolution No. 2021-52 proclaiming a local emergency, ratifying the State of Emergency proclaimed on March 4, 2020, and authorizing remote teleconference meetings of all District legislative bodies for the following 30 days. Vice President Moore seconded the motion. The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

13. Staff Reports:

A. Receive an Update on the Fiscal Impacts to the District due to Covid-19:

Item 13-A (continued):

Ms. Kelly Cadiente, Director of Administrative Services, introduced this item and noted that the District was in line to receive funds from the State arrearages program to help towards delinquent accounts. The Board asked clarifying questions.

B. Receive a Report on Current Capital Improvement Projects:

Mr. Jigar Shah, District Engineer, introduced this item.

C. Receive the 3rd Quarter 2021 MCWD Water Consumption Report:

Ms. Cadiente reviewed this item. Vice President Moore suggested putting the Central Marina water allocation number of 3,020 acre feet in the chart. Director Morton suggested a separate graph for Central Marina. President Shriner asked that it be brought to the Executive Committee for review first.

D. Receive the 3rd Quarter 2021 Sewer Flow Report:

Ms. Cadiente reviewed this item. Vice President Moore asked for the numbers to be in acre feet as measure.

E. Receive 3rd Quarter Report on Pure Water Monterey and MCWD Recycled Water Flows through September 30, 2021:

Mr. Breen introduced this item. The Board asked clarifying questions.

F. Receive a Report on Potable Water Production through August 31, 2021:

Mr. Breen introduced this item. Director Zefferman noted the graph was difficult to read with the thin lines and asked that the graph be revised so it's easier to read. Director Morton asked for a footnote showing the population in 2013.

14. Informational Items:

A. General Manager's Report:

Mr. Scherzinger gave the following updates:

1) MCWD received their 13th Government Finance Officers Association Award;
2) BHI Consulting has been awarded a contract and will begin working with the District on the Strategic Plan;
3) the generator project completed by Mr. Cray was successful as the District remained 100% in power during the last PG&E power outage. Two water booster stations, 1 chlorination station, and three sewer lift stations were affected during the 3-hour outage;

Item 14-A (continued):

4) the arrearages grant for $134,000 will help those District customers who have been struggling during Covid;
5) Mr. Shah has reached out to the Bureau of Reclamation for a WaterSmart grant to change out District meters and upgrade them to Advanced Metering Infrastructure meters (smart meters); and,
6) thanks to President Shriner for writing individual thank you cards to all the District employees for Water Professional Week and the District provided pizza for the employees, thanking them as well.

B. Counsel's Report:

There was no report.

C. Committee and Board Liaison Reports:

1. Water Conservation Commission:

Mr. Breen stated no meeting was held.

2. Joint City District Committee:

Director Morton stated they met and gave a brief update noting that there were questions on fire flow. Mr. Scherzinger suggested forwarding that to the Executive Committee to discuss scheduling a fire flow workshop. Director Zefferman noted he has been giving updates on Eleanor Ostrom's work.

3. Executive Committee:

Vice President Moore stated they met on October 5th and the next meeting is November 2nd.

4. Community Outreach Committee:

President Shriner and Director Zefferman gave a brief update.

5. Budget and Personnel Committee:

No meeting was held.

6. M1W Board Member:

Vice President Moore gave a brief update.

7. LAFCO Liaison:

Director Cortez stated the next meeting is scheduled for October 25th.

8. JPIA Liaison:

Director Morton stated there was nothing to report.

9. Special Districts Association Liaison:

Vice President Moore stated the next meeting is scheduled for October 19th.

10. MCWD/SVBGSA Steering Committee:

Mr. Breen said the meeting was canceled.

15. Correspondence:

President Shriner noted there was a thank you note for the General Manager.

16. Board Member Requests for Future Agenda Items:

No additional requests were made.

17. Director's Comments:

Director Cortez, Director Zefferman, Director Morton, Vice President Moore, and President Shriner made comments.

18. Adjournment:

The meeting was adjourned at 9:58 p.m.

APPROVED:

_____
Jan Shriner, President

ATTEST:

_____
Paula Riso, Deputy Secretary

Return to Agenda

Marina Coast Water District
Agenda Transmittal

Agenda Item: 10-D Meeting Date: December 13, 2021

Prepared By: Paula Riso Approved By: Remleh Scherzinger

Agenda Title: Approve the Draft Minutes of the Regular Joint Board/GSA Meeting of November 15, 2021

Staff Recommendation: The Board of Directors approve the draft minutes of the November 15, 2021 regular joint Board meeting.

Background: *Strategic Plan, Mission Statement – We Provide high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management and the development of water resources in an environmentally sensitive manner.*

Discussion/Analysis: The draft minutes of November 15, 2021 are provided for the Board to consider approval.

Environmental Review Compliance: None required.

Financial Impact: _____Yes ___X___No Funding Source/Recap: None

Other Considerations: The Board can suggest changes/corrections to the minutes.

Material Included for Information/Consideration: Draft minutes of November 15, 2021.

Action Required: _____Resolution ___X___Motion _____Review

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

Marina Coast Water District

Regular Board Meeting/Groundwater Sustainability Agency Board Meeting
Via Zoom Teleconference
November 15, 2021

Draft Minutes

1. Call to Order:

President Shriner called the meeting to order at 6:30 p.m. on November 15, 2021 via Zoom teleconference in Marina, California. She then proceeded with a land acknowledgement. "As Marina Coast Water District celebrates its 60th year providing publicly owned water service to its customers in Marina and the Ord Community, we acknowledge that our service are is located on the traditional lands of the Esselen people. They are known today as the Ohlone/Constanoan-Esselen Nation. We respect their elders, past, present, and emerging, for they hold the memories, traditions, culture, and hopes of the Esselen people. We also acknowledge the government of the Ohlone/Coastanoan Esselen Nation and appreciate the spiritual role it plays today in preserving the cultural, historical and heritage beliefs of the Esselen people. We are grateful that they share their traditional lands with us."

2. Roll Call:

Board Members Present:

Jan Shriner– President
Thomas P. Moore – Vice President
Herbert Cortez
Gail Morton
Matt Zefferman

Board Members Absent:

None

Staff Members Present:

Remleh Scherzinger, General Manager
Roger Masuda, District Counsel
Kelly Cadiente, Director of Administrative Services
Derek Cray, Operations and Maintenance Manager
Patrick Breen, Water Resources Manager
Rose Gill, Human Resources/Risk Administrator
Brian True, Senior Engineer
Teo Espero, IT Administrator
Paula Riso, Executive Assistant/Clerk to the Board

Agenda Item 2 (continued):

Audience Members:

Andy Sterbenz, Schaaf & Wheeler
Skylar Wolfe, Public Member
Red G, CSUMB Student
Peter Le, Marina Resident
Hunter Isbell, Public Member

3. Public Comment on Closed Session Items:

There were no comments made.

The Board entered into closed session at 6:32 p.m. to discuss the following items:

4. Closed Session:

A. Pursuant to Government Code 54956.9
Conference with Legal Counsel – Existing Litigation

1) Bay View Community DE, LLC; Bryan Taylor; Greg Carter; and Brooke Bilyeu vs Marina Coast Water District; Board of Directors of Marina Coast Water District; County of Monterey and Does 1-25, inclusive, Monterey County Superior Court Case No. 18CV000765 (Petition for Writ of Mandate or Administrative Mandate, and Complaint for Declaratory and Injunctive Relief and Breach of Contract)

2) Appeal No. A-3-MRA-19-0034 by California-American Water Company to the California Coastal Commission over Denial by the City of Marina for a Coastal Development Permit for Construction of Slant Intake Wells for the Monterey Peninsula Water Supply Project

The Board ended closed session at 7:38 p.m. President Shriner reconvened the meeting to open session at 7:39 p.m.

5. Reportable Actions Taken During Closed Session:

Mr. Roger Masuda, District Counsel, verified that there were no reportable actions taken in Closed Session.

6. Pledge of Allegiance:

Director Zefferman led everyone present in the pledge of allegiance.

7. Oral Communications:

Mr. Peter Le, Marina resident, commented that he had submitted his comments in written format to the entire Board and General Manager and he asked that the Board review his comments and provide responses.

Agenda Item 7 (continued):

Red G, CSUMB Student, said he had a comment on item 10-C. President Shriner said he could comment on that item when it is discussed later in the agenda.

Ms. Paula Riso, Executive Assistant/Clerk to the Board, noted that Mr. Le provided written comments and they were on file with the District.

8. Presentation

A. Adopt Resolution No. 2021-53 in Recognition of Tamela Hatfield, Accounting Supervisor, for 10 Years of Service to the Marina Coast Water District:

Ms. Kelly Cadiente, Director of Administrative Services, introduced this item thanking Ms. Hatfield for her hard work and years of service to MCWD.

Vice President Moore made a motion to Adopt Resolution No. 2021-53 in Recognition of Tamela Hatfield, Accounting Supervisor, for 10 Years of Service to the Marina Coast Water District. Director Morton seconded the motion. The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

President Shriner read the narration on the Resolution.

9. Consent Calendar:

Director Zefferman requested to pull Item B from the agenda.

Director Morton made a motion to approve the Consent Calendar consisting of: A) Receive and File the Check Register for the Month of October 2021; and, C) Adopt Resolution No. 2021-54 to Proclaim a Local Emergency and Authorize Remote Teleconference Meetings of All District Legislative Bodies for the Following 30 Days. Director Zefferman seconded the motion. The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

B. Approve the Draft Minutes of the Regular Joint Board/GSA Meeting of October 18, 2021:

Director Zefferman stated that Mr. Le had made an oral comment under "Oral Communications" but asked if his email should be included under "Correspondence"? Mr. Remleh Scherzinger, General Manager, commented that due to the executive order, Oral Communications may be submitted as written comment. He then suggested discussing this with legal counsel and bringing it back to the next meeting.

Agenda Item 9-B (continued):

Director Morton made a motion to table this item until the next meeting. Vice President Moore seconded the motion; asked for legal counsel to provide the exact wording of the law that pertains to this; and, agreed that this should be considered correspondence. The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

10. Action Item:

A. Adopt Resolution No. 2021-55 to Designate the General Manager as the Authorized Representative of the Marina Coast Water District for the California Water and Wastewater Arrearages Payment Program:

Ms. Cadiente introduced this item explained that the amounts in the arrearage program is for water only from March 2020 through June 2021. She stated that other costs, such as sewer, meter fees, and irrigation, are not included in the amount. The Board asked clarifying questions.

Vice President Moore made a motion to adopt Resolution No. 2021-55 to designate the General Manager as the authorized representative of the Marina Coast Water District for the California Water and Wastewater Arrearages Payment Program. Director Morton seconded the motion. The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

B. Adopt Resolution No. 2021-56 to Authorize Change Order #1 with Process Measurement Group (dba Toledo Industrial Coatings) for the Intermediate Reservoir Recoating Project – CIP #GW-0311 and Corresponding Budget Adjustments:

Mr. Patrick Breen, Water Resources Manager, introduced this item. The Board asked clarifying questions on water quality and procedures to recoat the tank.

Director Morton made a motion to adopt Resolution No. 2021-56 to Authorize Change Order #1 with Process Management Group (dba Toledo Industrial Coatings) for the Intermediate Reservoir Recoating Project – CIP #GW-0311 and corresponding budget adjustments. Director Zefferman seconded the motion. The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

C. Adopt Resolution No. 2021-57 Approving the Application for the U.S. Bureau of Reclamation WaterSMART Gran Program:

Mr. Scherzinger introduced this item explaining that this is an annual grant and if the District gets in the program this year, it will make it easier to receive grants in this program next year. The Board asked clarifying questions.

Director Morton made a motion to adopt Resolution No. 2021-57 approving the application for the U.S. Bureau of Reclamation WaterSMART Gran Program. Vice President Moore seconded the motion.

Red G, CSUMB student, commented that while ambitious in a long-term investment, improving the meters is one small way to reduce water usage. They also stated they support the forward thinking of the Board members to embrace this opportunity as one of the many ways cities can begin to adopt smarter infrastructure and every action we can take towards sustainable systems should be explored.

The motion was passed by the following vote:

Director Cortez	-	Yes	Vice President Moore	-	Yes
Director Morton	-	Yes	President Shriner	-	Yes
Director Zefferman	-	Yes			

11. Staff Reports:

A. Receive an Update on the Fiscal Impacts to the District due to Covid-19:

Ms. Cadiente introduced this item. The Board asked clarifying questions regarding payments applied to delinquent account and how to notify customers of the process.

12. Informational Items:

A. General Manager's Report:

Mr. Scherzinger gave the following updates:

1) MCWD received a letter from JPIA stating the District did really well with regards to risk assessment, training, liabilities, and worker compensation programs;
2) the Sanitary Survey was received from the Department of Drinking Water and the District received a thumbs up that the system is in good condition and being operated in a safe and appropriate manner;
3) the entirety of the water system is fully automated;
4) the District sent out a Request for Proposals for a Public Relations Firm to 19 agencies and received 9 responses. From those responses, the District received five proposals;
5) the District renewed its membership in the South Monterey Bay Sewer Publication Group;
6) the Strategic Planning process will begin in the next month; and,

Agenda Item 12-A (continued):

7) the District has extended an offer to the City of Marina to co-host a fire workshop in our community to address questions presented to the District in a public forum.

B. Counsel's Report:

There was no report.

C. Committee and Board Liaison Reports:

1. Water Conservation Commission:

Mr. Breen stated no meeting was held.

2. Joint City District Committee:

Director Morton stated they did not meet.

3. Executive Committee:

Vice President Moore stated the next meeting is December 7th. President Shriner gave a brief update.

4. Community Outreach Committee:

Director Cortez gave a brief update.

5. Budget and Personnel Committee:

President Shriner and Director Cortez gave a brief update.

6. M1W Board Member:

Vice President Moore gave a brief update.

7. LAFCO Liaison:

Director Cortez stated there was no update.

8. JPIA Liaison:

Director Morton stated there was nothing to report.

9. Special Districts Association Liaison:

Vice President Moore stated the next meeting is scheduled for January 18th.

10. MCWD/SVBGSA Steering Committee:

Director Morton said the meeting was canceled.

13. Board Member Requests for Future Agenda Items:

President Shriner stated that any requests may be emailed to staff.

14. Director's Comments:

Director Cortez, Director Zefferman, Director Morton, Vice President Moore, and President Shriner made comments.

15. Adjournment:

The meeting was adjourned at 9:28 p.m.

APPROVED:

_____
Jan Shriner, President

ATTEST:

_____
Paula Riso, Deputy Secretary

Return to Agenda

Marina Coast Water District
Agenda Transmittal

Agenda Item: 10-E Meeting Date: December 13, 2021

Prepared By: Paul Lord Approved By: Remleh Scherzinger
Reviewed By: Patrick Breen

Agenda Title: Receive the Validated 2020 Water Loss Audit Report and Level 1 Validation Document

Staff Recommendation: The Board of Directors Receive the Validated 2020 Water Loss Audit Report and Level 1 Validation Document

Background: *Strategic Plan Mission Statement – We provide our customers with high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management and the development of water resources in an environmentally sensitive manner.*

California Senate Bill 555, passed in October 2015, requires all urban retail water suppliers in the state to submit a completed and third party validated water loss audit annually to the California Department of Water Resources.

A water loss audit is an accounting exercise that is conceptually similar to a financial audit. Whereas a financial audit tracks all sources and uses of funds for an organization, a water loss audit tracks all sources and uses of water within a water system over a specified period to estimate the volume and value of water loss. Water loss audits are a valuable tool used to help identify and prioritize a water purveyor's operations that can be improved to maximize the efficiency of water production and delivery. The water loss audit also helps improve the generation of revenue by estimating the financial value of water losses. Having a water loss audit validated by an independent third party assures that the source of the data is reliable, complete, consistent, and accurate.

Staff's efforts to improve data validity and reduce real and apparent losses for the 2020 audit included:

- The flow testing of all production well meters.
    - These tests revealed the need for meter replacement (under-registration).
    - Production well meter testing allowed us to calculate and apply a Master Meter & Supply Error Adjustment to our water production figure.
- Several of our largest, field testable meters over 3" in size were flow tested. Poor performing meters were identified for replacement. Some meters have been replaced.

The 2020 calendar year water audit metrics revealed an unexpected ratio of the Current Annual Real Losses to the expected Unavoidable Annual Real Losses. Basically, the calculated real losses were lower than the modeled technical minimum expected for a distribution system with our characteristics. This is very helpful information, notifying staff that the data collected may be flawed. Either water loss was being maintained at low levels only achieved by the top worldwide performers in leakage control, the model used to estimate our real losses was inappropriate, or the data collected about water production, consumption, and the distribution system attributes was

imprecise. Validator comments about various scenarios that may contribute to this result can be found in the Validation Review Notes.

As summarized in the attached Validation Review Notes, the overall Data Validity Score of 69, falling within Band III (51-70) of five bands and a scale to 100, suggests that the next improvement steps for the District may be focused simultaneously on improving the measurement of water production, testing and replacing inaccurate customer meters, and identifying potential data gaps in metering and billing functions.

Staff has already taken several steps towards improving future data accuracy and validity that will have a profound result on the next water loss audit for 2021. These steps include:

- Installing new high-end electromagnetic flowmeters at each well site.
- Automating the recording of production well meter readings.
- Updating the district's GIS data, to obtain a more accurate measurement of the distribution system mainline length.

If found to be cost effective, the following actions should also be considered because they would lead to some additional improvements in data reliability, data validity grades, and the generation of revenue:

- The replacement of the oldest meters.
- Expanding the accuracy testing of old meters to remain in service.
- The random accuracy testing of small customer meters.
- The installation of distribution system pressure monitoring equipment.
- The completion of a Real Loss Component Analysis to develop a leakage profile.
- The completion of an Apparent Loss Component Analysis to develop an apparent loss profile.
- Implement a Cost-benefit analysis & target setting for water loss components.
- Design and implement a water loss control program for cost-effective interventions.

Environmental Review Compliance: None required.

Financial Impact: _____Yes ___X___No Funding Source/Recap: None

Other Considerations: None.

Material Included for Information/Consideration: Attachment A - 2020 Water Loss Audit Validation Review Document; and, Attachment B - the 2020 Water Loss Audit.

Action Required: _____Resolution ___X___Motion _____Review

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

CAVANAUGH
Stewardship Through Innovation

AWWA 2020 Water Audit Level 1 Validation – Review Document

Validator Provided

Audit Information:

Utility: Marina Coast Water District PWS ID: 2710017

System Type: Potable Audit Period: Calendar 2020

Utility Representation: Paul Lord, Patrick Breen

Validation Date: 7/28/2021 Call Time: 10:00am Sufficient Supporting Documents Provided: Yes

Validation Findings & Confirmation Statement:

Key Audit Metrics:

Data Validity Score: 69 Data Validity Band (Level): Band III (51-70)

ILI: 0.72 Real Loss: 441.37 (gal/mile-main/day) Apparent Loss: 7.48 (gal/conn/day)

Non-revenue water as percent of cost of operating system: 1.1%

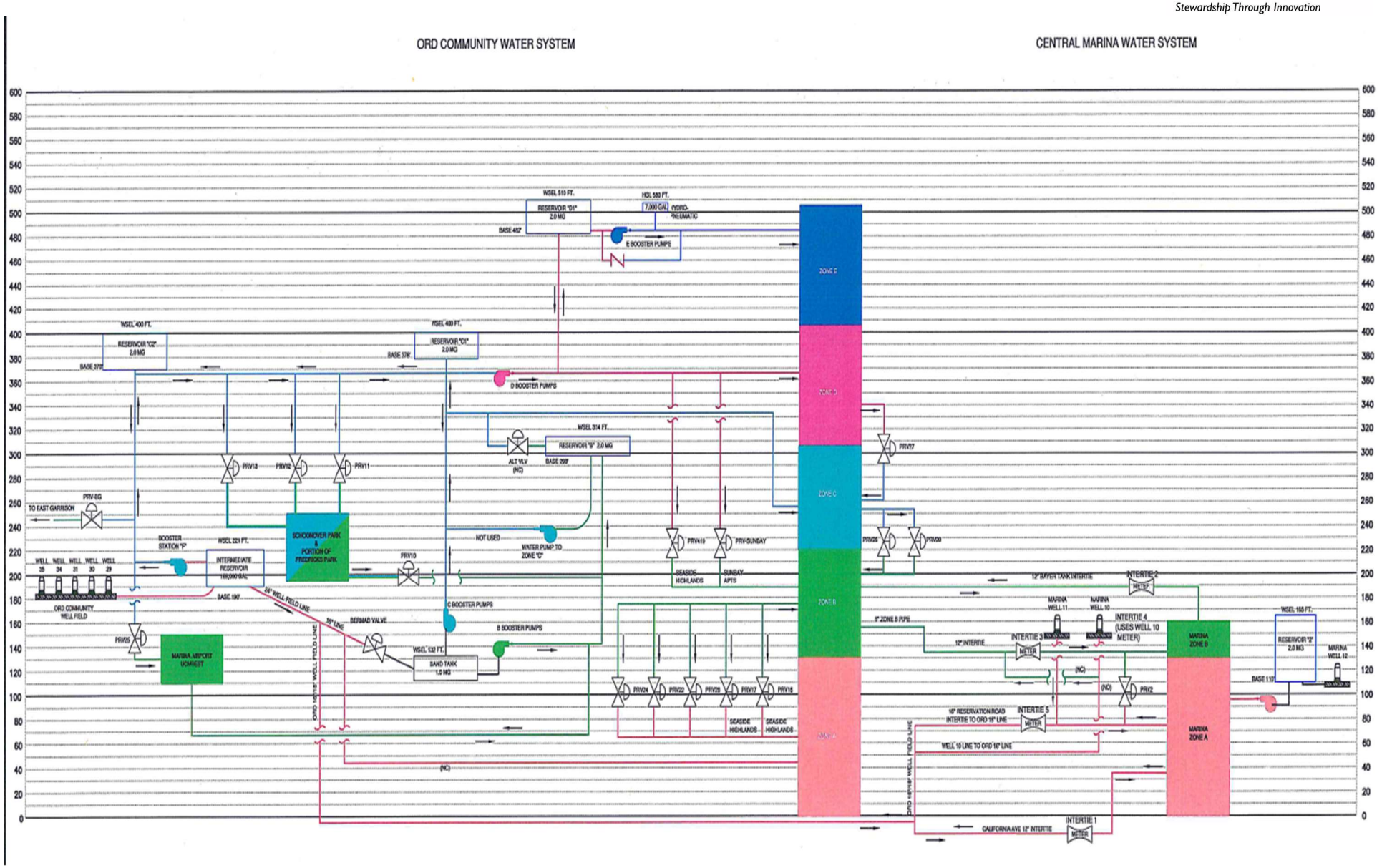
Certification Statement by Validator:

This water loss audit report has been Level 1 validated per the requirements of California Code of Regulations Title 23, Division 2, Chapter 7 and the California Water Code Section 10608.34.

All recommendations on volume derivation and Data Validity Grades were incorporated into the water audit. ☒

Validator Information:

Water Audit Validator: Larry Lewison, Will Jernigan Validator Qualifications: Certified Water Audit Validator (CA)


ORD COMMUNITY WATER SYSTEM
CENTRAL MARINA WATER SYSTEM
RESERVOIR "D1"
2.0 MG
WSEL 510 FT.
HGL 550 FT.
7,000 GAL HYDRO-PNEUMATIC
E BOOSTER PUMPS
RESERVOIR "C2"
2.0 MG
WSEL 400 FT.
RESERVOIR "C1"
2.0 MG
WSEL 400 FT.
D BOOSTER PUMPS
RESERVOIR "B" 2.0 MG
WSEL 314 FT.
ALT VLV (NC)
PRV13
PRV12
PRV11
PRV-EG
TO EAST GARRISON
BOOSTER STATION "F"
INTERMEDIATE RESERVOIR
WSEL 221 FT.
SCHOONOVER PARK & PORTION OF FREDRICKS PARK
PRV10
NOT USED
WATER PUMP TO ZONE "C"
PRV16
PRV-SUNDAY
SEASIDE HIGHLANDS
SUNDAY APTS
PRV17
PRV20
PRV26
WELL 35
WELL 34
WELL 31
WELL 30
WELL 29
ORD COMMUNITY WELL FIELD
BASE 199'
24" WELL FIELD LINE
16" LINE
BERMAD VALVE
C BOOSTER PUMPS
B BOOSTER PUMPS
WSEL 132 FT.
SAND TANK 1.0 MG
PRV25
MARINA AIRPORT UCMBEST
PRV24
PRV22
PRV23
PRV17
PRV18
SEASIDE HIGHLANDS
SEASIDE HIGHLANDS
ZONE F
ZONE D
ZONE C
ZONE B
ZONE A
8" ZONE B PIPE
12" INTERTIE
12" BAYER TANK INTERTIE
INTERTIE 2
METER
MARINA WELL 11
MARINA WELL 10
INTERTIE 4 (USES WELL 10 METER)
INTERTIE 3
METER
MARINA ZONE B
WSEL 165 FT.
RESERVOIR "2" 2.0 MG
MARINA WELL 12
BASE 119'
(NC)
PRV2
16" RESERVATION ROAD INTERTIE TO ORD 16" LINE
INTERTIE 5
METER
WELL 10 LINE TO ORD 16" LINE
MARINA ZONE A
ORD 16"/12" WELL FIELD LINE
CALIFORNIA AVE 12" INTERTIE
INTERTIE 1
METER

#	AWWA Water Audit Input	Code	Final DVG	Basis on Input Derivation	Basis on Data Validity Grade
1	Volume from Own Sources	VOS	7	Supply meter profile: 8 wells, 7 active in CY20 with wells located centrally in the system (2 in Marina, 5 in Ord). Propeller-type meters for Wells 10, 11, 34 and WG are tied to SCADA to read flowrate and pressure. Data is not visible to operators. VOS input derived from: Manual reads from production meters as archived. Comments: Input derivation from supporting documents confirmed. Exclusion of non-potable volumes confirmed.	Percent of own supply metered: 100% Signal calibration frequency: Within last 5 years but less than annually. Volumetric testing frequency: Annual. Volumetric testing method: Clamp on meter with pump efficiency testing Percent of own supply volumetrically tested: 100%. Comments: Limiting criteria is occasional signal calibration and annual well meter testing.
2	VOS Master Meter & Supply Error Adjustment	VOS MMSEA	8	Input derivation: Volumetric accuracy results included and weighted appropriately. Net storage change included in MMSEA input: Yes. Comments:.	Supply meter read frequency: Daily. Supply meter read method: Manual. Frequency of data review for trends & anomalies: Weekly. Storage levels monitored in real-time: Yes. Comments: No automatic data logging for all sources is limiting criteria.
3	Water Imported	WI	n/a	Import meter profile: One emergency connection with Cal American water, not used during audit period.	
4	WI Master Meter & Supply Error Adjustment	WI MMSEA	n/a		
5	Water Exported	WE	n/a		
6	WE Master Meter & Supply Error Adjustment	WE MMSEA	n/a		
7	Billed metered	BMAC	8	Customer meter profile: Age profile: Many of small meters are less than 10-15 years old. Almost all small meters were upgraded to AMR in 2004-2005 Reading system: AMR. Read frequency: Monthly. Comments: Lag-time correction is employed in input derivation. Input derivation from supporting documents confirmed. BMAC volumes were	Percent of customers metered: 100% Small meter testing policy: Reactive - complaint based or flagged-consumption testing only. Number of small meters tested/year: 0 Large meter testing policy: Targeted testing is conducted annually for large meters. Number of large meters tested/year: 20

#	AWWA Water Audit Input	Code	Final DVG	Basis on Input Derivation	Basis on Data Validity Grade
				31019.40 AF plus the lag time adjustment (-7.53 AF). Exclusion of non-potable volumes confirmed.	Meter replacement policy: Upon failure only or upon testing results. Number of replacements/year: uncertain Billing data auditing: Standard billing QC, plus review of volumes by use type each billing cycle. Comments: Limiting criteria is regular meter testing practices and results to guide meter replacement activities.
8	Billed unmetered	BUAC	n/a	Comments: Fully Metered in 2020.	Policy for metering exemptions: Migration to fully metered status is complete.
9	Unbilled metered	UMAC	4	Profile: Own facilities, vactor/valve/jetter truck, lift stations Input derivation: Direct from meter readings read every month. Comments: Input derivation from supporting documents confirmed. Confirmed potable water usage only.	Policy for billing exemptions: Limited to own facilities. Comments: Limiting criteria is water utility policy does not articulate any specific accounts exempt from billing, however a collective understanding exists.
10	Unbilled unmetered	UUAC	10	Profile: Maintenance department usage and flushing after repairs. Comments: The District records operation and maintenance events for the ORD and Marina service areas. O&M events = 0.637 AF in 2020.	Comments: Good recordkeeping and estimation practices
11	Unauthorized consumption	UC	5	Comments: Default input applied.	Comments: Default grade applied.
12	Customer metering inaccuracies	CMI	2	See BMAC comments regarding meter testing & replacement activities. Input derivation: Rudimentary estimate. Comments: The average age of customer meter population is approximately 13 years. Used CMI of 1.5% as an estimate based on meter age.	Characterization of meter testing: Routine (proactive), but not fully representative. Characterization of meter replacement: Limited (upon mechanical failure as well as testing failure). Comments: No additional comments.
13	Systematic data handling errors	SDHE	5	Comments: Default input applied.	Comments: Default grade applied.
14	Length of mains	Lm	6	Input derivation: Totaled from GIS based map. Hydrant leads included: Yes. Comments: The 2020 audit input of 237.5 miles was nearly equal to previous year. In 2019 performed thorough true-up in GIS and adding backlog of as-built maps.	Mapping format: Digital. Asset management database: In place and integrated with GIS system. Map updates & field validation: Accomplished through normal work order processes. Comments: Limiting criteria is less than annual frequency of updating GIS.

#	AWWA Water Audit Input	Code	Final DVG	Basis on Input Derivation	Basis on Data Validity Grade
15	Number of service connections	Ns	8	Input derivation: Standard report run from billing system to generate total metered connections. It is estimated that 70% of all 3,928 marina water service points share a connection to the main line = 2750 water services share a connection. There are 2 services per connection so there are 1375 shared connections to the mains in Marina. Then there are the additional 1178 water services that do not share a connection to the main. All together in Marina there are 2573 water service connections to the main. Of the total 5,117 water services in the Ord Community, all 1872 military housing units share a connection to the mains. Therefore, there are 936 shared connections for these homes. The other 3,245 water services have a single connection. Combined, less fire connections, in the Ord community there are 4,453 service connections to the mains. In addition, throughout both Marina and Ord communities there are 130 fire connections. All combined, in both service areas, the number of total connections to the mains is 6,863 (2,573 + 4,453 + 130). Basis for database query: Meter ID - non-premise based. Comments: The 2020 audit input of 7,547 was an increase of 6% over previous year. Development within the service area is increasing	CIS updates & field validation: No proactive visits to meters Estimated error of total count within: Believed to be less than 1%. Comments: No additional comments.
16	Ave length of cust. service line	Lp	10	Comments: Default input and grade applied, as customer meters are typically located at the property boundary given California climate.	
17	Average operating pressure	AOP	6	Number of zones, general profile: 5 pressure zones (Ord) & 2 in Marina controlled by approximately 20 PRVs Typical pressure range: 30 to 90 psi Input derivation: Calculated as simple average from analysis of all zones. Comments: Planning to install pressure monitoring devices over next couple years to increase monitoring presence in the distribution system.	Extent of static pressure data collection: Hydrant pressures taken during routine system flushing and/or hydrant testing. Characterization of real-time pressure data collection: Basic - telemetry or pressure logging at boundary points (supply locations, tanks, PRVs, boosters). Hydraulic model: In place and calibrated within the last 5 years. Comments: Limiting criteria is basic coverage telemetry monitoring.
18	Total annual operating cost	TAOC	10	Input derivation: From official financial reports. Comments: Confirmed costs limited to water only, and water debt service included.	Frequency of internal auditing: Annually. Frequency of third-party CPA auditing: Annually. Comments: No additional comments.
19	Customer retail unit cost	CRUC	10	Input derivation: Total consumptive revenue divided by Billed Metered Authorized Consumption. Sewer charges are not based on water meter readings. Sewer revenues are not applicable.	Characterization of calculation: Weighted average composite of all rates. Input calculations have not been reviewed by an M36 water loss expert.

#	AWWA Water Audit Input	Code	Final DVG	Basis on Input Derivation	Basis on Data Validity Grade
				Comments: Rate structures are different for Marina & Ord systems, but were combined in the calculation.	Comments: No additional comments.
20	Variable production cost	VPC	8	Supply profile: Own sources only. Primary costs included: Treatment chemicals and supply & distribution power. Secondary costs included: Costs evaluated but none included. Comments: Calculation conducted for Marina and Ord separately and then weighted by volume produced for each system. Initial input was for Ord system at $270.04. Sum of electrical and chemical costs for each system divided by separate water suppled volumes then weighted by percentage of supply for a revised VPC = $247.54.	Characterization of calculation: Primary costs only. Input calculations have not been reviewed by an M36 water loss expert. Comments: Excellent method of calculation.

Key Audit Metrics

(~) VALIDITY Data Validity Score: 69 Data Validity Band (Level): Band III (51-70)

(#) VOLUME ILI: 0.72 Real Loss: 441.37 (gal/mile-main/day) Apparent Loss: 7.48 (gal/conn/day)

($) VALUE Annual Cost of Real Losses: $29,066 Annual Cost of Apparent Losses: $145,992

Infrastructure & Water Loss Management Practices:

Infrastructure age profile: Ord system was inherited from federal gov't. Infrastructure replacement policy (current, historic):Any rehab areas are being fully replaced.

Estimated main failures/year: Not discussed Estimated service failures/year: Not discussed

Extent of proactive leakage management: Have purchased leak equipment and are planning to implement a pilot program.

Other water loss management comments: Have isolated unused areas of the system and seen reduction in leaks.

Comments on Audit Metrics & Validity Improvements

The Infrastructure Leakage Index (ILI) of 0.71 describes a system that experiences leakage at 0.71 times the modeled technical minimum for its system characteristics. While this system may experience low volumes of leakage, the ILI after level 1 validation indicates that advanced validation is warranted before conclusions can be made regarding the system's leakage. At least one of the following scenarios may contribute to this result:

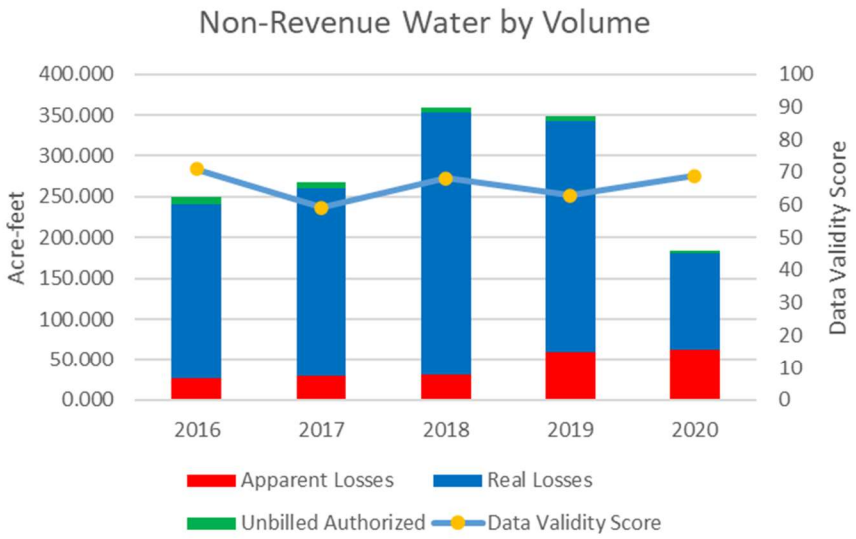
- **Water Supplied (both Own Source and Imported Water) may be understated**. This can occur if supply meters are under-registering more significantly than is currently reflected in the Master Meter Error & Supply Adjustment (MMSEA). This can also occur if the supply volumes include uncorrected inaccuracies in the data archives due to data gaps or SCADA formula errors.
- **Authorized consumption may be overstated.** This can occur if sales volumes have not been pro-rated to align consumption with dates of actual use instead of the dates of meter reads. This can also occur if the BMAC input includes any non-potable volumes or duplication/exclusion of potable volumes, or if the Unbilled-Unmetered input is over-estimated.
- **The estimate of average operating pressure may be too high**, thereby overestimating the technical minimum volume of leakage for the system.

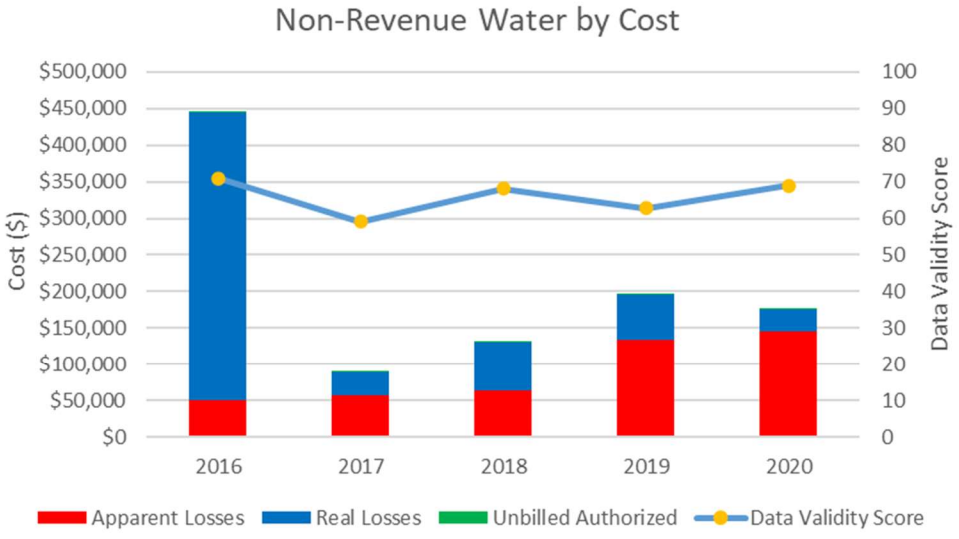
The Data Validity Score falling within Band III (51-70) suggests that next steps may be focused simultaneously on improving data reliability and evaluating cost-effective interventions for water & revenue loss recovery. Opportunities to improve the reliability of audit inputs and outputs include:

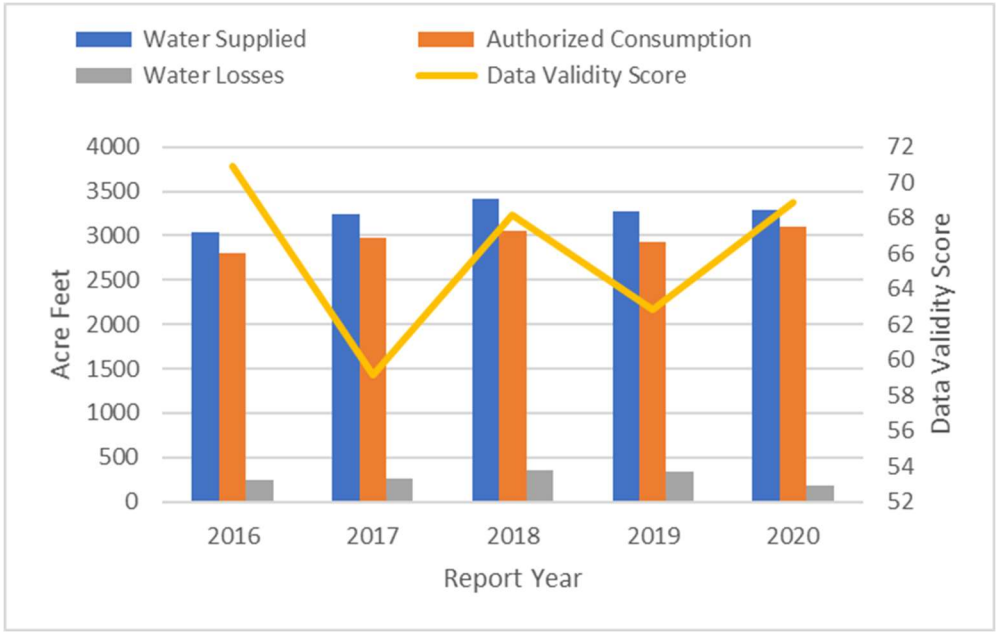
- Improved understanding of Supply Meter (Own) Master Meter Error: consider adopting or increasing the rigor of a source meter volumetric testing and calibration program, informed by the guidance provided in AWWA Manual M36 – Appendix A.
    - Great work getting all the meters tested in 2019 and developing a format to calculate total volumetric meter error. Continue exploring other feasible methods of accuracy testing.
    - Continue progress on replacing well meters with newer technologies and communication capabilities integrated with SCADA improvements.
- Improved estimation of CMI: consider a customer meter testing program which tests a sample of random meters whose stratification (by size, age, or other characteristics) represents the entire customer meter stock.

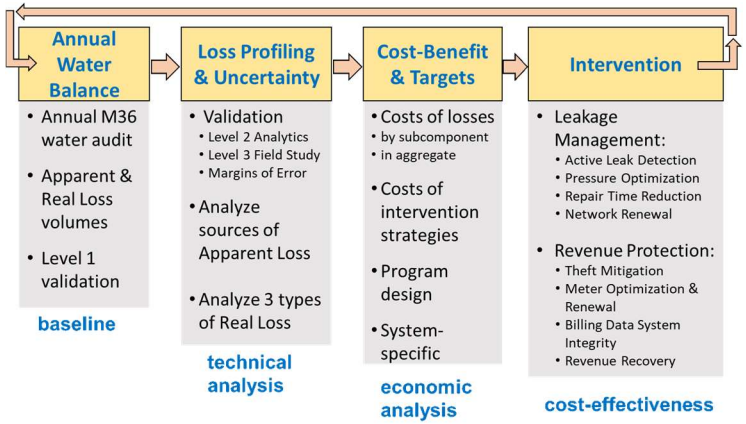
- Level 2 validation on raw data for Billed Metered Authorized Consumption to determine and resolve any instances of potable volume duplication or non-potable volume inclusion.

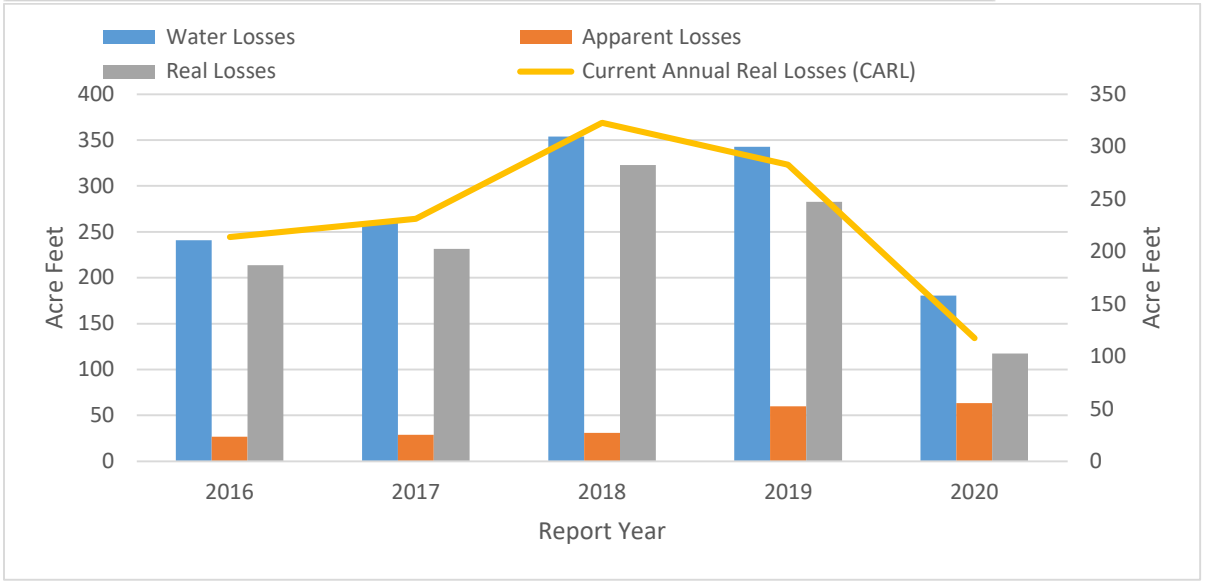
As noted above the Data Validity Score falls within Band III (51-70) which suggests that next steps may be focused primarily on establishing long-term apparent and real loss reduction goals, establish mechanisms for customer meter accuracy testing and identify any potential data gaps in the metering and billing functions. Generally, the largest component of non-revenue water by volume, are real losses. However, when the apparent and real losses are valued according to CRUC and VPC unit cost rates the greater cost is associated with apparent loss. Since a baseline of water audit data has been established with a moderate reliability in the supporting data, a reasonable next step to consider would be to **develop a real loss profile** through leakage component analysis as well as an **apparent loss profile** with an associated **economic analysis** to establish NRW recovery targets.






Water Supplied
Authorized Consumption
Water Losses
Data Validity Score
4000
3500
3000
2500
2000
1500
1000
500
0
Acre Feet
72
70
68
66
64
62
60
58
56
54
52
Data Validity Score
2016
2017
2018
2019
2020
Report Year


Annual Water Balance
Loss Profiling & Uncertainty
Cost-Benefit & Targets
Intervention
• Annual M36 water audit
• Apparent & Real Loss volumes
• Level 1 validation
baseline
• Validation
• Level 2 Analytics
• Level 3 Field Study
• Margins of Error
• Analyze sources of Apparent Loss
• Analyze 3 types of Real Loss
technical analysis
• Costs of losses
• by subcomponent
• in aggregate
• Costs of intervention strategies
• Program design
• System-specific
economic analysis
• Leakage Management:
• Active Leak Detection
• Pressure Optimization
• Repair Time Reduction
• Network Renewal
• Revenue Protection:
• Theft Mitigation
• Meter Optimization & Renewal
• Billing Data System Integrity
• Revenue Recovery
cost-effectiveness


Water Losses
Apparent Losses
Real Losses
Current Annual Real Losses (CARL)
400
350
300
250
200
150
100
50
0
Acre Feet
350
300
250
200
150
100
50
0
Acre Feet
2016
2017
2018
2019
2020
Report Year

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: Marina Coast Water District (27710017)
Reporting Year: 2020 | 1/2020 - 12/2020

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	7	3,291.380	acre-ft/yr	8		6.126	acre-ft/yr
Water imported:	n/a	0.000	acre-ft/yr				acre-ft/yr
Water exported:	n/a	0.000	acre-ft/yr				acre-ft/yr
WATER SUPPLIED:		**3,285.254**	acre-ft/yr				

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	8	3,101.870	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	4	2.090	acre-ft/yr			
Unbilled unmetered:	10	0.637	acre-ft/yr		0.637	acre-ft/yr
AUTHORIZED CONSUMPTION:		**3,104.597**	acre-ft/yr			

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption)

180.657 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:	5	8.213	acre-ft/yr		8.213	acre-ft/yr
Customer metering inaccuracies:	2	47.268	acre-ft/yr	1.50%		acre-ft/yr
Systematic data handling errors:	5	7.755	acre-ft/yr		7.755	acre-ft/yr
Apparent Losses:		**63.236**	acre-ft/yr			

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **117.421** acre-ft/yr

WATER LOSSES: **180.657** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **183.384** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	6	237.5	miles
Number of active AND inactive service connections:	8	7,547	
Service connection density:		32	conn./mile main
Are customer meters typically located at the curbstop or property line?		Yes	
Average length of customer service line:			(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	6	60.0	psi

COST DATA

Total annual cost of operating water system:	10	$16,630,277	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$5.30	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	8	$247.54	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 69 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Customer metering inaccuracies
3: Unbilled metered

AWWA Free Water Audit Software:
System Attributes and Performance Indicators

WAS v5.0

Water Audit Report for: Marina Coast Water District (27710017)
Reporting Year: 2020 | 1/2020 - 12/2020

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 69 out of 100 ***

System Attributes:

	Apparent Losses:	63.236	acre-ft/yr
+	Real Losses:	117.421	acre-ft/yr
=	**Water Losses:**	**180.657**	acre-ft/yr
?	Unavoidable Annual Real Losses (UARL):	162.44	acre-ft/yr
	Annual cost of Apparent Losses:	$145,992	
	Annual cost of Real Losses:	$29,066	Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumpiton

Performance Indicators:

Financial:	Non-revenue water as percent by volume of Water Supplied:	5.6%	
	Non-revenue water as percent by cost of operating system:	1.1%	Real Losses valued at Variable Production Cost
Operational Efficiency:	Apparent Losses per service connection per day:	7.48	gallons/connection/day
	Real Losses per service connection per day:	N/A	gallons/connection/day
	Real Losses per length of main per day*:	441.37	gallons/mile/day
	Real Losses per service connection per day per psi pressure:	N/A	gallons/connection/day/psi
	From Above, Real Losses = Current Annual Real Losses (CARL):	117.42	acre-feet/year
?	Infrastructure Leakage Index (ILI) [CARL/UARL]:	0.72	

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

AWWA Free Water Audit Software: Water Balance

WAS v5.0

American Water Works Association.

Water Audit Report for:	Marina Coast Water District (27710017)	
Reporting Year:	2020	1/2020 - 12/2020
Data Validity Score:	69	

		Water Exported 0.000			Billed Water Exported	Revenue Water 0.000
Own Sources (Adjusted for known errors) 3,285.254	System Input 3,285.254	Water Supplied 3,285.254	Authorized Consumption 3,104.597	Billed Authorized Consumption 3,101.870	Billed Metered Consumption (water exported is removed) 3,101.870	Revenue Water
					Billed Unmetered Consumption 0.000	3,101.870
				Unbilled Authorized Consumption 2.727	Unbilled Metered Consumption 2.090	Non-Revenue Water (NRW)
					Unbilled Unmetered Consumption 0.637	
			Water Losses 180.657	Apparent Losses 63.236	Unauthorized Consumption 8.213	183.384
					Customer Metering Inaccuracies 47.268	
					Systematic Data Handling Errors 7.755	
Water Imported 0.000				Real Losses 117.421	Leakage on Transmission and/or Distribution Mains Not broken down	
					Leakage and Overflows at Utility's Storage Tanks Not broken down	
					Leakage on Service Connections Not broken down	

AWWA Free Water Audit Software:
Dashboard

WAS v5.0

American Water Works Association.

The graphic below is a visual representation of the Water Balance with bar heights propotional to the volume of the audit components

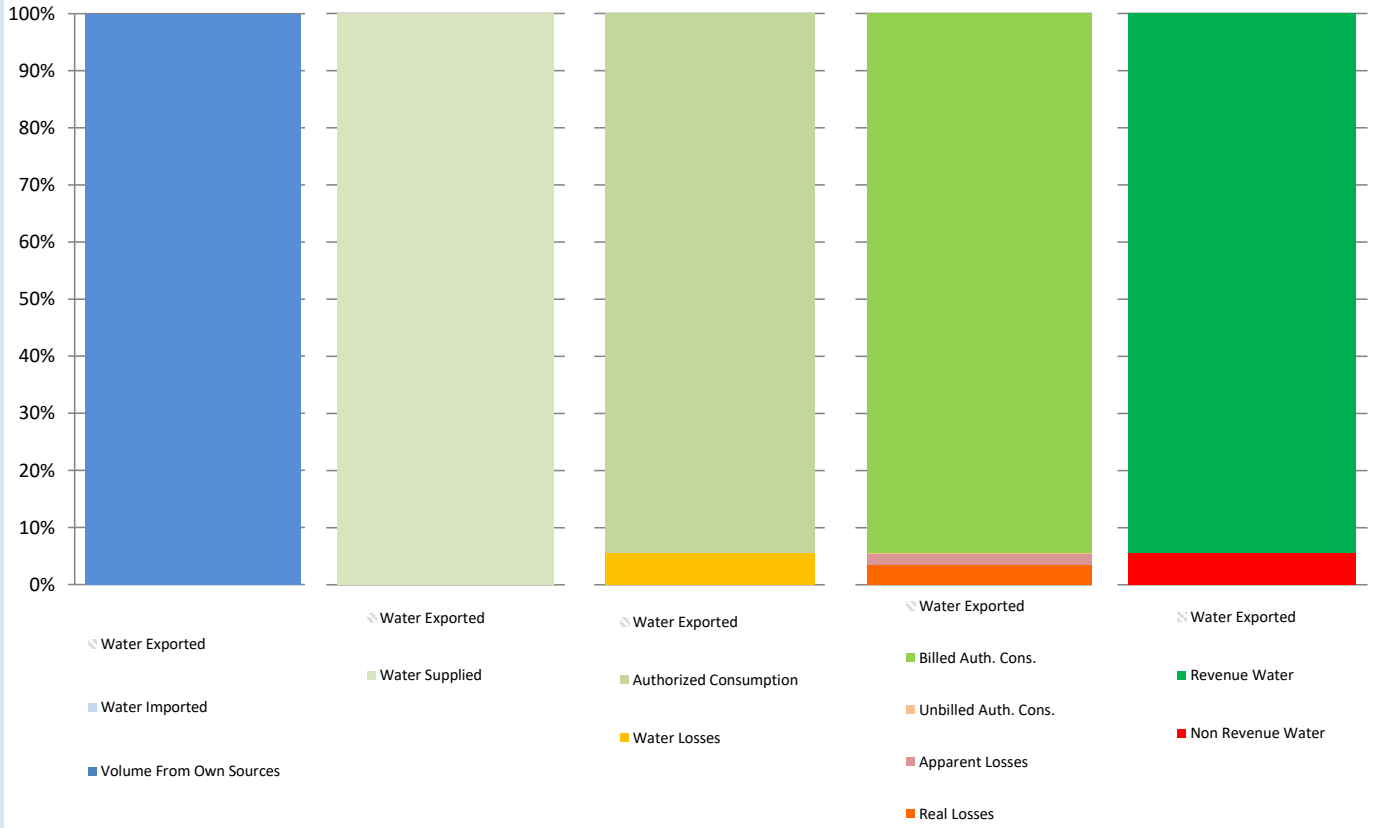
Water Audit Report for: Marina Coast Water District (27710017)

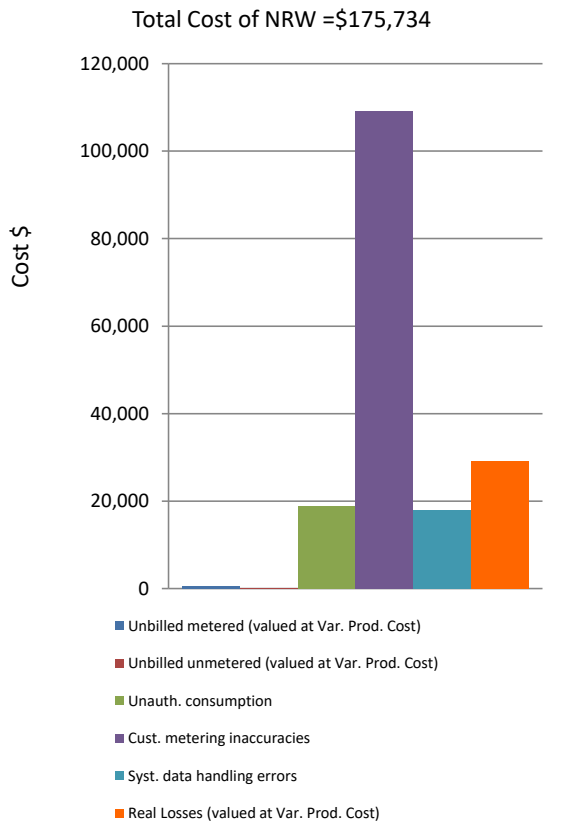
Reporting Year: 2020 | 1/2020 - 12/2020

Data Validity Score: 69

○ Show me the VOLUME of Non-Revenue Water

◉ Show me the COST of Non-Revenue Water





AWWA Free Water Audit Software: User Notes

Water Audit Report for: Marina Coast Water District
Audit Year: 2020

Calendar
Jan 01 2020 - Dec 31 2020

General Notes:	2020 Prepared by: Amelia Sobrepena and Paul Lord. Find complete workbook with calculations, derivations and comments in the File Pathway: J: \ Water Systen #2710017 Demand \ Anual Water System Stats \ Water System Stats 2020 \ 2020 Water Loss Audit \ 2020 Water Loss Data \ 2020 Audit Calculations (CURRENT DATE)

	Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet / go to grading	**Volume from Own Sources (VOS)**	MCWD has 8 wells, 7 of which are active. MCWD used well production numbers to determine the total water extracted. The data is reported by the O&M department. They produced a 2020 Well Production Summary Report in acre-feet. MCWD extracted a total of 3,291.38 acre-feet for the 2020 calendar year. File Pathway: P: \ 2020 WELL PRODUCTION \ Prod. Sum \ Production Summary	
go to worksheet / go to grading	**Volume from Own Sources Error Adjustment (VOSEA)**	The Master meter & supply error calculations are outsources from Craig Evans Pumping Service. Using the calculations from Larry Lewison at Cavanaugh, MCWD determined the total meter error for all active wells to be (over) reporting by 6.126 acre feet. For supporting calculations see 2020 Audit Calculations Workbook.	
go to worksheet / go to grading	**Water Imported (WI)**	The MCWD does not import any water into their system. MCWD has an emergency connection with Cal Am. Rarely used. 1 direction (to Marina). Not actively metered.	
go to worksheet / go to grading	**Water Imported Error Adjustment (WIEA)**	The emergency connection with Cal AM is not metered and has not been used during the 2020 calendar year.	
go to worksheet / go to grading	**Water Exported (WE)**	N/A. MCWD does not export any water. All water is produced and distributed within the Marina Coast Water District service area.	

		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	**Water Exported Error Adjustment (WEIA)**	N/A. MCWD does not export any water.	
go to worksheet	go to grading	**Billed Metered Authorized Consumption (BMAC)**	Billed Metered Consumption for 2020 adjusted for Lag Time by -6.53 AF. For supporting calculations see: 2020 Audit Calculations Workbook.	
go to worksheet	go to grading	**Billed Unmetered Authorized Consumption (BUAC)**	In 2020, there were no unmetered housing units, so the billed unmetered consumption is zero.	
go to worksheet	go to grading	**Unbilled Metered Authorized Consumption (UMAC)**	All district facilities and operations equipment is metered to record Unbilled Metered water use for operations. Hydrant flushing by District staff is metered. District facilities and operations equipment meters are now read and usage recorded every month at the same frequency as all Billed Metered accounts	
go to worksheet	go to grading	**Unbilled Unmetered Authorized Consumption (UUAC)**	Operations department estimates and records each event of water used to repair and flush broken water mains. Hydrant flushing is metered.	
go to worksheet	go to grading	**Systematic Data Handling Errors (SDHE)**	The MCWD has not yet gathered detailed data or assesed the systematic data error. It's applying the default value of 0.25% of of the billing authorized consumption volume.	
go to worksheet	go to grading	**Customer Metering Inaccuracies (CMI)**	The MCWD does not have a system in place to test small meters (under 4") for customer meter inaccuracies. Almost all small meters were upgrades to AMR in 2004-2005. Accuracy assumed to still +/- 1.5% as advised by our Validator during the previous years audit. District did prioritize (by consumption and revenue) and test a number of the largest meters.	

		Audit Item	Notes on Input Derivation	Notes on Data Validity Grading
go to worksheet	go to grading	**Unauthorized Consumption (UC)**	This was derived automatically from the AWWA water loss audit software.	
go to worksheet	go to grading	**Length of Mains (Lm)**	The data was obtained from Engineer Alec. Supporting documentation can be found in the Water Loss Audit Folder 2020 Water System Desgn and Measurement.	
go to worksheet	go to grading	**Number of Service Connections (Nc)**	It is estimated that 70% of all 3,977 marina water service points share a connection to the mainline = 2784 water services share a connection. There are 2 services per connection so there are 1392 (2784/2) shared connections to the mains in Marina. Then there are the additional 1193 water services that do not share a connection to the main. All together in Marina there are 2585 water service connections to the main. Of the total 5,567 water services in the Ord Community, all 1872 military housing units share a connection to the mains.	
go to worksheet	go to grading	**Average Length of (private) Customer Service Line (Lp)**	0 foot customer meters are typically located at the curbstop	
go to worksheet	go to grading	**Average Operating Pressure (AOP)**	The District's Engineering department measured service elevation in feet and service pressure to derive the average (PSI) for the individual zones (A-E). The average system operating pressure is calculated by the sum of all zones devided by the 5 zones to equal 60.0 PSI. 5 pressure zones (Ord) & 2 in Marina controlled by PRVs. Hydrant pressures taken during routine system flushing and/or hydrant testing. Basic - telemetry or pressure logging at boundary points (supply locations, tanks, PRVs, boosters).	
go to worksheet	go to grading	**Customer Retail Unit Charge (CRUC)**	Total consumptive revenue divided by Billed Metered Authorized Consumption. Sewer charges are not based on water meter readings. Sewer revenues are not applicable. Rate structures are different for Marina & Ord systems, but were combined in the calculation. Weighted average composite of all rates.	Method for CRUC calculation originally provided by Water Loss Audit Validator Cavanaugh & Associates, P.A. and that method has been carried over each year since.
go to worksheet	go to grading	**Variable Production Cost (VPC)**	Characterization of calculation: Primary costs only. Calculation conducted for Marina and Ord separately and then weighted by volume produced for each system.	

AWWA Free Water Audit Software: Grading Matrix

WAS 5.0

The grading assigned to each audit component and the corresponding recommended improvements and actions are highlighted in yellow. Audit accuracy is likely to be improved by prioritizing those items shown in red

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
WATER SUPPLIED											
Volume from own sources:	Select this grading only if the water utility purchases/imports all of its water resources (i.e. has no sources of its own)	Less than 25% of water production sources are metered, remaining sources are estimated. No regular meter accuracy testing or electronic calibration conducted.	25% - 50% of treated water production sources are metered; other sources estimated. No regular meter accuracy testing or electronic calibration conducted.	Conditions between 2 and 4	50% - 75% of treated water production sources are metered, other sources estimated. Occasional meter accuracy testing or electronic calibration conducted.	Conditions between 4 and 6	At least 75% of treated water production sources are metered, or at least 90% of the source flow is derived from metered sources. Meter accuracy testing and/or electronic calibration of related instrumentation is conducted annually. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of treated water production sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted annually, less than 10% of meters are found outside of +/- 6% accuracy	Conditions between 8 and 10	100% of treated water production sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted semi-annually, with less than 10% found outside of +/- 3% accuracy. Procedures are reviewed by a third party knowledgeable in the M36 methodology.
Improvements to attain higher data grading for "Volume from own Sources" component:		to qualify for 2: Organize and launch efforts to collect data for determining volume from own sources	to qualify for 4: Locate all water production sources on maps and in the field, launch meter accuracy testing for existing meters, begin to install meters on unmetered water production sources and replace any obsolete/defective meters.		to qualify for 6: Formalize annual meter accuracy testing for all source meters; specify the frequency of testing. Complete installation of meters on unmetered water production sources and complete replacement of all obsolete/defective meters.		to qualify for 8: Conduct annual meter accuracy testing and calibration of related instrumentation on all meter installations on a regular basis. Complete project to install new, or replace defective existing, meters so that entire production meter population is metered. Repair or replace meters outside of +/- 6% accuracy.		to qualify for 10: Maintain annual meter accuracy testing and calibration of related instrumentation for all meter installations. Repair or replace meters outside of +/- 3% accuracy. Investigate new meter technology; pilot one or more replacements with innovative meters in attempt to further improve meter accuracy.		to maintain 10: Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate/pilot improving metering technology.
Volume from own sources master meter and supply error adjustment:	Select n/a only if the water utility fails to have meters on its sources of supply	Inventory information on meters and paper records of measured volumes exist but are incomplete and/or in a very crude condition; data error cannot be determined	No automatic datalogging of production volumes; daily readings are scribed on paper records without any accountability controls. Flows are not balanced across the water distribution system: tank/storage elevation changes are not employed in calculating the "Volume from own sources" component and archived flow data is adjusted only when grossly evident data error occurs.	Conditions between 2 and 4	Production meter data is logged automatically in electronic format and reviewed at least on a monthly basis with necessary corrections implemented. "Volume from own sources" tabulations include estimate of daily changes in tanks/storage facilities. Meter data is adjusted when gross data errors occur, or occasional meter testing deems this necessary.	Conditions between 4 and 6	Hourly production meter data logged automatically & reviewed on at least a weekly basis. Data is adjusted to correct gross error when meter/instrumentation equipment malfunction is detected; and/or error is confirmed by meter accuracy testing. Tank/storage facility elevation changes are automatically used in calculating a balanced "Volume from own sources" component, and data gaps in the archived data are corrected on at least a weekly basis.	Conditions between 6 and 8	Continuous production meter data is logged automatically & reviewed each business day. Data is adjusted to correct gross error from detected meter/instrumentation equipment malfunction and/or results of meter accuracy testing. Tank/storage facility elevation changes are automatically used in "Volume from own sources" tabulations and data gaps in the archived data are corrected on a daily basis.	Conditions between 8 and 10	Computerized system (SCADA or similar) automatically balances flows from all sources and storages; results are reviewed each business day. Tight accountability controls ensure that all data gaps that occur in the archived flow data are quickly detected and corrected. Regular calibrations between SCADA and sources meters ensures minimal data transfer error.
Improvements to attain higher data grading for "Master meter and supply error adjustment" component:		to qualify for 2: Develop a plan to restructure recordkeeping system to capture all flow data; set a procedure to review flow data on a daily basis to detect input errors. Obtain more reliable information about existing meters by conducting field inspections of meters and related instrumentation, and obtaining manufacturer literature.	to qualify for 4: Install automatic datalogging equipment on production meters. Complete installation of level instrumentation at all tanks/storage facilities and include tank level data in automatic calculation routine in a computerized system. Construct a computerized listing or spreadsheet to archive input volumes, tank/storage volume changes and import/export flows in order to determine the composite "Water Supplied" volume for the distribution system. Set a procedure to review this data on a monthly basis to detect gross anomalies and data gaps.		to qualify for 6: Refine computerized data collection and archive to include hourly production meter data that is reviewed at least on a weekly basis to detect specific data anomalies and gaps. Use daily net storage change to balance flows in calculating "Water Supplied" volume. Necessary corrections to data errors are implemented on a weekly basis.		to qualify for 8: Ensure that all flow data is collected and archived on at least an hourly basis. All data is reviewed and detected errors corrected each business day. Tank/storage levels variations are employed in calculating balanced "Water Supplied" component. Adjust production meter data for gross error and inaccuracy confirmed by testing.		to qualify for 10: Link all production and tank/storage facility elevation change data to a Supervisory Control & Data Acquisition (SCADA) System, or similar computerized monitoring/control system, and establish automatic flow balancing algorithm and regularly calibrate between SCADA and source meters. Data is reviewed and corrected each business day.		to maintain 10: Monitor meter innovations for development of more accurate and less expensive flowmeters. Continue to replace or repair meters as they perform outside of desired accuracy limits. Stay abreast of new and more accurate water level instruments to better record tank/storage levels and archive the variations in storage volume. Keep current with SCADA and data management systems to ensure that archived data is well-managed and error free.
Water Imported:	Select n/a if the water utility's supply is exclusively from its own water resources (no bulk purchased/ imported water)	Less than 25% of imported water sources are metered, remaining sources are estimated. No regular meter accuracy testing.	25% - 50% of imported water sources are metered; other sources estimated. No regular meter accuracy testing.	Conditions between 2 and 4	50% - 75% of imported water sources are metered, other sources estimated. Occasional meter accuracy testing conducted.	Conditions between 4 and 6	At least 75% of imported water sources are metered, meter accuracy testing and/or electronic calibration of related instrumentation is conducted annually for all meter installations. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of imported water sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted annually, less than 10% of meters are found outside of +/- 6% accuracy	Conditions between 8 and 10	100% of imported water sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted semi-annually for all meter installations, with less than 10% of accuracy tests found outside of +/- 3% accuracy.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Water Imported Volume" component: (*Note: usually the water supplier selling the water - "the Exporter" - to the utility being audited is responsible to maintain the metering installation measuring the imported volume. The utility should coordinate carefully with the Exporter to ensure that adequate meter upkeep takes place and an accurate measure of the Water Imported volume is quantified.*)		to qualify for 2: Review bulk water purchase agreements with partner suppliers; confirm requirements for use and maintenance of accurate metering. Identify needs for new or replacement meters with goal to meter all imported water sources.	To qualify for 4: Locate all imported water sources on maps and in the field, launch meter accuracy testing for existing meters, begin to install meters on unmetered imported water interconnections and replace obsolete/defective meters.		to qualify for 6: Formalize annual meter accuracy testing for all imported water meters, planning for both regular meter accuracy testing and calibration of the related instrumentation. Continue installation of meters on unmetered imported water interconnections and replacement of obsolete/defective meters.		to qualify for 8: Complete project to install new, or replace defective, meters on all imported water interconnections. Maintain annual meter accuracy testing for all imported water meters and conduct calibration of related instrumentation at least annually. Repair or replace meters outside of +/- 6% accuracy.		to qualify for 10: Conduct meter accuracy testing for all meters on a semi-annual basis, along with calibration of all related instrumentation. Repair or replace meters outside of +/- 3% accuracy. Investigate new meter technology; pilot one or more replacements with innovative meters in attempt to improve meter accuracy.		to maintain 10: Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Continue to conduct calibration of related instrumentation on a semi-annual basis. Repair or replace meters outside of +/- 3% accuracy. Continually investigate/pilot improving metering technology.
Water imported master meter and supply error adjustment:	Select n/a if the Imported water supply is unmetered, with Imported water quantities estimated on the billing invoices sent by the Exporter to the purchasing Utility.	Inventory information on imported meters and paper records of measured volumes exist but are incomplete and/or in a very crude condition; data error cannot be determined Written agreement(s) with water Exporter(s) are missing or written in vague language concerning meter management and testing.	No automatic datalogging of imported supply volumes; daily readings are scribed on paper records without any accountability controls to confirm data accuracy and the absence of errors and data gaps in recorded volumes. Written agreement requires meter accuracy testing but is vague on the details of how and who conducts the testing.	Conditions between 2 and 4	Imported supply metered flow data is logged automatically in electronic format and reviewed at least on a monthly basis by the Exporter with necessary corrections implemented. Meter data is adjusted by the Exporter when gross data errors are detected. A coherent data trail exists for this process to protect both the selling and the purchasing Utility. Written agreement exists and clearly states requirements and roles for meter accuracy testing and data management.	Conditions between 4 and 6	Hourly Imported supply metered data is logged automatically & reviewed on at least a weekly basis by the Exporter. Data is adjusted to correct gross error when meter/instrumentation equipment malfunction is detected; and to correct for error confirmed by meter accuracy testing. Any data gaps in the archived data are detected and corrected during the weekly review. A coherent data trail exists for this process to protect both the selling and the purchasing Utility.	Conditions between 6 and 8	Continuous Imported supply metered flow data is logged automatically & reviewed each business day by the Exporter. Data is adjusted to correct gross error from detected meter/instrumentation equipment malfunction and/or results of meter accuracy testing. Any data errors/gaps are detected and corrected on a daily basis. A data trail exists for the process to protect both the selling and the purchasing Utility.	Conditions between 8 and 10	Computerized system (SCADA or similar) automatically records data which is reviewed each business day by the Exporter. Tight accountability controls ensure that all error/data gaps that occur in the archived flow data are quickly detected and corrected. A reliable data trail exists and contract provisions for meter testing and data management are reviewed by the selling and purchasing Utility at least once every five years.
Improvements to attain higher data grading for "Water imported master meter and supply error adjustment" component:		to qualify for 2: Develop a plan to restructure recordkeeping system to capture all flow data; set a procedure to review flow data on a daily basis to detect input errors. Obtain more reliable information about existing meters by conducting field inspections of meters and related instrumentation, and obtaining manufacturer literature. Review the written agreement between the selling and purchasing Utility.	to qualify for 4: Install automatic datalogging equipment on Imported supply meters. Set a procedure to review this data on a monthly basis to detect gross anomalies and data gaps. Launch discussions with the Exporters to jointly review terms of the written agreements regarding meter accuracy testing and data management; revise the terms as necessary.		to qualify for 6: Refine computerized data collection and archive to include hourly Imported supply metered flow data that is reviewed at least on a weekly basis to detect specific data anomalies and gaps. Make necessary corrections to errors/data errors on a weekly basis.		to qualify for 8: Ensure that all Imported supply metered flow data is collected and archived on at least an hourly basis. All data is reviewed and errors/data gaps are corrected each business day.		to qualify for 10: Conduct accountability checks to confirm that all Imported supply metered data is reviewed and corrected each business day by the Exporter. Results of all meter accuracy tests and data corrections should be available for sharing between the Exporter and the purchasing Utility. Establish a schedule for a regular review and updating of the contractual language in the written agreement between the selling and the purchasing Utility; at least every five years.		to maintain 10: Monitor meter innovations for development of more accurate and less expensive flowmeters; work with the Exporter to help identify meter replacement needs. Keep communication lines with Exporters open and maintain productive relations. Keep the written agreement current with clear and explicit language that meets the ongoing needs of all parties.
Water Exported:	Select n/a if the water utility sells no bulk water to neighboring water utilities (no exported water sales)	Less than 25% of exported water sources are metered, remaining sources are estimated. No regular meter accuracy testing.	25% - 50% of exported water sources are metered; other sources estimated. No regular meter accuracy testing.	Conditions between 2 and 4	50% - 75% of exported water sources are metered, other sources estimated. Occasional meter accuracy testing conducted.	Conditions between 4 and 6	At least 75% of exported water sources are metered, meter accuracy testing and/or electronic calibration conducted annually. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of exported water sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted annually, less than 10% of meters are found outside of +/- 6% accuracy	Conditions between 8 and 10	100% of exported water sources are metered, meter accuracy testing and electronic calibration of related instrumentation is conducted semi-annually for all meter installations, with less than 10% of accuracy tests found outside of +/- 3% accuracy.
Improvements to attain higher data grading for "Water Exported Volume" component: (*Note: usually, if the water utility being audited sells (Exports) water to a neighboring purchasing Utility, it is the responsibility of the utility exporting the water to maintain the metering installation measuring the Exported volume. The utility exporting the water should ensure that adequate meter upkeep takes place and an accurate measure of the Water Exported volume is quantified.*)		to qualify for 2: Review bulk water sales agreements with purchasing utilities; confirm requirements for use & upkeep of accurate metering. Identify needs to install new, or replace defective meters as needed.	To qualify for 4: Locate all exported water sources on maps and in field, launch meter accuracy testing for existing meters, begin to install meters on unmetered exported water interconnections and replace obsolete/defective meters		to qualify for 6: Formalize annual meter accuracy testing for all exported water meters. Continue installation of meters on unmetered exported water interconnections and replacement of obsolete/defective meters.		to qualify for 8: Complete project to install new, or replace defective, meters on all exported water interconnections. Maintain annual meter accuracy testing for all exported water meters. Repair or replace meters outside of +/- 6% accuracy.		to qualify for 10: Maintain annual meter accuracy testing for all meters. Repair or replace meters outside of +/- 3% accuracy. Investigate new meter technology; pilot one or more replacements with innovative meters in attempt to improve meter accuracy.		to maintain 10: Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate/pilot improving metering technology.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Water exported master meter and supply error adjustment:	Select n/a only if the water utility fails to have meters on its exported supply interconnections.	Inventory information on exported meters and paper records of measured volumes exist but are incomplete and/or in a very crude condition; data error cannot be determined Written agreement(s) with the utility purchasing the water are missing or written in vague language concerning meter management and testing.	No automatic datalogging of exported supply volumes; daily readings are scribed on paper records without any accountability controls to confirm data accuracy and the absence of errors and data gaps in recorded volumes. Written agreement requires meter accuracy testing but is vague on the details of how and who conducts the testing.	Conditions between 2 and 4	Exported metered flow data is logged automatically in electronic format and reviewed at least on a monthly basis, with necessary corrections implemented. Meter data is adjusted by the utility selling (exporting) the water when gross data errors are detected. A coherent data trail exists for this process to protect both the utility exporting the water and the purchasing Utility. Written agreement exists and clearly states requirements and roles for meter accuracy testing and data management.	Conditions between 4 and 6	Hourly exported supply metered data is logged automatically & reviewed on at least a weekly basis by the utility selling the water. Data is adjusted to correct gross error when meter/instrumentation equipment malfunction is detected; and to correct for error found by meter accuracy testing. Any data gaps in the archived data are detected and corrected during the weekly review. A coherent data trail exists for this process to protect both the selling (exporting) utility and the purchasing Utility.	Conditions between 6 and 8	Continuous exported supply metered flow data is logged automatically & reviewed each business day by the utility selling (exporting) the water. Data is adjusted to correct gross error from detected meter/instrumentation equipment malfunction and any error confirmed by meter accuracy testing. Any data errors/gaps are detected and corrected on a daily basis. A data trail exists for the process to protect both the selling (exporting) Utility and the purchasing Utility.	Conditions between 8 and 10	Computerized system (SCADA or similar) automatically records data which is reviewed each business day by the utility selling (exporting) the water. Tight accountability controls ensure that all error/data gaps that occur in the archived flow data are quickly detected and corrected. A reliable data trail exists and contract provisions for meter testing and data management are reviewed by the selling Utility and purchasing Utility at least once every five years.
Improvements to attain higher data grading for "Water exported master meter and supply error adjustment" component:		to qualify for 2: Develop a plan to restructure recordkeeping system to capture all flow data; set a procedure to review flow data on a daily basis to detect input errors. Obtain more reliable information about existing meters by conducting field inspections of meters and related instrumentation, and obtaining manufacturer literature. Review the written agreement between the utility selling (exporting) the water and the purchasing Utility.	to qualify for 4: Install automatic datalogging equipment on exported supply meters. Set a procedure to review this data on a monthly basis to detect gross anomalies and data gaps. Launch discussions with the purchasing utilities to jointly review terms of the written agreements regarding meter accuracy testing and data management; revise the terms as necessary.		to qualify for 6: Refine computerized data collection and archive to include hourly exported supply metered flow data that is reviewed at least on a weekly basis to detect specific data anomalies and gaps. Make necessary corrections to errors/data errors on a weekly basis.		to qualify for 8: Ensure that all exported metered flow data is collected and archived on at least an hourly basis. All data is reviewed and errors/data gaps are corrected each business day.		to qualify for 10: Conduct accountability checks to confirm that all exported metered flow data is reviewed and corrected each business day by the utility selling the water. Results of all meter accuracy tests and data corrections should be available for sharing between the utility and the purchasing Utility. Establish a schedule for a regular review and updating of the contractual language in the written agreements with the purchasing utilities; at least every five years.		to maintain 10: Monitor meter innovations for development of more accurate and less expensive flowmeters; work with the purchasing utilities to help identify meter replacement needs. Keep communication lines with the purchasing utilities open and maintain productive relations. Keep the written agreement current with clear and explicit language that meets the ongoing needs of all parties.
AUTHORIZED CONSUMPTION											
Billed metered:	n/a (not applicable). Select n/a only if the entire customer population is not metered and is billed for water service on a flat or fixed rate basis. In such a case the volume entered must be zero.	Less than 50% of customers with volume-based billings from meter readings; flat or fixed rate billing exists for the majority of the customer population	At least 50% of customers with volume-based billing from meter reads; flat rate billing for others. Manual meter reading is conducted, with less than 50% meter read success rate, remainding accounts' consumption is estimated. Limited meter records, no regular meter testing or replacement. Billing data maintained on paper records, with no auditing.	Conditions between 2 and 4	At least 75% of customers with volume-based, billing from meter reads; flat or fixed rate billing for remaining accounts. Manual meter reading is conducted with at least 50% meter read success rate; consumption for accounts with failed reads is estimated. Purchase records verify age of customer meters; only very limited meter accuracy testing is conducted. Customer meters are replaced only upon complete failure. Computerized billing records exist, but only sporadic internal auditing conducted.	Conditions between 4 and 6	At least 90% of customers with volume-based billing from meter reads; consumption for remaining accounts is estimated. Manual customer meter reading gives at least 80% customer meter reading success rate; consumption for accounts with failed reads is estimated. Good customer meter records eixst, but only limited meter accuracy testing is conducted. Regular replacement is conducted for the oldest meters. Computerized billing records exist with annual auditing of summary statistics conducting by utility personnel.	Conditions between 6 and 8	At least 97% of customers exist with volume-based billing from meter reads. At least 90% customer meter reading success rate; or at least 80% read success rate with planning and budgeting for trials of Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) in one or more pilot areas. Good customer meter records. Regular meter accuracy testing guides replacement of statistically significant number of meters each year. Routine auditing of computerized billing records for global and detailed statistics occurs annually by utility personnel, and is verified by third party at least once every five years.	Conditions between 8 and 10	At least 99% of customers exist with volume-based billing from meter reads. At least 95% customer meter reading success rate; or minimum 80% meter reading success rate, with Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) trials underway. Statistically significant customer meter testing and replacement program in place on a continuous basis. Computerized billing with routine, detailed auditing, including field investigation of representative sample of accounts undertaken annually by utility personnel. Audit is conducted by third party auditors at least once every three years.
Improvements to attain higher data grading for "Billed Metered Consumption" component:	If n/a is selected because the customer meter population is unmetered, consider establishing a new policy to meter the customer population and employ water rates based upon metered volumes.	to qualify for 2: Conduct investigations or trials of customer meters to select appropriate meter models. Budget funding for meter installations. Investigate volume based water rate structures.	to qualify for 4: Purchase and install meters on unmetered accounts. Implement policies to improve meter reading success. Catalog meter information during meter read visits to identify age/model of existing meters. Test a minimal number of meters for accuracy. Install computerized billing system.		to qualify for 6: Purchase and install meters on unmetered accounts. Eliminate flat fee billing and establish appropriate water rate structure based upon measured consumption. Continue to achieve verifiable success in removing manual meter reading barriers. Expand meter accuracy testing. Launch regular meter replacement program. Launch a program of annual auditing of global billing statistics by utility personnel.		to qualify for 8: Purchase and install meters on unmetered accounts. If customer meter reading success rate is less than 97%, assess cost-effectiveness of Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) system for portion or entire system; or otherwise achieve ongoing improvements in manual meter reading success rate to 97% or higher. Refine meter accuracy testing program. Set meter replacement goals based upon accuracy test results. Implement annual auditing of detailed billing records by utility personnel and implement third party auditing at least once every five years.		to qualify for 10: Purchase and install meters on unmetered accounts. Launch Automatic Meter Reading (AMR) or Advanced Metering Infrastructure (AMI) system trials if manual meter reading success rate of at least 99% is not achieved within a five-year program. Continue meter accuracy testing program. Conduct planning and budgeting for large scale meter replacement based upon meter life cycle analysis using cumulative flow target. Continue annual detailed billing data auditing by utility personnel and conduct third party auditing at least once every three years.		to maintain 10: Continue annual internal billing data auditing, and third party auditing at least every three years. Continue customer meter accuracy testing to ensure that accurate customer meter readings are obtained and entered as the basis for volume based billing. Stay abreast of improvements in Automatic Meter Reading (AMR) and Advanced Metering Infrastructure (AMI) and information management. Plan and budget for justified upgrades in metering, meter reading and billing data management to maintain very high accuracy in customer metering and billing.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Billed unmetered:	Select n/a if it is the policy of the water utility to meter all customer connections and it has been confirmed by detailed auditing that all customers do indeed have a water meter; i.e. no intentionally unmetered accounts exist	Water utility policy does not require customer metering; flat or fixed fee billing is employed. No data is collected on customer consumption. The only estimates of customer population consumption available are derived from data estimation methods using average fixture count multiplied by number of connections, or similar approach.	Water utility policy does not require customer metering; flat or fixed fee billing is employed. Some metered accounts exist in parts of the system (pilot areas or District Metered Areas) with consumption read periodically or recorded on portable dataloggers over one, three, or seven day periods. Data from these sample meters are used to infer consumption for the total customer population. Site specific estimation methods are used for unusual buildings/water uses.	Conditions between 2 and 4	Water utility policy does require metering and volume based billing in general. However, a liberal amount of exemptions and a lack of clearly written and communicated procedures result in up to 20% of billed accounts believed to be unmetered by exemption; or the water utility is in transition to becoming fully metered, and a large number of customers remain unmetered. A rough estimate of the annual consumption for all unmetered accounts is included in the annual water audit, with no inspection of individual unmetered accounts.	Conditions between 4 and 6	Water utility policy does require metering and volume based billing but established exemptions exist for a portion of accounts such as municipal buildings. As many as 15% of billed accounts are unmetered due to this exemption or meter installation difficulties. Only a group estimate of annual consumption for all unmetered accounts is included in the annual water audit, with no inspection of individual unmetered accounts.	Conditions between 6 and 8	Water utility policy does require metering and volume based billing for all customer accounts. However, less than 5% of billed accounts remain unmetered because meter installation is hindered by unusual circumstances. The goal is to minimize the number of unmetered accounts. Reliable estimates of consumption are obtained for these unmetered accounts via site specific estimation methods.	Conditions between 8 and 10	Water utility policy does require metering and volume based billing for all customer accounts. Less than 2% of billed accounts are unmetered and exist because meter installation is hindered by unusual circumstances. The goal exists to minimize the number of unmetered accounts to the extent that is economical. Reliable estimates of consumption are obtained at these accounts via site specific estimation methods.
Improvements to attain higher data grading for "Billed Unmetered Consumption" component:		to qualify for 2: Conduct research and evaluate cost/benefit of a new water utility policy to require metering of the customer population; thereby greatly reducing or eliminating unmetered accounts. Conduct pilot metering project by installing water meters in small sample of customer accounts and periodically reading the meters or datalogging the water consumption over one, three, or seven day periods.	to qualify for 4: Implement a new water utility policy requiring customer metering. Launch or expand pilot metering study to include several different meter types, which will provide data for economic assessment of full scale metering options. Assess sites with access difficulties to devise means to obtain water consumption volumes. Begin customer meter installation.		to qualify for 6: Refine policy and procedures to improve customer metering participation for all but solidly exempt accounts. Assign staff resources to review billing records to identify errant unmetered properties. Specify metering needs and funding requirements to install sufficient meters to significant reduce the number of unmetered accounts		to qualify for 8: Push to install customer meters on a full scale basis. Refine metering policy and procedures to ensure that all accounts, including municipal properties, are designated for meters. Plan special efforts to address "hard-to-access" accounts. Implement procedures to obtain a reliable consumption estimate for the remaining few unmetered accounts awaiting meter installation.		to qualify for 10: Continue customer meter installation throughout the service area, with a goal to minimize unmetered accounts. Sustain the effort to investigate accounts with access difficulties, and devise means to install water meters or otherwise measure water consumption.		to maintain 10: Continue to refine estimation methods for unmetered consumption and explore means to establish metering, for as many billed remaining unmetered accounts as is economically feasible.
Unbilled metered:	select n/a if all billing-exempt consumption is unmetered.	Billing practices exempt certain accounts, such as municipal buildings, but written policies do not exist; and a reliable count of unbilled metered accounts is unavailable. Meter upkeep and meter reading on these accounts is rare and not considered a priority. Due to poor recordkeeping and lack of auditing, water consumption for all such accounts is purely guesstimated.	Billing practices exempt certain accounts, such as municipal buildings, but only scattered, dated written directives exist to justify this practice. A reliable count of unbilled metered accounts is unavailable. Sporadic meter replacement and meter reading occurs on an as-needed basis. The total annual water consumption for all unbilled, metered accounts is estimated based upon approximating the number of accounts and assigning consumption from actively billed accounts of same meter size.	Conditions between 2 and 4	Dated written procedures permit billing exemption for specific accounts, such as municipal properties, but are unclear regarding certain other types of accounts. Meter reading is given low priority and is sporadic. Consumption is quantified from meter readings where available. The total number of unbilled, unmetered accounts must be estimated along with consumption volumes.	Conditions between 4 and 6	Written policies regarding billing exemptions exist but adherence in practice is questionable. Metering and meter reading for municipal buildings is reliable but sporadic for other unbilled metered accounts. Periodic auditing of such accounts is conducted. Water consumption is quantified directly from meter readings where available, but the majority of the consumption is estimated.	Conditions between 6 and 8	Written policy identifies the types of accounts granted a billing exemption. Customer meter management and meter reading are considered secondary priorities, but meter reading is conducted at least annually to obtain consumption volumes for the annual water audit. High level auditing of billing records ensures that a reliable census of such accounts exists.	Conditions between 8 and 10	Clearly written policy identifies the types of accounts given a billing exemption, with emphasis on keeping such accounts to a minimum. Customer meter management and meter reading for these accounts is given proper priority and is reliably conducted. Regular auditing confirms this. Total water consumption for these accounts is taken from reliable readings from accurate meters.
Improvements to attain higher data grading for "Unbilled Metered Consumption" component:		to qualify for 2: Reassess the water utility's policy allowing certain accounts to be granted a billing exemption. Draft an outline of a new written policy for billing exemptions, with clear justification as to why any accounts should be exempt from billing, and with the intention to keep the number of such accounts to a minimum.	to qualify for 4: Review historic written directives and policy documents allowing certain accounts to be billing-exempt. Draft an outline of a written policy for billing exemptions, identify criteria that grants an exemption, with a goal of keeping this number of accounts to a minimum. Consider increasing the priority of reading meters on unbilled accounts at least annually.		to qualify for 6: Draft a new written policy regarding billing exemptions based upon consensus criteria allowing this occurrence. Assign resources to audit meter records and billing records to obtain census of unbilled metered accounts. Gradually include a greater number of these metered accounts to the routes for regular meter reading.		to qualify for 8: Communicate billing exemption policy throughout the organization and implement procedures that ensure proper account management. Conduct inspections of accounts confirmed in unbilled metered status and verify that accurate meters exist and are scheduled for routine meter readings. Gradually increase the number of unbilled metered accounts that are included in regular meter reading routes.		to qualify for 10: Ensure that meter management (meter accuracy testing, meter replacement) and meter reading activities for unbilled accounts are accorded the same priority as billed accounts. Establish ongoing annual auditing process to ensure that water consumption is reliably collected and provided to the annual water audit process.		to maintain 10: Reassess the utility's philosophy in allowing any water uses to go "unbilled". It is possible to meter and bill all accounts, even if the fee charged for water consumption is discounted or waived. Metering and billing all accounts ensures that water consumption is tracked and water waste from plumbing leaks is detected and minimized.
Unbilled unmetered:		Extent of unbilled, unmetered consumption is unknown due to unclear policies and poor recordkeeping. Total consumption is quantified based upon a purely subjective estimate.	Clear extent of unbilled, unmetered consumption is unknown, but a number of events are randomly documented each year, confirming existence of such consumption, but without sufficient documentation to quantify an accurate estimate of the annual volume consumed.	Conditions between 2 and 4	Extent of unbilled, unmetered consumption is partially known, and procedures exist to document certain events such as miscellaneous fire hydrant uses. Formulae is used to quantify the consumption from such events (time running multiplied by typical flowrate, multiplied by number of events).	Default value of 1.25% of system input volume is employed	Coherent policies exist for some forms of unbilled, unmetered consumption but others await closer evaluation. Reasonable recordkeeping for the managed uses exists and allows for annual volumes to be quantified by inference, but unsupervised uses are guesstimated.	Conditions between 6 and 8	Clear policies and good recordkeeping exist for some uses (ex: water used in periodic testing of unmetered fire connections), but other uses (ex: miscellaneous uses of fire hydrants) have limited oversight. Total consumption is a mix of well quantified use such as from formulae (time running multiplied by typical flow, multiplied by number of events) or temporary meters, and relatively subjective estimates of less regulated use.	Conditions between 8 and 10	Clear policies exist to identify permitted use of water in unbilled, unmetered fashion, with the intention of minimizing this type of consumption. Good records document each occurrence and consumption is quantified via formulae (time running multiplied by typical flow, multiplied by number of events) or use of temporary meters.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Unbilled Unmetered Consumption" component:		to qualify for 5: Utilize the accepted default value of 1.25% of the volume of water supplied as an expedient means to gain a reasonable quantification of this use. to qualify for 2: Establish a policy regarding what water uses should be allowed to remain as unbilled and unmetered. Consider tracking a small sample of one such use (ex: fire hydrant flushings).	to qualify for 5: Utilize accepted default value of 1.25% of the volume of water supplied as an expedient means to gain a reasonable quantification of this use. to qualify for 4: Evaluate the documentation of events that have been observed. Meet with user groups (ex: for fire hydrants - fire departments, contractors to ascertain their need and/or volume requirements for water from fire hydrants).		to qualify for 5: Utilize accepted default value of 1.25% of the volume of water supplied as an expedient means to gain a reasonable quantification of all such use. This is particularly appropriate for water utilities who are in the early stages of the water auditing process, and should focus on other components since the volume of unbilled, umetered consumption is usually a relatively small quatity component, and other larger-quantity components should take priority.	to qualify for 6 or greater: Finalize policy and begin to conduct field checks to better establish and quantify such usage. Proceed if top-down audit exists and/or a great volume of such use is suspected.	to qualify for 8: Assess water utility policy and procedures for various unmetered usages. For example, ensure that a policy exists and permits are issued for use of fire hydrants by persons outside of the utility. Create written procedures for use and documentation of fire hydrants by water utility personnel. Use same approach for other types of unbilled, unmetered water usage.		to qualify for 10: Refine written procedures to ensure that all uses of unbilled, unmetered water are overseen by a structured permitting process managed by water utility personnel. Reassess policy to determine if some of these uses have value in being converted to billed and/or metered status.		to maintain 10: Continue to refine policy and procedures with intention of reducing the number of allowable uses of water in unbilled and unmetered fashion. Any uses that can feasibly become billed and metered should be converted eventually.
APPARENT LOSSES											
Unauthorized consumption:		Extent of unauthorized consumption is unknown due to unclear policies and poor recordkeeping. Total unauthorized consumption is guesstimated.	Unauthorized consumption is a known occurrence, but its extent is a mystery. There are no requirements to document observed events, but periodic field reports capture some of these occurrences. Total unauthorized consumption is approximated from this limited data.	conditions between 2 and 4	Procedures exist to document some unauthorized consumption such as observed unauthorized fire hydrant openings. Use formulae to quantify this consumption (time running multiplied typical flowrate, multiplied by number of events).	Default value of 0.25% of volume of water supplied is employed	Coherent policies exist for some forms of unauthorized consumption (more than simply fire hydrant misuse) but others await closer evaluation. Reasonable surveillance and recordkeeping exist for occurrences that fall under the policy. Volumes quantified by inference from these records.	Conditions between 6 and 8	Clear policies and good auditable recordkeeping exist for certain events (ex: tampering with water meters, illegal bypasses of customer meters); but other occurrences have limited oversight. Total consumption is a combination of volumes from formulae (time x typical flow) and subjective estimates of unconfirmed consumption.	Conditions between 8 and 10	Clear policies exist to identify all known unauthorized uses of water. Staff and procedures exist to provide enforcement of policies and detect violations. Each occurrence is recorded and quantified via formulae (estimated time running multiplied by typical flow) or similar methods. All records and calculations should exist in a form that can be audited by a third party.
Improvements to attain higher data grading for "Unauthorized Consumption" component:		to qualify for 5: Use accepted default of 0.25% of volume of water supplied. to qualify for 2: Review utility policy regarding what water uses are considered unauthorized, and consider tracking a small sample of one such occurrence (ex: unauthorized fire hydrant openings)	to qualify for 5: Use accepted default of 0.25% of system input volume to qualify for 4: Review utility policy regarding what water uses are considered unauthorized, and consider tracking a small sample of one such occurrence (ex: unauthorized fire hydrant openings)		to qualify for 5: Utilize accepted default value of 0.25% of volume of water supplied as an expedient means to gain a reasonable quantification of all such use. This is particularly appropriate for water utilities who are in the early stages of the water auditing process.	to qualify for 6 or greater: Finalize policy updates to clearly identify the types of water consumption that are authorized from those usages that fall outside of this policy and are, therefore, unauthorized. Begin to conduct regular field checks. Proceed if the top-down audit already exists and/or a great volume of such use is suspected.	to quality for 8: Assess water utility policies to ensure that all known occurrences of unauthorized consumption are outlawed, and that appropriate penalties are prescribed. Create written procedures for detection and documentation of various occurrences of unauthorized consumption as they are uncovered.		to qualify for 10: Refine written procedures and assign staff to seek out likely occurrences of unauthorized consumption. Explore new locking devices, monitors and other technologies designed to detect and thwart unauthorized consumption.		to maintain 10: Continue to refine policy and procedures to eliminate any loopholes that allow or tacitly encourage unauthorized consumption. Continue to be vigilant in detection, documentation and enforcement efforts.
Customer metering inaccuracies:	select n/a only if the entire customer population is unmetered. In such a case the volume entered must be zero.	Customer meters exist, but with unorganized paper records on meters; no meter accuracy testing or meter replacement program for any size of retail meter. Metering workflow is driven chaotically with no proactive management. Loss volume due to aggregate meter inaccuracy is guesstimated.	Poor recordkeeping and meter oversight is recognized by water utility management who has allotted staff and funding resources to organize improved recordkeeping and start meter accuracy testing. Existing paper records gathered and organized to provide cursory disposition of meter population. Customer meters are tested for accuracy only upon customer request.	Conditions between 2 and 4	Reliable recordkeeping exists; meter information is improving as meters are replaced. Meter accuracy testing is conducted annually for a small number of meters (more than just customer requests, but less than 1% of inventory). A limited number of the oldest meters are replaced each year. Inaccuracy volume is largely an estimate, but refined based upon limited testing data.	Conditions between 4 and 6	A reliable electronic recordkeeping system for meters exists. The meter population includes a mix of new high performing meters and dated meters with suspect accuracy. Routine, but limited, meter accuracy testing and meter replacement occur. Inaccuracy volume is quantified using a mix of reliable and less certain data.	Conditions between 6 and 8	Ongoing meter replacement and accuracy testing result in highly accurate customer meter population. Testing is conducted on samples of meters of varying age and accumulated volume of throughput to determine optimum replacement time for various types of meters.	Ongoing meter replacement and accuracy testing result in highly accurate customer meter population. Statistically significant number of meters are tested in audit year. This testing is conducted on samples of meters of varying age and accumulated volume of throughput to determine optimum replacement time for these meters.	Good records of all active customer meters exist and include as a minimum: meter number, account number/location, type, size and manufacturer. Ongoing meter replacement occurs according to a targeted and justified basis. Regular meter accuracy testing gives a reliable measure of composite inaccuracy volume for the customer meter population. New metering technology is embraced to keep overall accuracy improving. Procedures are reviewed by a third party knowledgeable in the M36 methodology.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Customer meter inaccuracy volume" component:	If n/a is selected because the customer meter population is unmetered, consider establishing a new policy to meter the customer population and employ water rates based upon metered volumes.	to qualify for 2: Gather available meter purchase records. Conduct testing on a small number of meters believed to be the most inaccurate. Review staffing needs of the metering group and budget for necessary resources to better organize meter management.	to qualify for 4: Implement a reliable record keeping system for customer meter histories, preferably using electronic methods typically linked to, or part of, the Customer Billing System or Customer Information System. Expand meter accuracy testing to a larger group of meters.		to qualify for 6: Standardize the procedures for meter recordkeeping within an electronic information system. Accelerate meter accuracy testing and meter replacements guided by testing results.		to qualify for 8: Expand annual meter accuracy testing to evaluate a statistically significant number of meter makes/models. Expand meter replacement program to replace statistically significant number of poor performing meters each year.		to qualify for 9: Continue efforts to manage meter population with reliable recordkeeping. Test a statistically significant number of meters each year and analyze test results in an ongoing manner to serve as a basis for a target meter replacement strategy based upon accumulated volume throughput.	to qualify for 10: Continue efforts to manage meter population with reliable recordkeeping, meter testing and replacement. Evaluate new meter types and install one or more types in 5-10 customer accounts each year in order to pilot improving metering technology.	to maintain 10: Increase the number of meters tested and replaced as justified by meter accuracy test data. Continually monitor development of new metering technology and Advanced Metering Infrastructure (AMI) to grasp opportunities for greater accuracy in metering of water flow and management of customer consumption data.
Systematic Data Handling Errors:	Note: all water utilities incur some amount of this error. Even in water utilities with unmetered customer populations and fixed rate billing, errors occur in annual billing tabulations. Enter a positive value for the volume and select a grading.	Policies and procedures for activation of new customer water billing accounts are vague and lack accountability. Billing data is maintained on paper records which are not well organized. No auditing is conducted to confirm billing data handling efficiency. An unknown number of customers escape routine billing due to lack of billing process oversight.	Policy and procedures for activation of new customer accounts and oversight of billing records exist but need refinement. Billing data is maintained on paper records or insufficiently capable electronic database. Only periodic unstructured auditing work is conducted to confirm billing data handling efficiency. The volume of unbilled water due to billing lapses is a guess.	Conditions between 2 and 4	Policy and procedures for new account activation and oversight of billing operations exist but needs refinement. Computerized billing system exists, but is dated or lacks needed functionality. Periodic, limited internal audits conducted and confirm with approximate accuracy the consumption volumes lost to billing lapses.	Conditions between 4 and 6	Policy and procedures for new account activation and oversight of billing operations is adequate and reviewed periodically. Computerized billing system is in use with basic reporting available. Any effect of billing adjustments on measured consumption volumes is well understood. Internal checks of billing data error conducted annually. Reasonably accurate quantification of consumption volume lost to billing lapses is obtained.	Conditions between 6 and 8	New account activation and billing operations policy and procedures are reviewed at least biannually. Computerized billing system includes an array of reports to confirm billing data and system functionality. Checks are conducted routinely to flag and explain zero consumption accounts. Annual internal checks conducted with third party audit conducted at least once every five years. Accountability checks flag billing lapses. Consumption lost to billing lapses is well quantified and reducing year-by-year.	Conditions between 8 and 10	Sound written policy and procedures exist for new account activation and oversight of customer billing operations. Robust computerized billing system gives high functionality and reporting capabilities which are utilized, analyzed and the results reported each billing cycle. Assessment of policy and data handling errors are conducted internally and audited by third party at least once every three years, ensuring consumption lost to billing lapses is minimized and detected as it occurs.
Improvements to attain higher data grading for "Systematic Data Handling Error volume" component:		to qualify for 2: Draft written policy and procedures for activating new water billing accounts and oversight of billing operations. Investigate and budget for computerized customer billing system. Conduct initial audit of billing records by flow-charting the basic business processes of the customer account/billing function.	to qualify for 4: Finalize written policy and procedures for activation of new billing acocunts and overall billing operations management. Implement a computerized customer billing system. Conduct initial audit of billing records as part of this process.		to qualify for 6: Refine new account activation and billing operations procedures and ensure consistency with the utility policy regarding billing, and minimize opportunity for missed billings. Upgrade or replace customer billing system for needed functionality - ensure that billing adjustments don't corrupt the value of consumption volumes. Procedurize internal annual audit process.		to qualify for 8: Formalize regular review of new account activation process and general billing practices. Enhance reporting capability of computerized billing system. Formalize regular auditing process to reveal scope of data handling error. Plan for periodic third party audit to occur at least once every five years.		to qualify for 10: Close policy/procedure loopholes that allow some customer accounts to go unbilled, or data handling errors to exist. Ensure that billing system reports are utilized, analyzed and reported every billing cycle. Ensure that internal and third party audits are conducted at least once every three years.		to maintain 10: Stay abreast of customer information management developments and innovations. Monitor developments of Advanced Metering Infrastructure (AMI) and integrate technology to ensure that customer endpoint information is well-monitored and errors/lapses are at an economic minimum.
SYSTEM DATA											
Length of mains:		Poorly assembled and maintained paper as-built records of existing water main installations makes accurate determination of system pipe length impossible. Length of mains is guesstimated.	Paper records in poor or uncertain condition (no annual tracking of installations & abandonments). Poor procedures to ensure that new water mains installed by developers are accurately documented.	Conditions between 2 and 4	Sound written policy and procedures exist for documenting new water main installations, but gaps in management result in a uncertain degree of error in tabulation of mains length.	Conditions between 4 and 6	Sound written policy and procedures exist for permitting and commissioning new water mains. Highly accurate paper records with regular field validation; or electronic records and asset management system in good condition. Includes system backup.	Conditions between 6 and 8	Sound written policy and procedures exist for permitting and commissioning new water mains. Electronic recordkeeping such as a Geographical Information System (GIS) and asset management system are used to store and manage data.	Conditions between 8 and 10	Sound written policy exists for managing water mains extensions and replacements. Geographic Information System (GIS) data and asset management database agree and random field validation proves truth of databases. Records of annual field validation should be available for review.
Improvements to attain higher data grading for "Length of Water Mains" component:		to qualify for 2: Assign personnel to inventory current as-built records and compare with customer billing system records and highway plans in order to verify poorly documented pipelines. Assemble policy documents regarding permitting and documentation of water main installations by the utility and building developers; identify gaps in procedures that result in poor documentation of new water main installations.	to qualify for 4: Complete inventory of paper records of water main installations for several years prior to audit year. Review policy and procedures for commissioning and documenting new water main installation.		to qualify for 6: Finalize updates/improvements to written policy and procedures for permitting/commissioning new main installations. Confirm inventory of records for five years prior to audit year; correct any errors or omissions.		to qualify for 8: Launch random field checks of limited number of locations. Convert to electronic database such as a Geographic Information System (GIS) with backup as justified. Develop written policy and procedures.		to qualify for 10: Link Geographic Information System (GIS) and asset management databases, conduct field verification of data. Record field verification information at least annually.		to maintain 10: Continue with standardization and random field validation to improve the completeness and accuracy of the system.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Number of active AND inactive service connections:		Vague permitting (of new service connections) policy and poor paper recordkeeping of customer connections/billings result in suspect determination of the number of service connections, which may be 10-15% in error from actual count.	General permitting policy exists but paper records, procedural gaps, and weak oversight result in questionable total for number of connections, which may vary 5-10% of actual count.	Conditions between 2 and 4	Written account activation policy and procedures exist, but with some gaps in performance and oversight. Computerized information management system is being brought online to replace dated paper recordkeeping system. Reasonably accurate tracking of service connection installations & abandonments; but count can be up to 5% in error from actual total.	Conditions between 4 and 6	Written new account activation and overall billing policies and procedures are adequate and reviewed periodically. Computerized information management system is in use with annual installations & abandonments totaled. Very limited field verifications and audits. Error in count of number of service connections is believed to be no more than 3%.	Conditions between 6 and 8	Policies and procedures for new account activation and overall billing operations are written, well-structured and reviewed at least biannually. Well managed computerized information management system exists and routine, periodic field checks and internal system audits are conducted. Counts of connections are no more than 2% in error.	Conditions between 8 and 10	Sound written policy and well managed and audited procedures ensure reliable management of service connection population. Computerized information management system, Customer Billing System, and Geographic Information System (GIS) information agree; field validation proves truth of databases. Count of connections recorded as being in error is less than 1% of the entire population.
Improvements to attain higher data grading for "Number of Active and Inactive Service Connections" component:	**Note: The number of Service Connections does <u>not</u> include fire hydrant leads/lines connecting the hydrant to the water main**	<u>to qualify for 2</u>: Draft new policy and procedures for new account activation and overall billing operations. Research and collect paper records of installations & abandonments for several years prior to audit year.	<u>to qualify for 4</u>: Refine policy and procedures for new account activation and overall billing operations. Research computerized recordkeeping system (Customer Information System or Customer Billing System) to improve documentation format for service connections.		<u>to qualify for 6</u>: Refine procedures to ensure consistency with new account activation and overall billing policy to establish new service connections or decommission existing connections. Improve process to include all totals for at least five years prior to audit year.		<u>to qualify for 8</u>: Formalize regular review of new account activation and overall billing operations policies and procedures. Launch random field checks of limited number of locations. Develop reports and auditing mechanisms for computerized information management system.		<u>to qualify for 10</u>: Close any procedural loopholes that allow installations to go undocumented. Link computerized information management system with Geographic Information System (GIS) and formalize field inspection and information system auditing processes. Documentation of new or decommissioned service connections encounters several levels of checks and balances.		<u>to maintain 10</u>: Continue with standardization and random field validation to improve knowledge of system.
Average length of customer service line:	Note: if customer water meters are located outside of the customer building next to the curb stop or boundary separating utility/customer responsibility, then the auditor should answer "Yes" to the question on the Reporting Worksheet asking about this. If the answer is Yes, the grading description listed under the Grading of 10(a) will be followed, with a value of zero automatically entered at a Grading of 10. See the Service Connection Diagram worksheet for a visual presentation of this distance.	Gradings 1-9 apply if customer properties are unmetered, if customer meters exist and are located inside the customer building premises, or if the water utility owns and is responsible for the entire service connection piping from the water main to the customer building. In any of these cases the average distance between the curb stop or boundary separating utility/customer responsibility for service connection piping, and the typical first point of use (ex: faucet) or the customer meter must be quantified. Gradings of 1-9 are used to grade the validity of the means to quantify this value. (See the "Service Connection Diagram" worksheet)									<u>Either of two conditions can be met for a grading of 10</u>: a) Customer water meters exist outside of customer buildings next to the curb stop or boundary separating utility/customer responsibility for service connection piping. If so, answer "Yes" to the question on the Reporting Working asking about this condition. A value of zero and a Grading of 10 are automatically entered in the Reporting Worksheet . b). Meters exist inside customer buildings, or properties are unmetered. In either case, answer "No" to the Reporting Worksheet question on meter location, and enter a distance determined by the auditor. For a Grading of 10 this value must be a very reliable number from a Geographic Information System (GIS) and confirmed by a statistically valid number of field checks.
		Vague policy exists to define the delineation of water utility ownership and customer ownership of the service connection piping. Curb stops are perceived as the breakpoint but these have not been well-maintained or documented. Most are buried or obscured. Their location varies widely from site-to-site, and estimating this distance is arbitrary due to the unknown location of many curb stops.	Policy requires that the curb stop serves as the delineation point between water utility ownership and customer ownership of the service connection piping. The piping from the water main to the curb stop is the property of the water utility; and the piping from the curb stop to the customer building is owned by the customer. Curb stop locations are not well documented and the average distance is based upon a limited number of locations measured in the field.	Conditions between 2 and 4	Good policy requires that the curb stop serves as the delineation point between water utility ownership and customer ownership of the service connection piping. Curb stops are generally installed as needed and are reasonably documented. Their location varies widely from site-to-site, and an estimate of this distance is hindered by the availability of paper records of limited accuracy.	Conditions between 4 and 6	Clear written policy exists to define utility/customer responsibility for service connection piping. Accurate, well-maintained paper or basic electronic recordkeeping system exists. Periodic field checks confirm piping lengths for a sample of customer properties.	Conditions between 6 and 8	Clearly worded policy standardizes the location of curb stops and meters, which are inspected upon installation. Accurate and well maintained electronic records exist with periodic field checks to confirm locations of service lines, curb stops and customer meter pits. An accurate number of customer properties from the customer billing system allows for reliable averaging of this length.	Conditions between 8 and 10	
Improvements to attain higher data grading for "Average Length of Customer Service Line" component:		<u>to qualify for 2</u>: Research and collect paper records of service line installations. Inspect several sites in the field using pipe locators to locate curb stops. Obtain the length of this small sample of connections in this manner.	<u>to qualify for 4</u>: Formalize and communicate policy delineating utility/customer responsibilities for service connection piping. Assess accuracy of paper records by field inspection of a small sample of service connections using pipe locators as needed. Research the potential migration to a computerized information management system to store service connection data.		<u>to qualify for 6</u>: Establish coherent procedures to ensure that policy for curb stop, meter installation and documentation is followed. Gain consensus within the water utility for the establishment of a computerized information management system.		<u>to qualify for 8</u>: Implement an electronic means of recordkeeping, typically via a customer information system, customer billing system, or Geographic Information System (GIS). Standardize the process to conduct field checks of a limited number of locations.		<u>to qualify for 10</u>: Link customer information management system and Geographic Information System (GIS), standardize process for field verification of data.		<u>to maintain 10</u>: Continue with standardization and random field validation to improve knowledge of service connection configurations and customer meter locations.
Average operating pressure:		Available records are poorly assembled and maintained paper records of supply pump characteristics and water distribution system operating conditions. Average pressure is guesstimated based upon this information and ground elevations from crude topographical maps. Widely varying distribution system pressures due to undulating terrain, high system head loss and weak/erratic pressure controls further compromise the validity of the average pressure calculation.	Limited telemetry monitoring of scattered pumping station and water storage tank sites provides some static pressure data, which is recorded in handwritten logbooks. Pressure data is gathered at individual sites only when low pressure complaints arise. Average pressure is determined by averaging relatively crude data, and is affected by significant variation in ground elevations, system head loss and gaps in pressure controls in the distribution system.	Conditions between 2 and 4	Effective pressure controls separate different pressure zones; moderate pressure variation across the system, occasional open boundary valves are discovered that breech pressure zones. Basic telemetry monitoring of the distribution system logs pressure data electronically. Pressure data gathered by gauges or dataloggers at fire hydrants or buildings when low pressure complaints arise, and during fire flow tests and system flushing. Reliable topographical data exists. Average pressure is calculated using this mix of data.	Conditions between 4 and 6	Reliable pressure controls separate distinct pressure zones; only very occasional open boundary valves are encountered that breech pressure zones. Well-covered telemetry monitoring of the distribution system (not just pumping at source treatment plants or wells) logs extensive pressure data electronically. Pressure gathered by gauges/dataloggers at fire hydrants and buildings when low pressure complaints arise, and during fire flow tests and system flushing. Average pressure is determined by using this mix of reliable data.	Conditions between 6 and 8	Well-managed, discrete pressure zones exist with generally predictable pressure fluctuations. A current full-scale SCADA System or similar realtime monitoring system exists to monitor the water distribution system and collect data, including real time pressure readings at representative sites across the system. The average system pressure is determined from reliable monitoring system data.	Conditions between 8 and 10	Well-managed pressure districts/zones, SCADA System and hydraulic model exist to give very precise pressure data across the water distribution system. Average system pressure is reliably calculated from extensive, reliable, and cross-checked data. Calculations are reported on an annual basis as a minimum.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Average Operating Pressure" component:		to qualify for 2: Employ pressure gauging and/or datalogging equipment to obtain pressure measurements from fire hydrants. Locate accurate topographical maps of service area in order to confirm ground elevations. Research pump data sheets to find pump pressure/flow characteristics	to qualify for 4: Formalize a procedure to use pressure gauging/datalogging equipment to gather pressure data during various system events such as low pressure complaints, or operational testing. Gather pump pressure and flow data at different flow regimes. Identify faulty pressure controls (pressure reducing valves, altitude valves, partially open boundary valves) and plan to properly configure pressure zones. Make all pressure data from these efforts available to generate system-wide average pressure.		to qualify for 6: Expand the use of pressure gauging/datalogging equipment to gather scattered pressure data at a representative set of sites, based upon pressure zones or areas. Utilize pump pressure and flow data to determine supply head entering each pressure zone or district. Correct any faulty pressure controls (pressure reducing valves, altitude valves, partially open boundary valves) to ensure properly configured pressure zones. Use expanded pressure dataset from these activities to generate system-wide average pressure.		to qualify for 8: Install a Supervisory Control and Data Acquisition (SCADA) System, or similar realtime monitoring system, to monitor system parameters and control operations. Set regular calibration schedule for instrumentation to insure data accuracy. Obtain accurate topographical data and utilize pressure data gathered from field surveys to provide extensive, reliable data for pressure averaging.		to qualify for 10: Annually, obtain a system-wide average pressure value from the hydraulic model of the distribution system that has been calibrated via field measurements in the water distribution system and confirmed in comparisons with SCADA System data.		to maintain 10: Continue to refine the hydraulic model of the distribution system and consider linking it with SCADA System for real-time pressure data calibration, and averaging.

Grading >>>	n/a	1	2	3	4	5	6	7	8	9	10
COST DATA											
Total annual cost of operating water system:		Incomplete paper records and lack of financial accounting documentation on many operating functions makes calculation of water system operating costs a pure guesstimate	Reasonably maintained, but incomplete, paper or electronic accounting provides data to estimate the major portion of water system operating costs.	Conditions between 2 and 4	Electronic, industry-standard cost accounting system in place. However, gaps in data are known to exist, periodic internal reviews are conducted but not a structured financial audit.	Conditions between 4 and 6	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited periodically by utility personnel, but not a Certified Public Accountant (CPA).	Conditions between 6 and 8	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited at least annually by utility personnel, and at least once every three years by third-party CPA.	Conditions between 8 and 10	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited annually by utility personnel and annually also by third-party CPA.
Improvements to attain higher data grading for "Total Annual Cost of Operating the Water System" component:		to qualify for 2: Gather available records, institute new financial accounting procedures to regularly collect and audit basic cost data of most important operations functions.	to qualify for 4: Implement an electronic cost accounting system, structured according to accounting standards for water utilities		to qualify for 6: Establish process for periodic internal audit of water system operating costs; identify cost data gaps and institute procedures for tracking these outstanding costs.		to qualify for 8: Standardize the process to conduct routine financial audit on an annual basis. Arrange for CPA audit of financial records at least once every three years.		to qualify for 10: Standardize the process to conduct a third-party financial audit by a CPA on an annual basis.		to maintain 10: Maintain program, stay abreast of expenses subject to erratic cost changes and long-term cost trend, and budget/track costs proactively
Customer retail unit cost (applied to Apparent Losses):	Customer population unmetered, and/or only a fixed fee is charged for consumption.	Antiquated, cumbersome water rate structure is used, with periodic historic amendments that were poorly documented and implemented; resulting in classes of customers being billed inconsistent charges. The actual composite billing rate likely differs significantly from the published water rate structure, but a lack of auditing leaves the degree of error indeterminate.	Dated, cumbersome water rate structure, not always employed consistently in actual billing operations. The actual composite billing rate is known to differ from the published water rate structure, and a reasonably accurate estimate of the degree of error is determined, allowing a composite billing rate to be quantified.	Conditions between 2 and 4	Straight-forward water rate structure in use, but not updated in several years. Billing operations reliably employ the rate structure. The composite billing rate is derived from a single customer class such as residential customer accounts, neglecting the effect of different rates from varying customer classes.	Conditions between 4 and 6	Clearly written, up-to-date water rate structure is in force and is applied reliably in billing operations. Composite customer rate is determined using a weighted average residential rate using volumes of water in each rate block.	Conditions between 6 and 8	Effective water rate structure is in force and is applied reliably in billing operations. Composite customer rate is determined using a weighted average composite consumption rate, which includes residential, commercial, industrial, institutional (CII), and any other distinct customer classes within the water rate structure.	Conditions between 8 and 10	Current, effective water rate structure is in force and applied reliably in billing operations. The rate structure and calculations of composite rate - which includes residential, commercial, industrial, institutional (CII), and other distinct customer classes - are reviewed by a third party knowledgeable in the M36 methodology at least once every five years.
Improvements to attain higher data grading for "Customer Retail Unit Cost" component:		to qualify for 2: Formalize the process to implement water rates, including a secure documentation procedure. Create a current, formal water rate document and gain approval from all stakeholders.	to qualify for 4: Review the water rate structure and update/formalize as needed. Assess billing operations to ensure that actual billing operations incorporate the established water rate structure.		to qualify for 6: Evaluate volume of water used in each usage block by residential users. Multiply volumes by full rate structure.	Launch effort to fully meter the customer population and charge rates based upon water volumes	to qualify for 8: Evaluate volume of water used in each usage block by all classifications of users. Multiply volumes by full rate structure.		to qualify for 10: Conduct a periodic third-party audit of water used in each usage block by all classifications of users. Multiply volumes by full rate structure.		to maintain 10: Keep water rate structure current in addressing the water utility's revenue needs. Update the calculation of the customer unit rate as new rate components, customer classes, or other components are modified.
Variable production cost (applied to Real Losses):	Note: if the water utility purchases/imports its entire water supply, then enter the unit purchase cost of the bulk water supply in the Reporting Worksheet with a grading of 10	Incomplete paper records and lack of documentation on primary operating functions (electric power and treatment costs most importantly) makes calculation of variable production costs a pure guesstimate	Reasonably maintained, but incomplete, paper or electronic accounting provides data to roughly estimate the basic operations costs (pumping power costs and treatment costs) and calculate a unit variable production cost.	Conditions between 2 and 4	Electronic, industry-standard cost accounting system in place. Electric power and treatment costs are reliably tracked and allow accurate weighted calculation of unit variable production costs based on these two inputs and water imported purchase costs (if applicable). All costs are audited internally on a periodic basis.	Conditions between 4 and 6	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Pertinent additional costs beyond power, treatment and water imported purchase costs (if applicable) such as liability, residuals management, wear and tear on equipment, impending expansion of supply, are included in the unit variable production cost, as applicable. The data is audited at least annually by utility personnel.	Conditions between 6 and 8	Reliable electronic, industry-standard cost accounting system in place, with all pertinent primary and secondary variable production and water imported purchase (if applicable) costs tracked. The data is audited at least annually by utility personnel, and at least once every three years by a third-party knowledgeable in the M36 methodology.	Conditions between 8 and 10	Either of two conditions can be met to obtain a grading of 10: 1) Third party CPA audit of all pertinent primary and secondary variable production and water imported purchase (if applicable) costs on an annual basis. or: 2) Water supply is entirely purchased as bulk water imported, and the unit purchase cost - including all applicable marginal supply costs - serves as the variable production cost. If all applicable marginal supply costs are not included in this figure, a grade of 10 should not be selected.
Improvements to attain higher data grading for "Variable Production Cost" component:		to qualify for 2: Gather available records, institute new procedures to regularly collect and audit basic cost data and most important operations functions.	to qualify for 4: Implement an electronic cost accounting system, structured according to accounting standards for water utilities		to qualify for 6: Formalize process for regular internal audits of production costs. Assess whether additional costs (liability, residuals management, equipment wear, impending infrastructure expansion) should be included to calculate a more representative variable production cost.		to qualify for 8: Formalize the accounting process to include direct cost components (power, treatment) as well as indirect cost components (liability, residuals management, etc.) Arrange to conduct audits by a knowledgable third-party at least once every three years.		to qualify for 10: Standardize the process to conduct a third-party financial audit by a CPA on an annual basis.		to maintain 10: Maintain program, stay abreast of expenses subject to erratic cost changes and budget/track costs proactively

Average Length of Customer Service Line

The three figures shown on this worksheet display the assignment of the Average Length of Customer Service Line, Lp, for the three most common piping configurations.

Figure 1 shows the configuration of the water meter outside of the customer building next to the curb stop valve. In this configuration Lp = 0 since the distance between the curb stop and the customer metering point is essentially zero.

Figure 2 shows the configuration of the customer water meter located inside the customer building, where Lp is the distance from the curb stop to the water meter.

Figure 3 shows the configuration of an unmetered customer building , where Lp is the distance from the curb stop to the first point of customer water consumption, or, more simply, the building line.

In any water system the Lp will vary notably in a community of different structures, therefore the average Lp value is used and this should be approximated or calculated if a sample of service line measurements has been gathered.

Click for more information

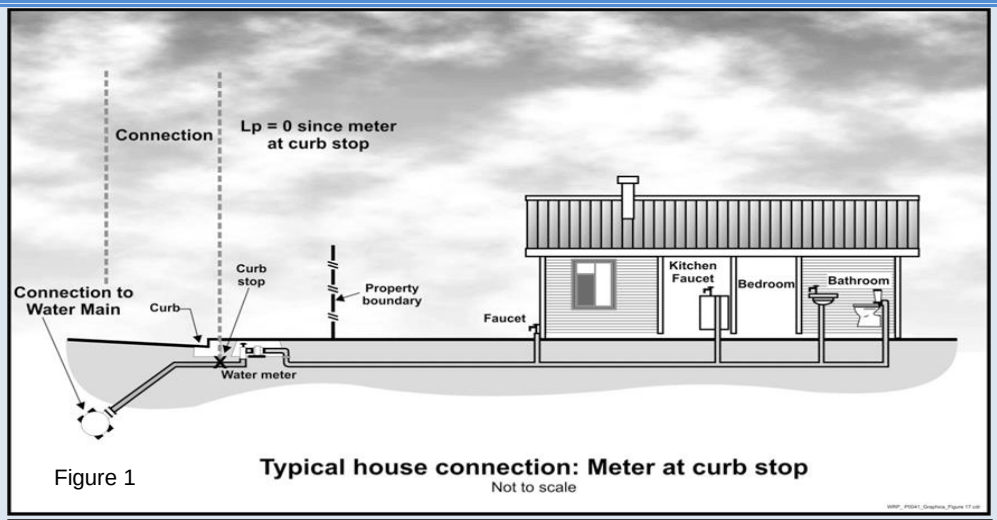


Figure 1 **Typical house connection: Meter at curb stop**
Not to scale

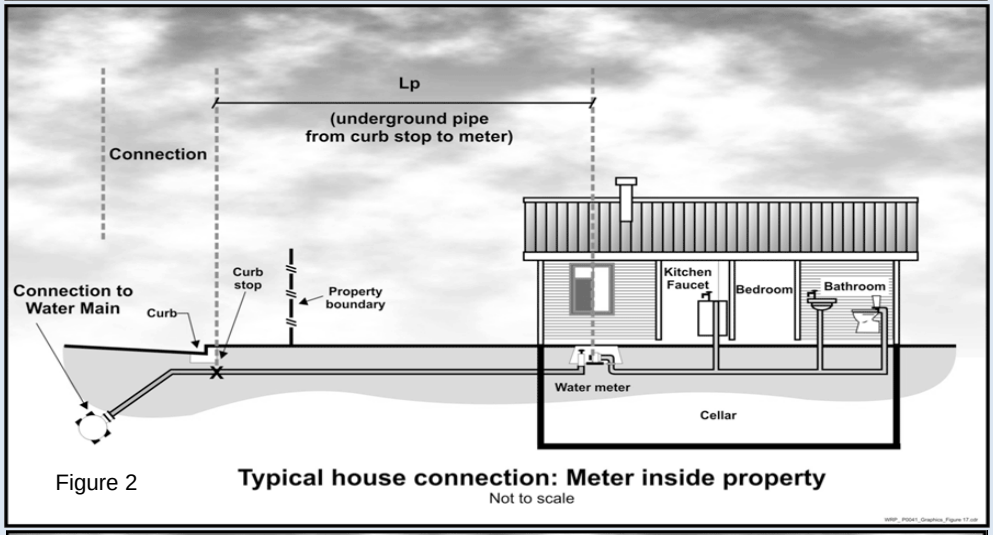


Figure 2 **Typical house connection: Meter inside property**
Not to scale

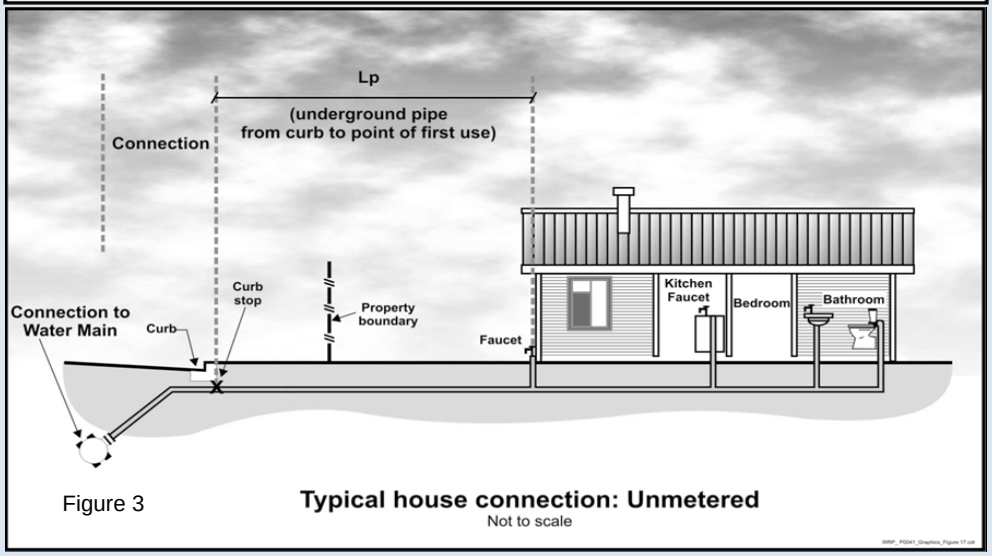
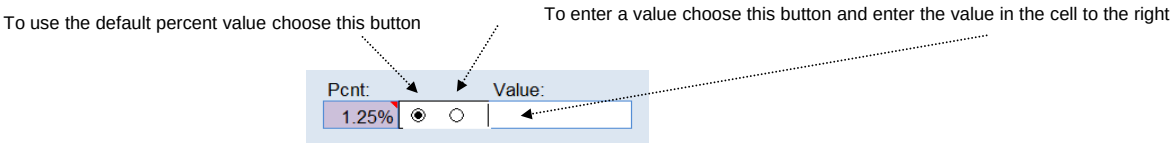


Figure 3 **Typical house connection: Unmetered**
Not to scale

Item Name	Description
Apparent Losses Find	= unauthorized consumption + customer metering inaccuracies + systematic data handling errors Apparent Losses include all types of inaccuracies associated with customer metering (worn meters as well as improperly sized meters or wrong type of meter for the water usage profile) as well as systematic data handling errors (meter reading, billing, archiving and reporting), plus unauthorized consumption (theft or illegal use). NOTE: Over-estimation of Apparent Losses results in under-estimation of Real Losses. Under-estimation of Apparent Losses results in over-estimation of Real Losses.
AUTHORIZED CONSUMPTION Find	= billed water exported + billed metered + billed unmetered + unbilled metered + unbilled unmetered consumption The volume of metered and/or unmetered water taken by registered customers, the water utility's own uses, and uses of others who are implicitly or explicitly authorized to do so by the water utility; for residential, commercial, industrial and public-minded purposes. Typical retail customers' consumption is tabulated usually from established customer accounts as billed metered consumption, or - for unmetered customers - billed unmetered consumption. These types of consumption, along with billed water exported, provide revenue potential for the water utility. **Be certain to tabulate the water exported volume as a separate component and do not "double-count" it by including in the billed metered consumption component as well as the water exported component.** Unbilled authorized consumption occurs typically in non-account uses, including water for fire fighting and training, flushing of water mains and sewers, street cleaning, watering of municipal gardens, public fountains, or similar public-minded uses. Occasionally these uses may be metered and billed (or charged a flat fee), but usually they are unmetered and unbilled. In the latter case, the water auditor may use a default value to estimate this quantity, or implement procedures for the reliable quantification of these uses. This starts with documenting usage events as they occur and estimating the amount of water used in each event. (See Unbilled unmetered consumption)
View Service Connection Diagram **Average length of customer service line** Find	This is the average length of customer service line, Lp, that is owned and maintained by the customer; from the point of ownership transfer to the customer water meter, or building line (if unmetered). The quantity is one of the data inputs for the calculation of Unavoidable Annual Real Losses (UARL), which serves as the denominator of the performance indicator: Infrastructure Leakage Index (ILI). The value of Lp is multiplied by the number of customer service connections to obtain a total length of customer owned piping in the system. The purpose of this parameter is to account for the unmetered service line infrastructure that is the responsibility of the customer for arranging repairs of leaks that occur on their lines. In many cases leak repairs arranged by customers take longer to be executed than leak repairs arranged by the water utility on utility-maintained piping. Leaks run longer - and lose more water - on customer-owned service piping, than utility owned piping. If the customer water meter exists near the ownership transfer point (usually the curb stop located between the water main and the customer premises) this distance is zero because the meter and transfer point are the same. This is the often encountered configuration of customer water meters located in an underground meter box or "pit" outside of the customer's building. The Free Water Audit Software asks a "Yes/No" question about the meter at this location. If the auditor selects "Yes" then this distance is set to zero and the data grading score for this component is set to 10. If water meters are typically located inside the customer premise/building, or properties are unmetered, it is up to the water auditor to estimate a system-wide average Lp length based upon the various customer land parcel sizes and building locations in the service area. Lp will be a shorter length in areas of high density housing, and a longer length in areas of low density housing and varied commercial and industrial buildings. General parcel demographics should be employed to obtain a composite average Lp length for the entire system. Refer to the "Service Connection Diagram" worksheet for a depiction of the service line/metering configurations that typically exist in water utilities. This worksheet gives guidance on the determination of the Average Length, Lp, for each configuration.
Average operating pressure Find	This is the average pressure in the distribution system that is the subject of the water audit. Many water utilities have a calibrated hydraulic model of their water distribution system. For these utilities, the hydraulic model can be utilized to obtain a very accurate quantity of average pressure. In the absence of a hydraulic model, the average pressure may be approximated by obtaining readings of static water pressure from a representative sample of fire hydrants or other system access points evenly located across the system. A weighted average of the pressure can be assembled; but be sure to take into account the elevation of the fire hydrants, which typically exist several feet higher than the level of buried water pipelines. If the water utility is compiling the water audit for the first time, the average pressure can be approximated, but with a low data grading. In subsequent years of auditing, effort should be made to improve the accuracy of the average pressure quantity. This will then qualify the value for a higher data grading.
Billed Authorized Consumption	All consumption that is billed and authorized by the utility. This may include both metered and unmetered consumption. See "Authorized Consumption" for more information.
Billed metered consumption Find	All metered consumption which is billed to retail customers, including all groups of customers such as domestic, commercial, industrial or institutional. **It does NOT include water supplied to neighboring utilities (water exported) which is metered and billed. Be sure to subtract any consumption for exported water sales that may be included in these billing roles. Water supplied as exports to neighboring water utilities should be included only in the Water Exported component.** The metered consumption data can be taken directly from billing records for the water audit period. The accuracy of yearly metered consumption data can be refined by including an adjustment to account for customer meter reading lag time since not all customer meters are read on the same day of the meter reading period. However additional analysis is necessary to determine the lag time adjustment value, which may or may not be significant.
Billed unmetered consumption Find	All billed consumption which is calculated based on estimates or norms from water usage sites that have been determined by utility policy to be left unmetered. This is typically a very small component in systems that maintain a policy to meter their customer population. However, this quantity can be the key consumption component in utilities that have not adopted a universal metering policy. **This component should NOT include any water that is supplied to neighboring utilities (water exported) which is unmetered but billed. Water supplied as exports to neighboring water utilities should be included only in the Water Exported component.**

Item Name	Description
Customer metering inaccuracies Find	Apparent water losses caused by the collective under-registration of customer water meters. Many customer water meters gradually wear as large cumulative volumes of water are passed through them over time. This causes the meters to under-register the flow of water. This occurrence is common with smaller residential meters of sizes 5/8-inch and 3/4 inch after they have registered very large cumulative volumes of water, which generally occurs only after periods of years. For meters sized 1-inch and larger - typical of multi-unit residential, commercial and industrial accounts - meter under-registration can occur from wear or from the improper application of the meter; i.e. installing the wrong type of meter or the wrong size of meter, for the flow pattern (profile) of the consumer. For instance, many larger meters have reduced accuracy at low flows. If an oversized meter is installed, most of the time the routine flow will occur in the low flow range of the meter, and a significant portion of it may not be registered. It is important to properly select and install all meters, but particularly large customer meters, size 1-inch and larger. The auditor has two options for entering data for this component of the audit. The auditor can enter a percentage under-registration (typically an estimated value), this will apply the selected percentage to the two categories of metered consumption to determine the volume of water not recorded due to customer meter inaccuracy. Note that this percentage is a composite average inaccuracy for all customer meters in the entire meter population. The percentage will be multiplied by the sum of the volumes in the Billed Metered and Unbilled Metered components. Alternatively, if the auditor has substantial data from meter testing activities, he or she can calculate their own loss volumes, and this volume may be entered directly. Note that a value of zero will be accepted but an alert will appear asking if the customer population is unmetered. Since all metered systems have some degree of inaccuracy, a positive value should be entered. A value of zero in this component is valid only if the water utility does not meter its customer population.
Customer retail unit cost Find	The Customer Retail Unit Cost represents the charge that customers pay for water service. This unit cost is applied routinely to the components of Apparent Loss, since these losses represent water reaching customers but not (fully) paid for. Since most water utilities have a rate structure that includes a variety of different costs based upon class of customer, a weighted average of individual costs and number of customer accounts in each class can be calculated to determine a single composite cost that should be entered into this cell. Finally, the weighted average cost should also include additional charges for sewer, storm water or biosolids processing, but only if these charges are based upon the volume of potable water consumed. For water utilities in regions with limited water resources and a questionable ability to meet the drinking water demands in the future, the Customer Retail Unit Cost might also be applied to value the Real Losses; instead of applying the Variable Production Cost to Real Losses. In this way, it is assumed that every unit volume of leakage reduced by leakage management activities will be sold to a customer. Note: the Free Water Audit Software allows the user to select the units that are charged to customers (either $/1,000 gallons, $/hundred cubic feet, or $/1,000 litres) and automatically converts these units to the units that appear in the "WATER SUPPLIED" box. The monetary units are United States dollars, $.
Infrastructure Leakage Index (ILI) Find	The ratio of the Current Annual Real Losses (Real Losses) to the Unavoidable Annual Real Losses (UARL). The ILI is a highly effective performance indicator for comparing (benchmarking) the performance of utilities in operational management of real losses.
Length of mains Find	Length of all pipelines (except service connections) in the system starting from the point of system input metering (for example at the outlet of the treatment plant). It is also recommended to include in this measure the total length of fire hydrant lead pipe. Hydrant lead pipe is the pipe branching from the water main to the fire hydrant. Fire hydrant leads are typically of a sufficiently large size that is more representative of a pipeline than a service connection. The average length of hydrant leads across the entire system can be assumed if not known, and multiplied by the number of fire hydrants in the system, which can also be assumed if not known. This value can then be added to the total pipeline length. Total length of mains can therefore be calculated as: Length of Mains, miles = (total pipeline length, miles) + [{(average fire hydrant lead length, ft) x (number of fire hydrants)} / 5,280 ft/mile] or Length of Mains, kilometres = (total pipeline length, kilometres) + [{(average fire hydrant lead length, metres) x (number of fire hydrants)} / 1,000 metres/kilometre]
NON-REVENUE WATER Find	= Apparent Losses + Real Losses + Unbilled Metered Consumption + Unbilled Unmetered Consumption. This is water which does not provide revenue potential to the utility.
Number of active AND inactive service connections Find	Number of customer service connections, extending from the water main to supply water to a customer. Please note that this includes the actual number of distinct piping connections, including fire connections, whether active or inactive. This may differ substantially from the number of customers (or number of accounts). **Note: this number does not include the pipeline leads to fire hydrants - the total length of piping supplying fire hyrants should be included in the "Length of mains" parameter.**
Real Losses Find	Physical water losses from the pressurized system (water mains and customer service connections) and the utility's storage tanks, up to the point of customer consumption. In metered systems this is the customer meter, in unmetered situations this is the first point of consumption (stop tap/tap) within the property. The annual volume lost through all types of leaks, breaks and overflows depends on frequencies, flow rates, and average duration of individual leaks, breaks and overflows.
Revenue Water	Those components of System Input Volume that are billed and have the potential to produce revenue.
Service Connection Density Find	=number of customer service connections / length of mains

Item Name	Description
Systematic data handling errors Find	Apparent losses caused by accounting omissions, errant computer programming, gaps in policy, procedure, and permitting/activation of new accounts; and any type of data lapse that results in under-stated customer water consumption in summary billing reports. **Systematic Data Handling Errors result in a direct loss of revenue potential. Water utilities can find "lost" revenue by keying on this component.** Utilities typically measure water consumption registered by water meters at customer premises. The meter should be read routinely (ex: monthly) and the data transferred to the Customer Billing System, which generates and sends a bill to the customer. Data Transfer Errors result in the consumption value being less than the actual consumption, creating an apparent loss. Such error might occur from illegible and mis-recorded hand-written readings compiled by meter readers, inputting an incorrect meter register unit conversion factor in the automatic meter reading equipment, or a variety of similar errors. Apparent losses also occur from Data Analysis Errors in the archival and data reporting processes of the Customer Billing System. Inaccurate estimates used for accounts that fail to produce a meter reading are a common source of error. Billing adjustments may award customers a rightful monetary credit, but do so by creating a negative value of consumption, thus under-stating the actual consumption. Account activation lapses may allow new buildings to use water for months without meter readings and billing. Poor permitting and construction inspection practices can result in a new building lacking a billing account, a water meter and meter reading; i.e., the customer is unknown to the utility's billing system. Close auditing of the permitting, metering, meter reading, billing and reporting processes of the water consumption data trail can uncover data management gaps that create volumes of systematic data handling error. Utilities should routinely analyze customer billing records to detect data anomalies and quantify these losses. For example, a billing account that registers zero consumption for two or more billing cycles should be checked to explain why usage has seemingly halted. Given the revenue loss impacts of these losses, water utilities are well-justified in providing continuous oversight and timely correction of data transfer errors & data handling errors. If the water auditor has not yet gathered detailed data or assessment of systematic data handling error, it is recommended that the auditor apply the default value of 0.25% of the the Billed Authorized Consumption volume. However, if the auditor has investigated the billing system and its controls, and has well validated data that indicates the volume from systematic data handling error is substantially higher or lower than that generated by the default value, then the auditor should enter a quantity that was derived from the utility investigations and select an appropriate grading. Note: negative values are not allowed for this audit component. If the auditor enters zero for this component then a grading of 1 will be automatically assigned.
Total annual cost of operating the water system Find	These costs include those for operations, maintenance and any annually incurred costs for long-term upkeep of the drinking water supply and distribution system. It should include the costs of day-to-day upkeep and long-term financing such as repayment of capital bonds for infrastructure expansion or improvement. Typical costs include employee salaries and benefits, materials, equipment, insurance, fees, administrative costs and all other costs that exist to sustain the drinking water supply. Depending upon water utility accounting procedures or regulatory agency requirements, it may be appropriate to include depreciation in the total of this cost. This cost should not include any costs to operate wastewater, biosolids or other systems outside of drinking water.
Unauthorized consumption Find	Includes water illegally withdrawn from fire hydrants, illegal connections, bypasses to customer consumption meters, or tampering with metering or meter reading equipment; as well as any other ways to receive water while thwarting the water utility's ability to collect revenue for the water. Unauthorized consumption results in uncaptured revenue and creates an error that understates customer consumption. In most water utilities this volume is low and, if the water auditor has not yet gathered detailed data for these loss occurrences, it is recommended that the auditor apply a default value of 0.25% of the volume of water supplied. However, if the auditor has investigated unauthorized occurrences, and has well validated data that indicates the volume from unauthorized consumption is substantially higher or lower than that generated by the default value, then the auditor should enter a quantity that was derived from the utility investigations. Note that a value of zero will not be accepted since all water utilities have some volume of unauthorized consumption occurring in their system. Note: if the auditor selects the default value for unauthorized consumption, a data grading of 5 is automatically assigned, but not displayed on the Reporting Worksheet.
Unavoidable Annual Real Losses (UARL) Find	UARL (gallons)=(5.41Lm + 0.15Nc + 7.5Lc) xP, or UARL (litres)=(18.0Lm + 0.8Nc + 25.0Lc) xP where: Lm = length of mains (miles or kilometres) Nc = number of customer service connections Lp = the average distance of customer service connection piping (feet or metres) (see the Worksheet "Service Connection Diagram" for guidance on deterring the value of Lp) Lc = total length of customer service connection piping (miles or km) Lc = Nc X Lp (miles or kilometres) P = Pressure (psi or metres) The UARL is a theoretical reference value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied. It is a key variable in the calculation of the Infrastructure Leakage Index (ILI). Striving to reduce system leakage to a level close to the UARL is usually not needed unless the water supply is unusually expensive, scarce or both. NOTE: The UARL calculation has not yet been proven as fully valid for very small, or low pressure water distribution systems. If, in gallons: (Lm x 32) + Nc < 3000 or P <35psi in litres: (Lm x 20) + Nc < 3000 or P < 25m then the calculated UARL value may not be valid. The software does not display a value of UARL or ILI if either of these conditions is true.

Item Name	Description
Unbilled Authorized Consumption	All consumption that is unbilled, but still authorized by the utility. This includes Unbilled Metered Consumption + Unbilled Unmetered Consumption. See "Authorized Consumption" for more information. For Unbilled Unmetered Consumption, the Free Water Audit Software provides the auditor the option to select a default value if they have not audited unmetered activities in detail. The default calculates a volume that is 1.25% of the Water Supplied volume. If the auditor has carefully audited the various unbilled, unmetered, authorized uses of water, and has established reliable estimates of this collective volume, then he or she may enter the volume directly for this component, and not use the default value.
Unbilled metered consumption Find	Metered consumption which is authorized by the water utility, but, for any reason, is deemed by utility policy to be unbilled. This might for example include metered water consumed by the utility itself in treatment or distribution operations, or metered water provided to civic institutions free of charge. **It does not include water supplied to neighboring utilities (water exported) which may be metered but not billed.**
Unbilled unmetered consumption Find	Any kind of Authorized Consumption which is neither billed or metered. This component typically includes water used in activities such as fire fighting, flushing of water mains and sewers, street cleaning, fire flow tests conducted by the water utility, etc. In most water utilities it is a small component which is very often substantially overestimated. **It does NOT include water supplied to neighboring utilities (water exported) which is unmetered and unbilled – an unlikely case.** This component has many sub-components of water use which are often tedious to identify and quantify. Because of this, and the fact that it is usually a small portion of the water supplied, it is recommended that the auditor apply the default value, which is 1.25% of the Water Supplied volume. Select the default percentage to enter this value. If the water utility has carefully audited the unbilled, unmetered activities occurring in the system, and has well validated data that gives a value substantially higher or lower than the default volume, then the auditor should enter their own volume. However the default approach is recommended for most water utilities. Note that a value of zero is not permitted, since all water utilities have some volume of water in this component occurring in their system.
Units and Conversions	The user may develop an audit based on one of three unit selections: 1) Million Gallons (US) 2) Megalitres (Thousand Cubic Metres) 3) Acre-feet Once this selection has been made in the instructions sheet, all calculations are made on the basis of the chosen units. Should the user wish to make additional conversions, a unit converter is provided below (use drop down menus to select units from the yellow unit boxes): Enter Units: 1 | Convert From… Million Gallons (US) = **Converts to…..** 3.06888329 Acre-feet (conversion factor = 3.06888328973723)
Use of Option Buttons	 **NOTE:** For Unbilled Unmetered Consumption, Unauthorized Consumption and Systematic Data Handling Errors, a recommended default value can be applied by selecting the Percent option. The default values are based on fixed percentages of Water Supplied or Billed Authorized Consumption and are recommended for use in this audit unless the auditor has well validated data for their system. Default values are shown by purple cells, as shown in the example above. If a default value is selected, the user does not need to grade the item; a grading value of 5 is automatically applied (howe ver, this grade will not be displayed).
Variable production cost (applied to Real Losses) Find	The cost to produce and supply the next unit of water (e.g., $/million gallons). This cost is determined by calculating the summed unit costs for ground and surface water treatment and all power used for pumping from the source to the customer. It may also include other miscellaneous unit costs that apply to the production of drinking water. It should also include the unit cost of bulk water purchased as an import if applicable. It is common to apply this unit cost to the volume of Real Losses. However, if water resources are strained and the ability to meet future drinking water demands is in question, then the water auditor can be justified in applying the Customer Retail Rate to the Real Loss volume, rather than applying the Variable Production Cost. The Free Water Audit Software applies the Variable Production costs to Real Losses by default. However, the auditor has the option on the Reporting Worksheet to select the Customer Retail Cost as the basis for the Real Loss cost evaluation if the auditor determines that this is warranted.
Volume from own sources Find	The volume of water withdrawn (abstracted) from water resources (rivers, lakes, streams, wells, etc) controlled by the water utility, and then treated for potable water distribution. Most water audits are compiled for utility retail water distribution systems, so this volume should reflect the amount of treated drinking water that entered the distribution system. Often the volume of water measured at the effluent of the treatment works is slightly less than the volume measured at the raw water source, since some of the water is used in the treatment process. Thus, it is useful if flows are metered at the effluent of the treatment works. If metering exists only at the raw water source, an adjustment for water used in the treatment process should be included to account for water consumed in treatment operations such as filter backwashing, basin flushing and cleaning, etc. If the audit is conducted for a wholesale water agency that sells untreated water, then this quantity reflects the measure of the raw water, typically metered at the source.

Item Name	Description
Volume from own sources: Master meter and supply error adjustment Find	An estimate or measure of the degree of inaccuracy that exists in the master (production) meters measuring the annual Volume from own Sources, and any error in the data trail that exists to collect, store and report the summary production data. This adjustment is a weighted average number that represents the collective error for all master meters for all days of the audit year and any errors identified in the data trail. Meter error can occur in different ways. A meter or meters may be inaccurate by under-registering flow (did not capture all the flow), or by over-registering flow (overstated the actual flow). Data error can occur due to data gaps caused by temporary outages of the meter or related instrumentation. All water utilities encounter some degree of inaccuracy in master meters and data errors in archival systems are common; thus a value of zero should not be entered. Enter a negative percentage or value for metered data under-registration; or, enter a positive percentage or value for metered data over-registration.
Water exported Find	The Water Exported volume is the bulk water conveyed and sold by the water utility to neighboring water systems that exists outside of their service area. Typically this water is metered at the custody transfer point of interconnection between the two water utilities. Usually the meter(s) are owned by the water utility that is selling the water: i.e. the exporter. If the water utility who is compiling the annual water audit sells bulk water in this manner, they are an exporter of water. Note: The Water Exported volume is sold to wholesale customers who are typically charged a wholesale rate that is different than retail rates charged to the retail customers existing within the service area. Many state regulatory agencies require that the Water Exported volume be reported to them as a quantity separate and distinct from the retail customer billed consumption. For these reasons - and others - the Water Exported volume is always quantified separately from Billed Authorized Consumption in the standard water audit. **Be certain not to "double-count" this quantity by including it in both the Water Exported box and the Billed Metered Consumption box of the water audit Reporting Worksheet. This volume should be included only in the Water Exported box.**
Water exported: Master meter and supply error adjustment Find	An estimate or measure of the volume in which the Water Exported volume is incorrect. This adjustment is a weighted average that represents the collective error for all of the metered and archived exported flow for all days of the audit year. Meter error can occur in different ways. A meter may be inaccurate by under-registering flow (did not capture all the flow), or by over-registering flow (overstated the actual flow). Error in the metered, archived data can also occur due to data gaps caused by temporary outages of the meter or related instrumentation. All water utilities encounter some degree of error in their metered data, particularly if meters are aged and infrequently tested. Occasional errors also occur in the archived data. Thus, a value of zero should not be entered. Enter a negative percentage or value for metered data under-registration; or enter a positive percentage or value for metered data over-registration. If regular meter accuracy testing is conducted on the meter(s) - which is usually conducted by the water utility selling the water - then the results of this testing can be used to help quantify the meter error adjustment. Corrections to data gaps or other errors found in the archived data should also be included as a portion of this meter error adjustment.
Water imported Find	The Water Imported volume is the bulk water purchased to become part of the Water Supplied volume. Typically this is water purchased from a neighboring water utility or regional water authority, and is metered at the custody transfer point of interconnection between the two water utilities. Usually the meter(s) are owned by the water supplier selling the water to the utility conducting the water audit. The water supplier selling the bulk water usually charges the receiving utility based upon a wholesale water rate.
Water imported: Master meter and supply error adjustment Find	An estimate or measure of the volume in which the Water Imported volume is incorrect. This adjustment is a weighted average that represents the collective error for all of the metered and archived imported flow for all days of the audit year. Meter error can occur in different ways. A meter may be inaccurate by under-registering flow (did not capture all the flow), or by over-registering flow (overstated the actual flow). Error in the metered, archived data can also occur due to data gaps caused by temporary outages of the meter or related instrumentation. All water utilities encounter some level of meter inaccuracy, particularly if meters are aged and infrequently tested. Occasional errors also occur in the archived metered data. Thus, a value of zero should not be entered. Enter a negative percentage or value for metered data under-registration; or, enter a positive percentage or value for metered data over-registration. If regular meter accuracy testing is conducted on the meter(s) - which is usually conducted by the water utility selling the water - then the results of this testing can be used to help quantify the meter error adjustment.
WATER LOSSES Find	= apparent losses + real losses Water Losses are the difference between Water Supplied and Authorized Consumption. Water losses can be considered as a total volume for the whole system, or for partial systems such as transmission systems, pressure zones or district metered areas (DMA); if one of these configurations are the basis of the water audit.

Water Audit Report for: Marina Coast Water District (27710017)
Reporting Year: 2020 | 1/2020 - 12/2020
Data Validity Score: 69

Water Loss Control Planning Guide

Functional Focus Area	Water Audit Data Validity Level / Score				
	Level I (0-25)	**Level II** (26-50)	**Level III** (51-70)	**Level IV** (71-90)	**Level V** (91-100)
Audit Data Collection	Launch auditing and loss control team; address production metering deficiencies	Analyze business process for customer metering and billing functions and water supply operations. Identify data gaps.	Establish/revise policies and procedures for data collection	Refine data collection practices and establish as routine business process	Annual water audit is a reliable gauge of year-to-year water efficiency standing
Short-term loss control	Research information on leak detection programs. Begin flowcharting analysis of customer billing system	Conduct loss assessment investigations on a sample portion of the system: customer meter testing, leak survey, unauthorized consumption, etc.	Establish ongoing mechanisms for customer meter accuracy testing, active leakage control and infrastructure monitoring	Refine, enhance or expand ongoing programs based upon economic justification	Stay abreast of improvements in metering, meter reading, billing, leakage management and infrastructure rehabilitation
Long-term loss control		Begin to assess long-term needs requiring large expenditure: customer meter replacement, water main replacement program, new customer billing system or Automatic Meter Reading (AMR) system.	Begin to assemble economic business case for long-term needs based upon improved data becoming available through the water audit process.	Conduct detailed planning, budgeting and launch of comprehensive improvements for metering, billing or infrastructure management	Continue incremental improvements in short-term and long-term loss control interventions
Target-setting			Establish long-term apparent and real loss reduction goals (+10 year horizon)	Establish mid-range (5 year horizon) apparent and real loss reduction goals	Evaluate and refine loss control goals on a yearly basis
Benchmarking			Preliminary Comparisons - can begin to rely upon the Infrastructure Leakage Index (ILI) for performance comparisons for real losses (see below table)	Performance Benchmarking - ILI is meaningful in comparing real loss standing	Identify Best Practices/ Best in class - the ILI is very reliable as a real loss performance indicator for best in class service

For validity scores of 50 or below, the shaded blocks should not be focus areas until better data validity is achieved.

Once data have been entered into the Reporting Worksheet, the performance indicators are automatically calculated. How does a water utility operator know how well his or her system is performing? The AWWA Water Loss Control Committee provided the following table to assist water utilities is gauging an approximate Infrastructure Leakage Index (ILI) that is appropriate for their water system and local conditions. The lower the amount of leakage and real losses that exist in the system, then the lower the ILI value will be.

Note: this table offers an approximate guideline for leakage reduction target-setting. The best means of setting such targets include performing an economic assessment of various loss control methods. However, this table is useful if such an assessment is not possible.

General Guidelines for Setting a Target ILI (without doing a full economic analysis of leakage control options)

Target ILI Range	Financial Considerations	Operational Considerations	Water Resources Considerations
1.0 - 3.0	Water resources are costly to develop or purchase; ability to increase revenues via water rates is greatly limited because of regulation or low ratepayer affordability.	Operating with system leakage above this level would require expansion of existing infrastructure and/or additional water resources to meet the demand.	Available resources are greatly limited and are very difficult and/or environmentally unsound to develop.
>3.0 -5.0	Water resources can be developed or purchased at reasonable expense; periodic water rate increases can be feasibly imposed and are tolerated by the customer population.	Existing water supply infrastructure capability is sufficient to meet long-term demand as long as reasonable leakage management controls are in place.	Water resources are believed to be sufficient to meet long-term needs, but demand management interventions (leakage management, water conservation) are included in the long-term planning.
>5.0 - 8.0	Cost to purchase or obtain/treat water is low, as are rates charged to customers.	Superior reliability, capacity and integrity of the water supply infrastructure make it relatively immune to supply shortages.	Water resources are plentiful, reliable, and easily extracted.
Greater than 8.0	Although operational and financial considerations may allow a long-term ILI greater than 8.0, such a level of leakage is not an effective utilization of water as a resource. Setting a target level greater than 8.0 - other than as an incremental goal to a smaller long-term target - is discouraged.		
Less than 1.0	If the calculated Infrastructure Leakage Index (ILI) value for your system is 1.0 or less, two possibilities exist. a) you are maintaining your leakage at low levels in a class with the top worldwide performers in leakage control. b) A portion of your data may be flawed, causing your losses to be greatly understated. This is likely if you calculate a low ILI value but do not employ extensive leakage control practices in your operations. In such cases it is beneficial to validate the data by performing field measurements to confirm the accuracy of production and customer meters, or to identify any other potential sources of error in the data.		

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Marina Coast Water District
Agenda Transmittal

Agenda Item: 10-F Meeting Date: December 13, 2021

Prepared By: Paula Riso Approved By: Remleh Scherzinger

Agenda Title: Approve the Proposed Regular Board/GSA Meeting and Workshop Meeting Schedule for 2022

Staff Recommendation: The Board of Directors is requested to approve the proposed regular Board/GSA meeting and workshop meeting schedule for 2022.

Background: *Strategic Plan, Mission Statement – We Provide high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management and the development of water resources in an environmentally sensitive manner.*

Discussion/Analysis: The Board generally holds one meeting per month with the Board meeting held on the third Monday of the month. The first Monday of the month is reserved for special meetings and workshops. Staff is anticipating that in 2022 there will be very few months that would require more than one meeting.

1st Monday of Each Month – Reserved for Workshops/Special Meetings
3rd Monday of Each Month – Board Meetings
6:30 p.m.

January 4, 2022*
January 19, 2022**
February 16, 2022***
March 21, 2022
April 18, 2022
May 16, 2022
June 20, 2022
July 18, 2022
August 15, 2022
September 19, 2022
October 17, 2022
November 14, 2022****
December 19, 2022

*Special Meeting to Proclaim Local Emergency and Authorize Teleconferencing
**Due to MLK Holiday (Jan 17th), SDA Meeting (Jan 18th)
***Monday is a holiday, so the meeting is scheduled for Tuesday
****To adjust for the Thanksgiving Holiday

Environmental Review Compliance: None required.

Financial Impact: _____Yes __X__No Funding Source/Recap: None

Other Considerations: The Board can suggest alternate meeting dates.

Material Included for Information/Consideration: None.

Action Required: _____Resolution ___X___Motion _____Review

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

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Marina Coast Water District
Agenda Transmittal

Agenda Item: 10-G Meeting Date: December 13, 2021

Prepared By: Paula Riso Approved By: Remleh Scherzinger

Agenda Title: Adopt Resolution No. 2021-58 to Proclaim a Local Emergency, and Authorize Remote Teleconference Meetings of All District Legislative Bodies for the Following 30 Days

Staff Recommendation: The Board of Directors adopt Resolution No. 2021-58 to proclaim a local emergency and authorize remote teleconference meetings of all District legislative bodies for the following 30 days.

Background: *Strategic Plan, Mission Statement – We provide our customers with high quality water, wastewater collection and conservation services at a reasonable cost, through planning, management, and the development of water resources in an environmentally sensitive manner.*

On March 4, 2020, Governor Newsom issued a Proclamation of State of Emergency in response to the COVID-19 pandemic. That proclamation remains in effect. As a result of the state of emergency, the Governor issued executive orders that waived the normally strict provisions of the Brown Act relating to holding and participating in meetings via teleconferencing. Executive Order N-29-20 allowed bodies subject to the Brown Act to meet without a physical meeting location, so long as various requirements were met, including providing the public the opportunity to observe and participate in the meeting telephonically or electronically. Executive Order No. N-08-21 extended the suspension of the Brown Act's normal teleconferencing rules through September 30, 2021.

On September 16, 2021, Governor Newsom signed AB 361 which took effect immediately. This legislation amends the Brown Act to allow meeting bodies subject to the Brown Act to meet via teleconference during a proclaimed state of emergency in accordance with teleconference procedures established by AB 361 rather than under the Brown Act's more narrow standard rules for participation in a meeting by teleconference. The Monterey County Health Officer has issued a recommendation for social distancing in legislative body meetings, so the first meeting after September 30, 2021, may be held without making findings. If the Board desires to continue to meet remotely via teleconference after that first meeting, the Board is required to make certain findings under AB 361 no later than 30 days after the first teleconference meeting held pursuant to AB 361, and every 30 days thereafter. If the Board does not meet again within 30 days, a special meeting may be necessary for this purpose. If the finding is not timely made, the Board will be required to meet in person to make findings to return to remote meetings.

Discussion/Analysis: The teleconference rules of AB 361 are operative only so long as the Governor's proclamation of statewide emergency is in place; once that proclamation is terminated, the Board must either meet in person or utilize the normal Brown Act rules for teleconferencing.

On October 18, 2021, the Board adopted Resolution No. 2021-52, and on November 15, 2021, the Board adopted Resolution No. 2021-54 proclaiming a local emergency and authorizing remote teleconference meetings of all District Legislative bodies for 30 days. As of this date, the state, and county emergency is still in place and staff recommends proclaiming the emergency is still in

place and authorize the Board to continue to meet remotely via teleconference until such time the emergency is over.

Environmental Review Compliance: None required.

Other Considerations: The Board of Directors can elect to not proclaim a local emergency and return to in-person meetings.

Material Included for Information/Consideration: Resolution No. 2021-58.

Action Required: __X____Resolution _____Motion _____Review
(Roll call vote is required.)

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

December 13, 2021

Resolution No. 2021 - 58
Resolution of the Board of Directors
Marina Coast Water District
Proclaiming a Local Emergency, and Authorize Remote Teleconference Meetings of All Meetings of the Board of Directors and Specified Board Committees for the Following 30 Days

RESOLVED, by the Board of Directors ("Board") of the Marina Coast Water District ("District"), at a regular meeting duly called and held on December 13, 2021 via a video conference pursuant to Governor Newsom's Executive Order N-29-20, as follows:

WHEREAS, on March 4, 2020, Governor Newsom issued a Proclamation of State of Emergency in response to the COVID-19 pandemic; and,

WHEREAS, on September 16, 2021, Governor Newsom signed AB 361 which took effect immediately and amends the Brown Act to allow meeting bodies subject to the Brown Act to meet via teleconference during a proclaimed state of emergency in accordance with teleconference procedures established by AB 361 rather than under the Brown Act's more narrow standard rules for participation in a meeting by teleconference; and,

WHEREAS, the first meeting after September 30, 2021, may be held without making findings. However, if the Board desires to continue to meet remotely via teleconference after that first meeting, the Board is required to make certain findings under AB 361 no later than 30 days after the first teleconference meeting held pursuant to AB 361, and every 30 days thereafter; and,

WHEREAS, no later than 30 days after meeting via teleconference for the first time pursuant to AB 361, the body must make a finding that the body "has reconsidered the circumstances of the state of emergency" and further find that "[a]ny of the following circumstances exist: (i) The state of emergency continues to directly impact the ability of the members to meet safely in person. (ii) State or local officials continue to impose or recommend measures to promote social distancing." (Gov't Code §54953(e)(3) [AB 361, p. 11].); and,

WHEREAS, the teleconference rules of AB 361 are operative only so long as the Governor's proclamation of statewide emergency is in place; once that proclamation is terminated, the Board, the Executive Committee, Budget and Personnel Committee, and Community Outreach Committee, and Director participation in the Joint City-District Committee, must either meet in person or utilize the normal Brown Act rules for teleconferencing.

NOW, THEREFORE, BE IT RESOLVED, the Board of Directors of the Marina Coast Water District does hereby:

1. Proclaim a local emergency; and,
2. Reconsidered the circumstances of the state of emergency and find that the following circumstances exist: (i) The state of emergency continues to directly impact the ability of the members to meet safely in person. (ii) State or local officials continue to impose or recommend measures to promote social distancing; and,

3. Authorize Remote Teleconference Meetings of All Meetings of the Board of Directors, the Executive Committee, Budget and Personnel Committee, and Community Outreach Committee, and Director participation in the Joint City-District Committee for the Following 30 Days.

PASSED AND ADOPTED on December 13, 2021 by the Board of Directors of the Marina Coast Water District by the following roll call vote:

Ayes: Directors_____

Noes: Directors_____

Absent: Directors_____

Abstained: Directors_____

_____
Jan Shriner, President

ATTEST:

_____
Remleh Scherzinger, Secretary

CERTIFICATE OF SECRETARY

The undersigned Secretary of the Board of the Marina Coast Water District hereby certifies that the foregoing is a full, true and correct copy of Resolution No. 2021-58 adopted December 13, 2021.

_____
Remleh Scherzinger, Secretary

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Marina Coast Water District
Agenda Transmittal

Agenda Item: 11-A Meeting Date: December 13, 2021

Prepared By: Kelly Cadiente Approved By: Remleh Scherzinger

Agenda Title: Accept the Annual Comprehensive Financial Report and the Independent Auditor's Report for the Fiscal Year ended June 30, 2021

Staff Recommendation: Consider Accepting the Annual Comprehensive Financial Report and the Independent Auditor's Report for the fiscal year ended June 30, 2021.

Background: *Strategic Plan, Objective 3.4 - Close and Audit financial statements in a timely manner.*

California Government Code Section 26909 requires the County Auditor to either make or contract with a certified public accountant or public accountant to perform an annual audit of the accounts and records of every special district within the county for which an audit by a certified public accountant or public accountant is not otherwise provided unless an audit by a certified public accountant has been arranged by the District.

On June 15, 2015, the Board adopted Resolution No. 2015-28 approving a 3-year contract with the Pun Group for a not-to-exceed amount of $24,000 per year to provide annual audit services to the District. Due to the prolonged settlement of litigation regarding the District's Regional Desalination Project (RDP), the Pun Group's contract with the District was extended for Fiscal Years 2017-2018, 2018-2019, and 2019-2020. Having been the audit firm for the District for the past several years, the Pun Group had extensive knowledge and background with regards to the RDP and therefore was best suited to provide audit services to the District.

With the settlement of the RDP litigation completed on March 10, 2021, District staff issued a Request for Proposals (RFP) for audit services on May 24, 2021, with a proposal due date of June 10, 2021. Nine (9) proposals were received and evaluated by staff. The top three (3) ranked proposals were reviewed by the General Manager and the Pun Group was determined to be the top choice. On August 2, 2021, the Board adopted Resolution No. 2021-43 approving a 1-year contract with the Pun Group to provide annual audit services to the District for FY 2020-2021 with an option to renew for FY 2021-2022, and FY 2022-2023.

Discussion/Analysis: The ACFR is an extensive report summarizing the financial activities of the District that occurred from July 1, 2020, through June 30, 2021, and is divided into three sections: Introductory, Financial, and Statistical Sections.

The introductory section contains a Letter of Transmittal, awards and achievements, organizational chart, and directory of officials. The letter of transmittal includes a brief overview of the District, its policies, and how the District controls its finances.

The financial section contains the Management's Discussion and Analysis report. This analysis illustrates the basic financial operations of the District in a more detailed manner than is found in the Letter of Transmittal. Also included in this section are the Independent Auditor's Report and the Basic Financial Statements and Notes to the Financial Statements.

The final section of the report is a compilation of statistical schedules for the last ten years that depict various trends and general information of the District.

The Government Finance Officers Association (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the District for its ACFR for the fiscal year ended June 30, 2020. This is the thirteenth consecutive year that the District has received this prestigious award. In order to be awarded a Certificate of Achievement, the District had to publish an easily readable and efficiently organized ACFR that satisfied both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for a period of one year only. Staff believes that the District's current ACFR continues to meet the Certificate of Achievement Program's requirements and is submitting it to GFOA to determine its eligibility for another certificate.

Kenneth Pun, Managing Partner of the Pun Group, LLP, Partner in charge of the District's audit team will be available at the Board meeting to answer any questions on their audit report and the District's ACFR.

Financial Impact: _____Yes ___X___No Funding Source/Recap: None

Material Included for Information/Consideration: The Annual Comprehensive Financial Report for the fiscal year ended June 30, 2021 is provided separately.

Action Required: _____Resolution ___X___Motion _____Review

Board Action

Motion By_____ Seconded By_____ No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

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Marina Coast Water District
Agenda Transmittal

Agenda Item: 11-B Meeting Date: December 13, 2021

Prepared By: Paula Riso Presented By: Remleh Scherzinger

Agenda Title: Make Director Appointments to Committees of the Board and to Outside Agencies for 2022, and as Negotiators to any Ad Hoc Committees of the Board

Staff Recommendation: The Board of Directors consider making Director appointments to Board of Director's Committees and outside agencies for 2022.

Background: *Strategic Plan, Mission Statement - Providing high quality water, wastewater and recycled water services to the District's expanding communities through management, conservation and development of future resources at reasonable costs.*

Discussion/Analysis: The Board is asked to consider Director appointments to committees and outside agencies for 2022. The Joint City/District, Executive, Budget and Personnel, and Community Outreach Committees shall have two appointed directors and such other persons as the Board may appoint; and, the Water Conservation Commission shall have one director appointed as a liaison who doesn't attend the meetings, but is available for direction. The Board President has the authority to appoint members to Ad Hoc Committees and negotiators to those Committees.

The Board also appoints directors to the following: Monterey One Water (M1W) Board of Directors, liaison to the Monterey County Local Agency Formation Commission (LAFCO), ACWA Joint Powers Insurance Authority (JPIA), and, the Special Districts Association of Monterey County (SDA).

The Board appoints representatives to the following District Standing Committees:

1.	Water Conservation Commission Liaison	1 Board member & 1 Alternate
2.	Joint City/District Committee	2 Board members & 1 Alternate
3.	Executive Committee	2 Board members
4.	Budget and Personnel	2 Board members & 1 Alternate
5.	Community Outreach	2 Board members & 1 Alternate

The Board appoints representatives to the following outside agencies or committees:

1.	M1W	1 Board member & 2 Alternates
2.	LAFCO	1 Board member & 1 Alternate
3.	JPIA	1 Board member & 1 Alternate
4.	SDA	1 Board member & 4 Alternates

The Board appoints representatives to the following outside Ad Hoc Committees:

1.	MCWD/SVBGSA Steering Committee	1 Board member & 1 Alternate

Current Committee Assignments are:

1.	Water Conservation Commission	Zefferman – Shriner as Alternate
2.	Joint City/District Committee	Zefferman, Morton – Moore as Alternate
3.	Executive Committee	Shriner, Moore
4.	Budget and Personnel	Shriner, Cortez – Zefferman as Alternate
5.	Community Outreach	Zefferman, Cortez – Shriner as Alternate

Current appointments to outside agencies:

1.	M1W	Moore – Zefferman as Alternate
2.	LAFCO	Cortez – Zefferman as Alternate
3.	JPIA	Morton – Cortez as Alternate
4.	SDA	Moore – Shriner, Morton, Zefferman, and Cortez as Alternates

Current appointments to Ad Hoc Committees:

1.	MCWD/SVBGSA Steering Committee	Morton – Zefferman as alternate

Environmental Review Compliance: None required.

Financial Impact: _____Yes ___X___No Funding Source/Recap: None

Other Considerations: The Director appointed to serve on the M1W Board will receive a stipend of $50 per meeting and an updated FPPC Form 806 will be completed and posted on the District's website following the appointment.

Material Included for Information/Consideration: None.

Action Required: _____Resolution ___X___Motion _____Review

Board Action

Motion By_____Seconded By_____No Action Taken_____

Ayes_____ Abstained_____

Noes_____ Absent_____

Staff Report

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Marina Coast Water District
Staff Report

Agenda Item: 12-A Meeting Date: December 13, 2021

Prepared By: Kelly Cadiente Approved By: Remleh Scherzinger

Agenda Title: Fiscal Impact of COVID-19 Report

Summary: The Board of Directors requested monthly reports on the impact to the District's finances due to COVID-19.

This report includes the following:

- Budget to actual water revenues for FY 2021-2022 through November 30, 2021
- Customer accounts aging information as of December 09, 2021 (to be provided separately)
- Monthly customer payments comparison for months November 2020 through November 2021
- Graphs of delinquent accounts as of November 30, 2021

FY 2021-2022 actual water revenue to date for Central Marina is below budgeted revenue by $52,411 and Ord Community is above budgeted revenue by $394,262.

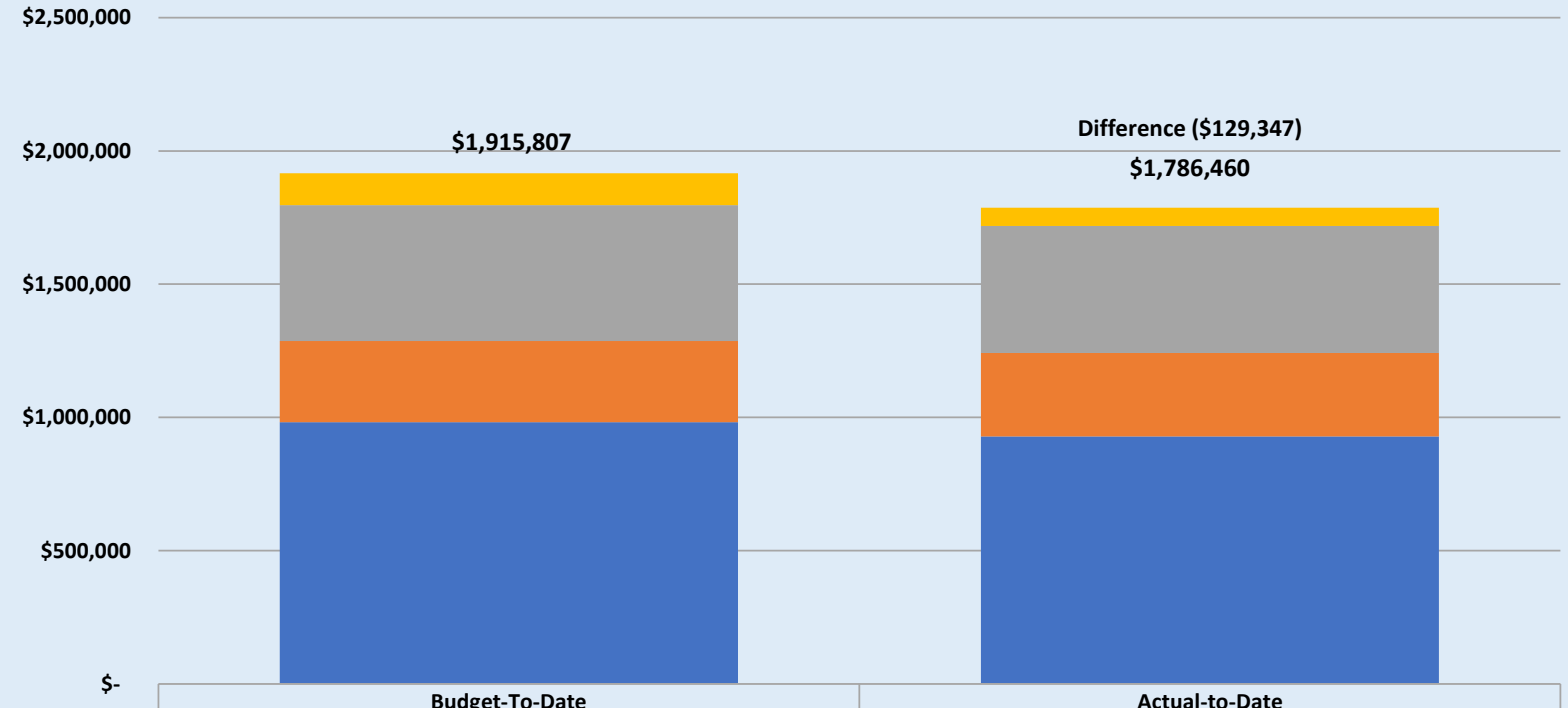
Accounts Receivable balances for Central Marina and the Ord Community were not available at the time of publication and will be provided separately.

To assist customers with outstanding balances, on May 5, 2021, staff mailed out 445 letters and flyers to customers that had outstanding balances that were 90 days or more past due. The intent was to provide any assistance programs that could offer relief to our customers which may free up their resources to enable them to pay their outstanding water bills.

Governor Newsom's 2021–22 May revise to the state budget includes $1 billion in American Rescue Plan Act funds be used to provide direct payments to water systems to address customer arrearages and revenue gaps related to the pandemic. The State Water Resources Control Board (SWRCB) required all water districts to participate in a survey to be considered for funding. Customer arrearages that qualify for funding are accrued residential and commercial drinking water arrearages from March 4, 2020, through June 15, 2021. Arrearages due to irrigation water usage, wastewater charges, and penalties do not qualify for assistance. Staff submitted MCWD's survey on September 7, 2021. The survey information was compiled by the SWRCB and determined 100% of the number of arrearages reported will qualify for assistance. The application window opened on October 4, 2021, and will be open for 60 days. Staff has completed the application and submitted it to SWRCB on November 16, 2021.

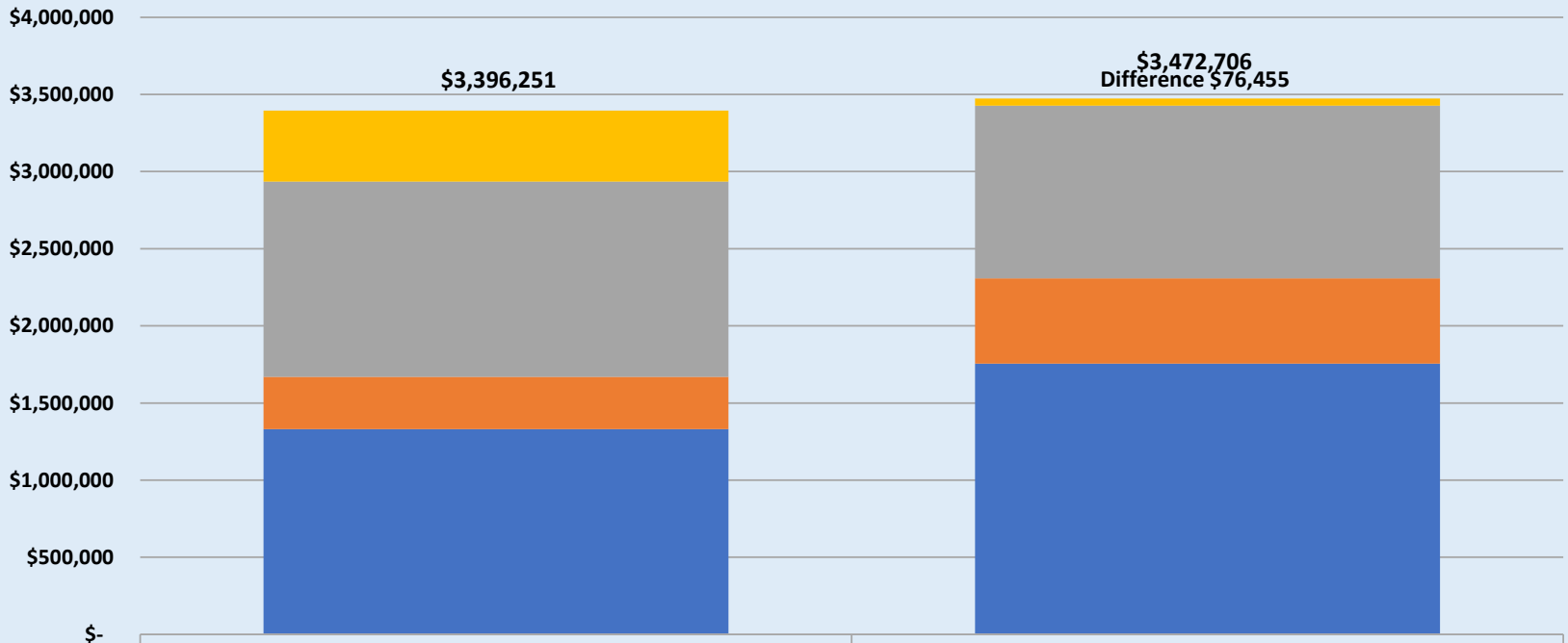
This report also includes a graph of the number of delinquent accounts for Central Marina and the Ord Community. Of the delinquent accounts, a small number from Central Marina and the Ord Community have a history before the pandemic of being delinquent and had previously been issued door tags. The Governor's water shut-off moratorium has been extended through December 31, 2021. It is anticipated that these delinquencies will be resolved through the District's normal collection processes once the moratorium is lifted.

FY 2021-2022 Central Marina Water Revenue as of November 30, 2021

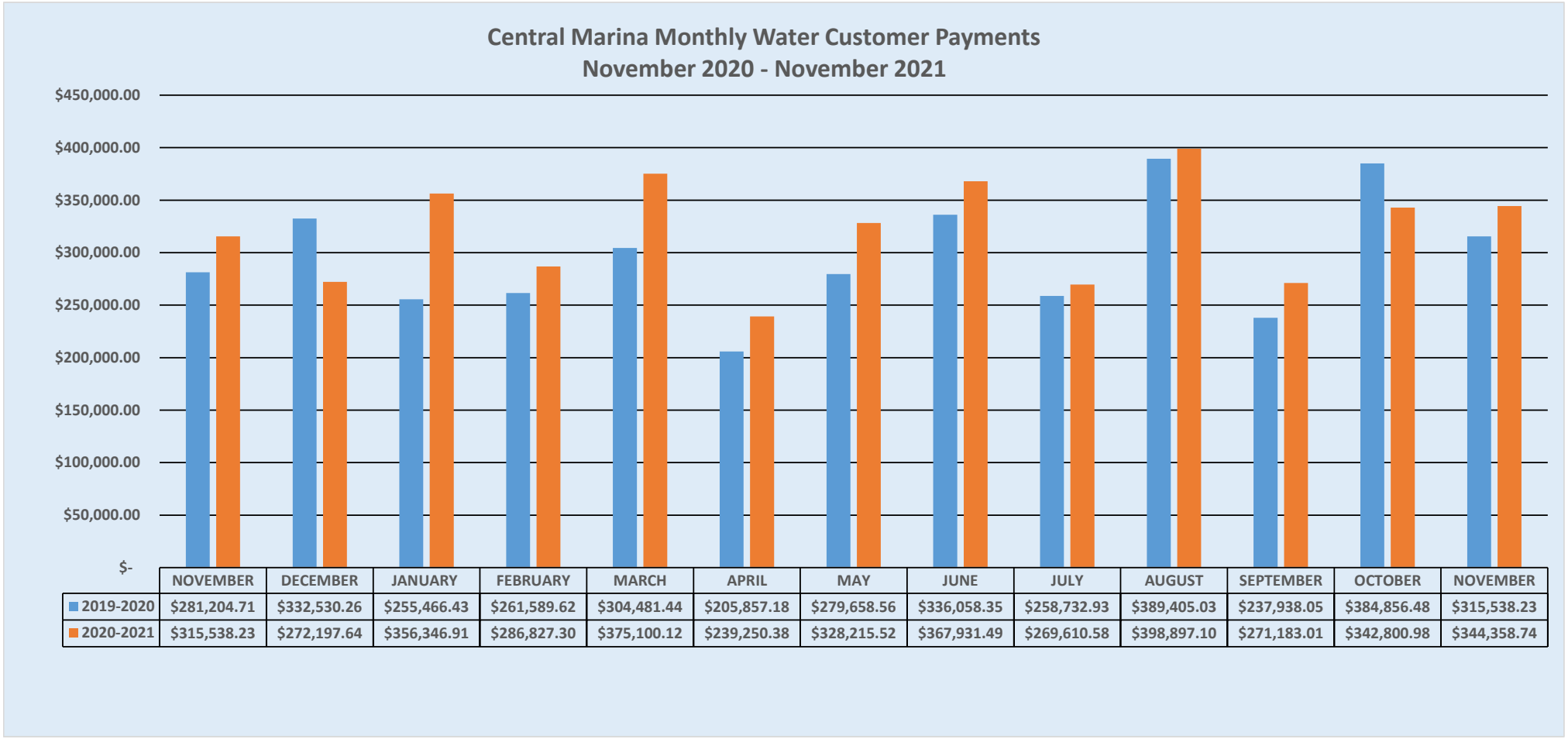


	Budget-To-Date	Actual-to-Date
Government	$119,623	$68,365
Multiples	$509,009	$476,357
Business	$304,449	$312,998
Residential	$982,725	$928,740
Totals	$1,915,807	$1,786,460

FY 2021-2022 Ord Community Water Revenue as November 30, 2021

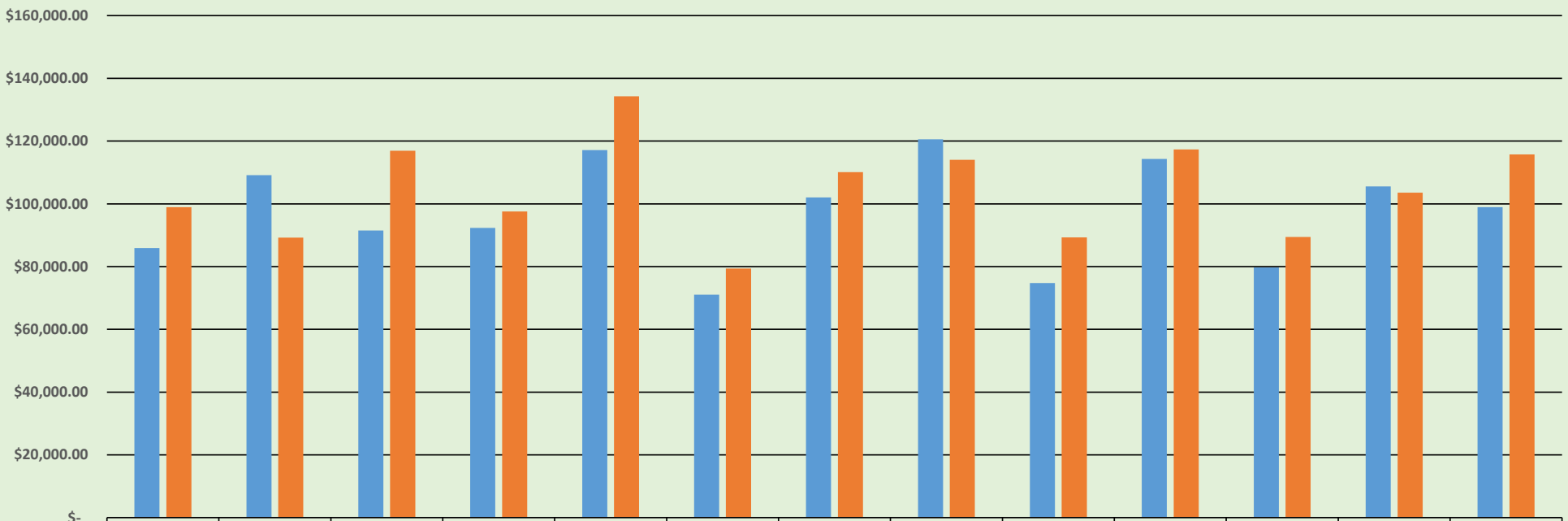


	Budget-To-Date	Actual-to-Date
Government	$461,851	$46,004
Multiples	$1,264,995	$1,118,953
Business	$339,650	$551,859
Residential	$1,329,755	$1,755,890
Totals	$3,396,251	$3,472,706



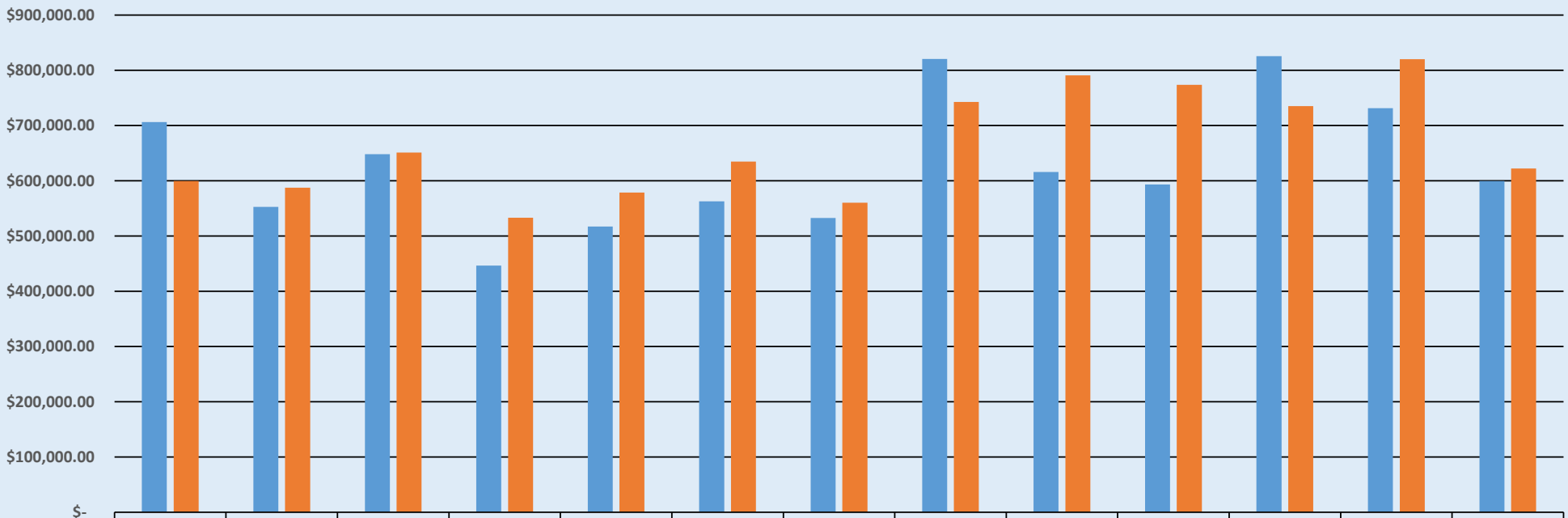
	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
2019-2020	$281,204.71	$332,530.26	$255,466.43	$261,589.62	$304,481.44	$205,857.18	$279,658.56	$336,058.35	$258,732.93	$389,405.03	$237,938.05	$384,856.48	$315,538.23
2020-2021	$315,538.23	$272,197.64	$356,346.91	$286,827.30	$375,100.12	$239,250.38	$328,215.52	$367,931.49	$269,610.58	$398,897.10	$271,183.01	$342,800.98	$344,358.74

Central Marina Monthly Sewer Customer Payments
November 2020 - November 2021



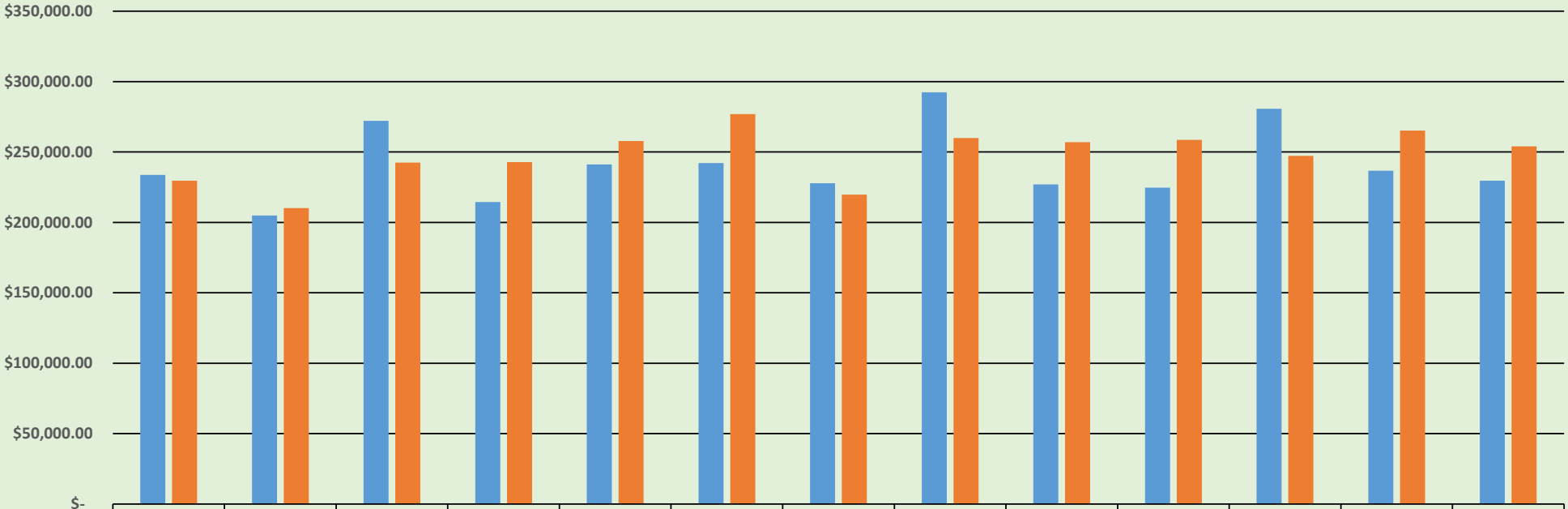
	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
2019-2020	$85,956.27	$109,146.65	$91,492.64	$92,317.78	$117,134.31	$71,062.89	$102,031.13	$120,587.45	$74,794.25	$114,308.48	$79,697.54	$105,587.74	$98,929.39
2020-2021	$98,929.39	$89,203.02	$116,941.10	$97,545.28	$134,256.58	$79,365.81	$110,115.74	$114,013.16	$89,328.25	$117,324.82	$89,437.47	$103,591.47	$115,743.17

Ord Community Monthly Water Customer Payments
November 2020 - November 2021

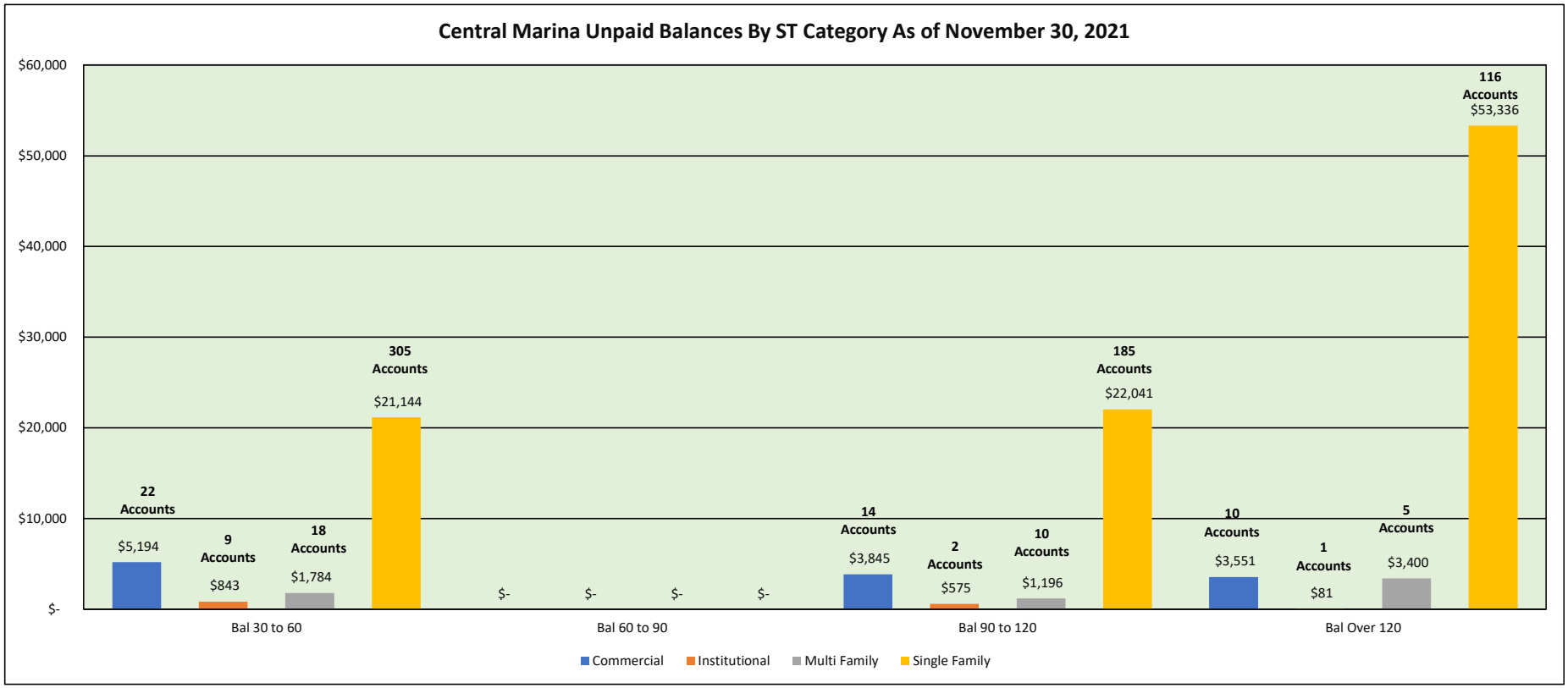


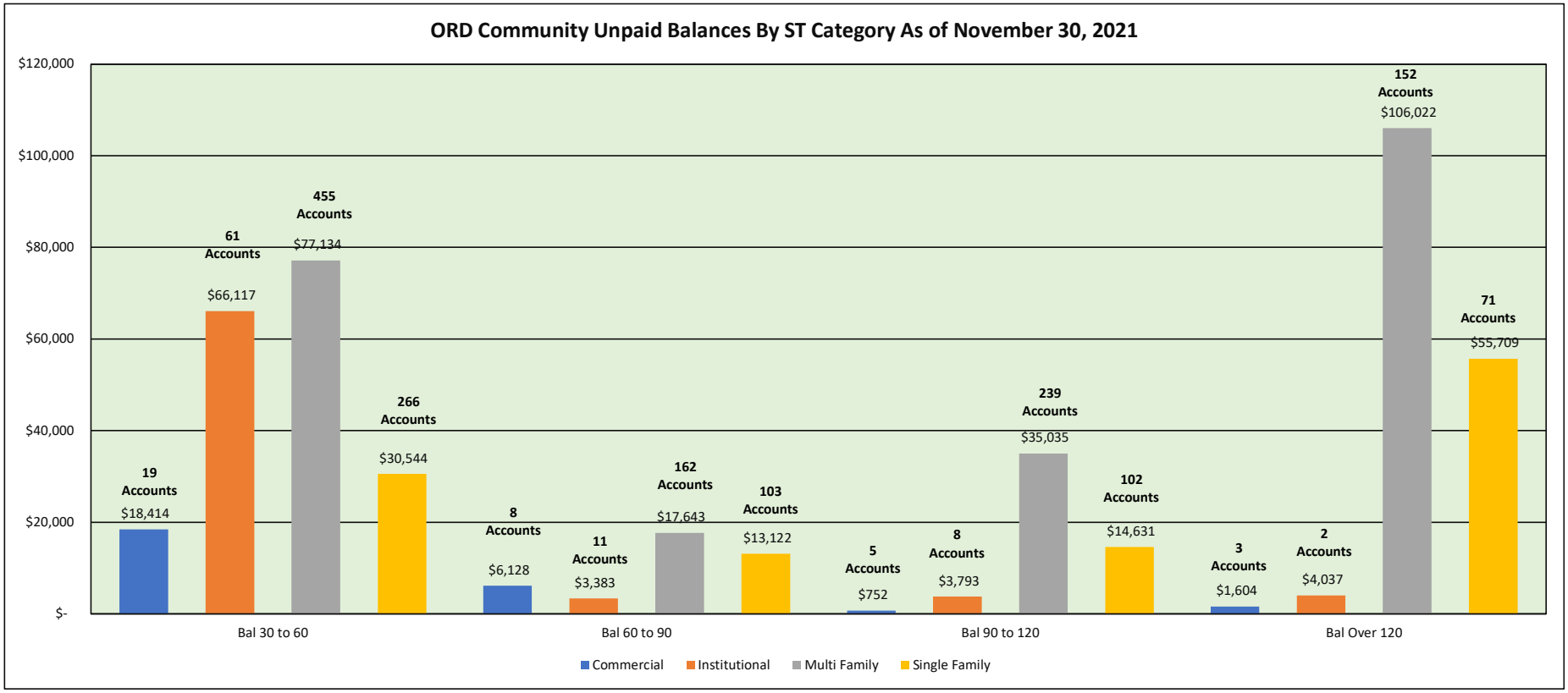
	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
2019-2020	$706,380.51	$552,539.52	$648,144.59	$446,502.42	$517,304.51	$562,961.16	$532,865.09	$820,377.37	$616,081.51	$593,519.23	$825,669.76	$731,404.20	$599,537.89
2020-2021	$599,537.89	$587,555.70	$651,096.52	$532,874.47	$578,785.42	$634,730.43	$560,171.43	$742,615.71	$791,052.24	$773,858.25	$735,167.76	$819,933.24	$622,010.69

Ord Community Monthly Sewer Customer Payments
November 2020 - November 2021



	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
2019-2020	$233,709.86	$204,831.53	$272,078.21	$214,448.44	$241,074.86	$242,199.40	$227,843.31	$292,463.65	$226,904.83	$224,641.82	$280,689.99	$236,624.63	$229,592.77
2020-2021	$229,592.77	$210,245.46	$242,441.88	$242,791.01	$257,742.28	$276,907.26	$219,699.26	$259,935.99	$257,029.52	$258,623.32	$247,233.64	$265,136.60	$253,925.17


Central Marina Unpaid Balances By ST Category As of November 30, 2021
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$-
22 Accounts
$5,194
9 Accounts
$843
18 Accounts
$1,784
305 Accounts
$21,144
$-
$-
$-
$-
14 Accounts
$3,845
2 Accounts
$575
10 Accounts
$1,196
185 Accounts
$22,041
10 Accounts
$3,551
1 Accounts
$81
5 Accounts
$3,400
116 Accounts
$53,336
Bal 30 to 60
Bal 60 to 90
Bal 90 to 120
Bal Over 120
Commercial
Institutional
Multi Family
Single Family


ORD Community Unpaid Balances By ST Category As of November 30, 2021
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$-
19 Accounts $18,414
61 Accounts $66,117
455 Accounts $77,134
266 Accounts $30,544
8 Accounts $6,128
11 Accounts $3,383
162 Accounts $17,643
103 Accounts $13,122
5 Accounts $752
8 Accounts $3,793
239 Accounts $35,035
102 Accounts $14,631
3 Accounts $1,604
2 Accounts $4,037
152 Accounts $106,022
71 Accounts $55,709
Bal 30 to 60
Bal 60 to 90
Bal 90 to 120
Bal Over 120
Commercial
Institutional
Multi Family
Single Family