

Getting to Efficiency

Data 201: Data Sources & Documentation

September 22, 2026 | 10 am

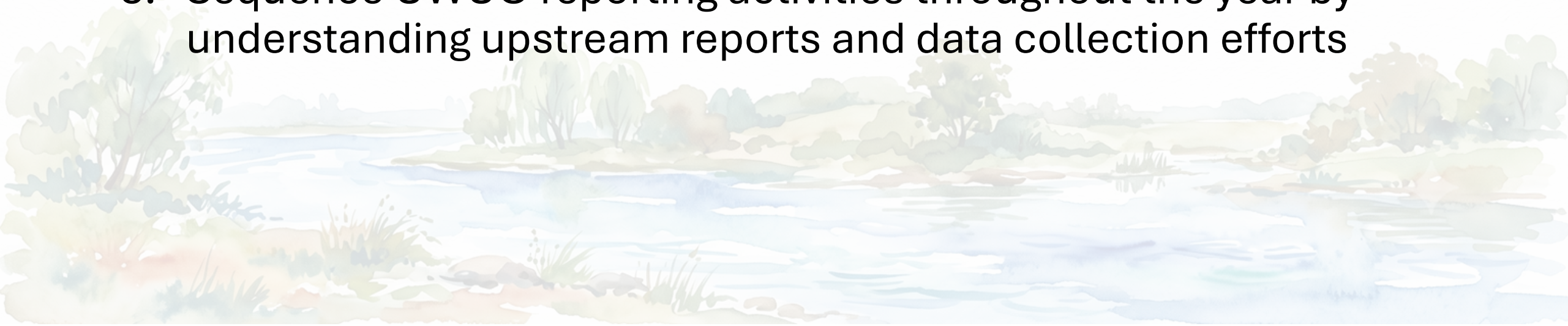


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Learning Objectives

1. Recognize the value of documentation and repeatable processes for accurate and consistent reporting
2. Understand different options for storing and accessing your data
3. Sequence UWUO reporting activities throughout the year by understanding upstream reports and data collection efforts



Today's Speakers



Christopher Tull

Chief Data Officer
California Data Collaborative



Elizabeth Lovsted

Western Regional Practice Lead
Black & Veatch



Melissa Matlock

Deputy Director
California Water Efficiency
Partnership



Erin Morales

Water Use Efficiency Program Supervisor
Cucamonga Valley Water District

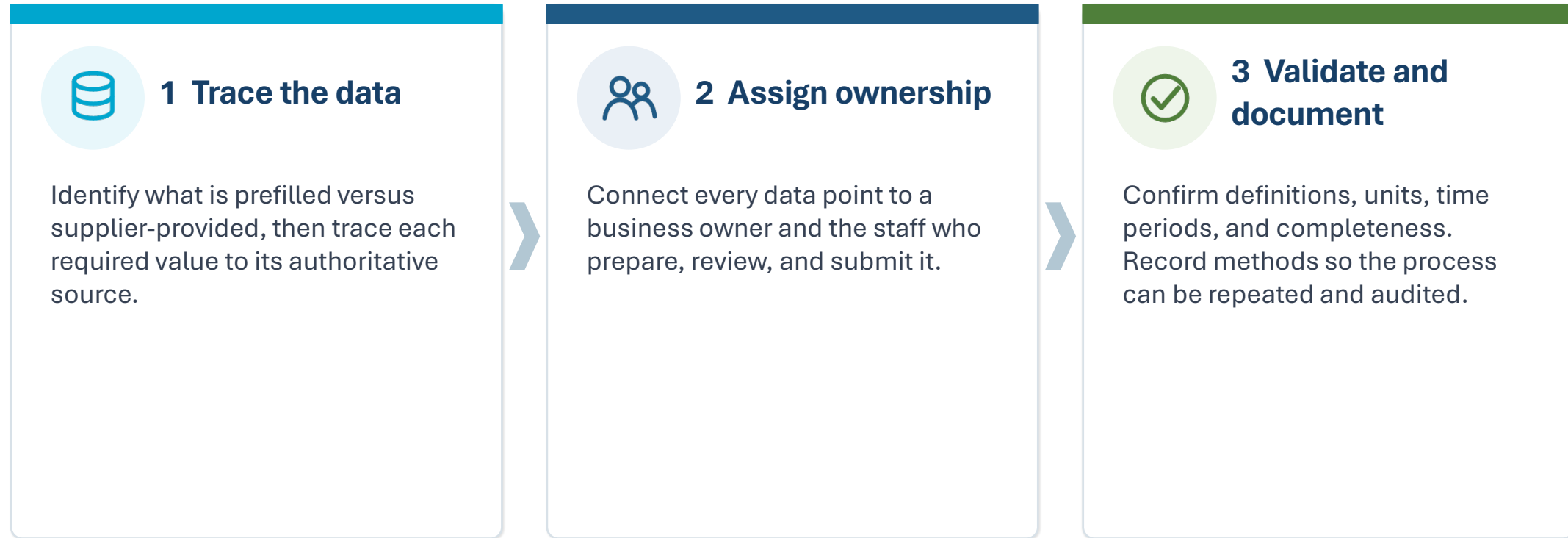


Elisa Marrone

Water Efficiency Program Manager
City of Oceanside

Data 101 Recap

The foundation for moving from reporting requirements to a repeatable data process



Data 101 takeaway

Don't just fill in the reporting template. Build a process your agency can explain, repeat, and improve.

How a billing code becomes a compliance problem

A decision made for one purpose can quietly distort several reported values.



The data can be internally consistent and still be wrong for the reporting definition.

Other ways data goes wrong

Small local conventions become large reporting problems when they are undocumented.



Hidden in free text

“IRR” in an address used to identify irrigation meters

Counts vary by spelling, entry habits, and query logic, with implications for numerous reports



No lineage

Population value carried forward without a known source or method

No clear way to defend or refresh the number



Terms blurred

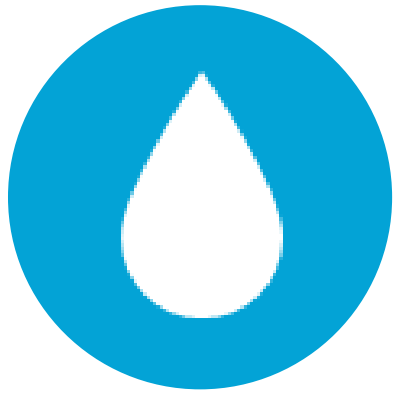
Accounts, service connections, and meters used interchangeably

Staff may answer the same question inconsistently, or unintentionally provide incorrect information

Rapid-fire scan of your own systems

Blank vs. zero • fiscal vs. calendar year • gallons vs. CCF • changed rate codes • duplicate sites • manual overrides

The Three Elements of *Making Conservation a California Way of Life*



**Urban Water Use
Objective**



**CII Performance
Measures**

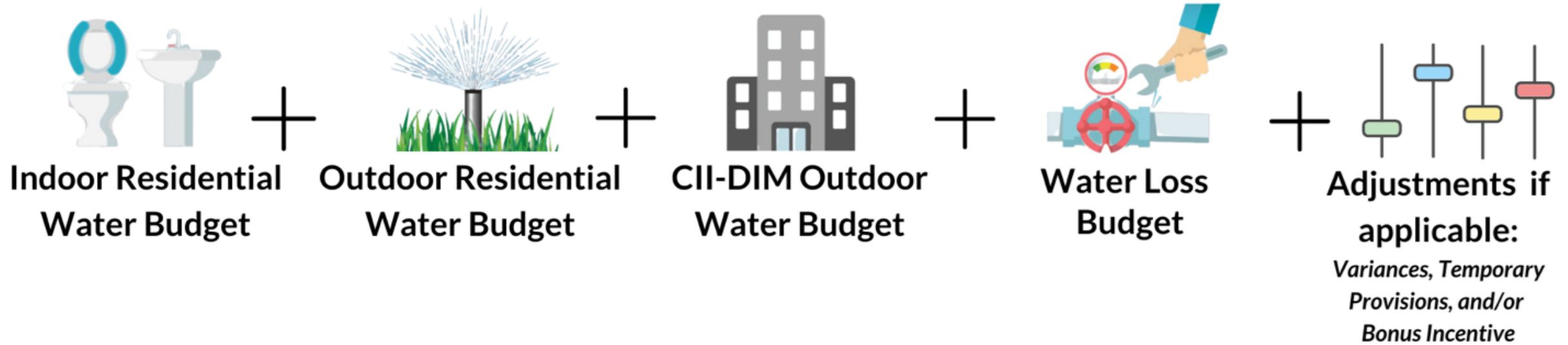


**Annual
Reporting**



Urban Water Use Objective

Providers cannot exceed the SUM of the standards



***Agriculture and indoor CII not part of objective, though indoor CII is covered by Performance Measures.**

Example of how data is used in objective calculation



| Residential service area population is pre-filled by the State



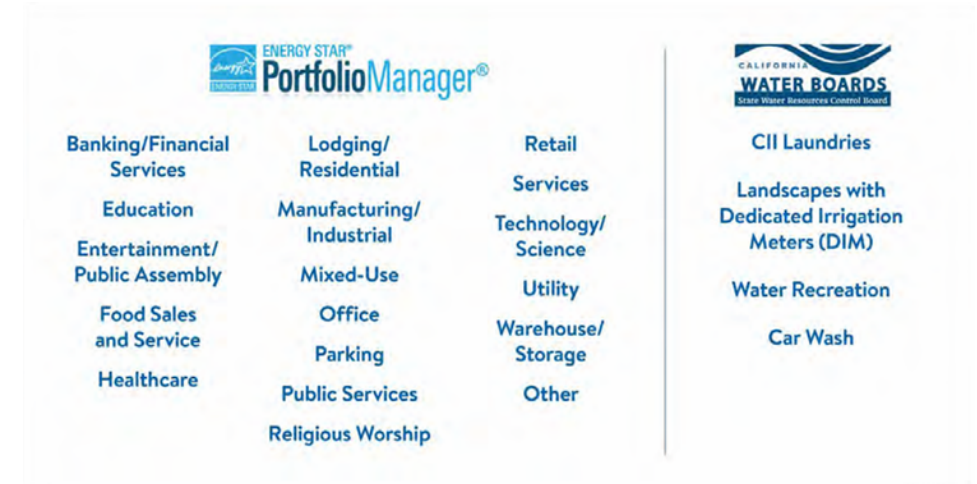
Performance Measures

Classify CII Customers

Identify High Water Users

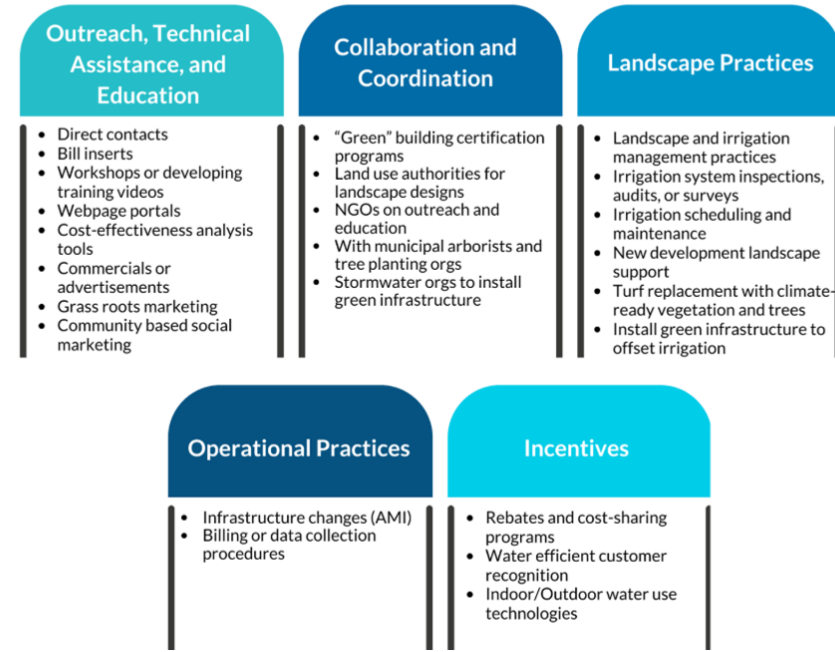
Deploy Best Management Practices (BMP)

Identify large landscapes with mixed-use meters and convert to DIMs or use in-lieu technology



Categories for Best Management Practices

This list is not exhaustive, and some programs may address multiple Best Management Practices (BMPs) simultaneously.





Annual Reporting

Annual Report due January 1st to State Water Board using their excel-based reporting template

Reporting began in 2025.

Compliance with the regulation is required beginning January 1, 2027.

Poll: Where does the data you reference for UWUO reporting live today?

1 Excel on a shared drive

5 Database or BI tool

2 Excel on someone's desktop

6 PDF in my email inbox

3 Billing system queries

7 Honestly not sure

4 GIS



Where should your data live?

- There is no one "right" answer.
- The goal is:
 - Accessibility
 - Quality control
 - Transparency
 - Consistent repeatable results.

Questions to Ask

- Can someone else find it?
- Can you reproduce the same information supplied last year from the original source?
- Will it survive if:
 - Your billing system changes
 - Staff departs
 - A GIS re-plat form
- Can we defend our reporting data?



The Role of Different Systems

System	Primary Role	Limitation
Billing/CIS	Customer consumption and classification	Not designed for long-term reporting
GIS	Spatial and asset information	Access and ability
Spreadsheets	Analysis and reporting assembly	Can be risky Should reference sources
Database / BI Tool	Consolidation and reporting	Not always appropriate

What works best for your organization?

Spreadsheet Red Flags

- ▣ Location, location, location
- ▣ Workflow includes copy and paste
- ▣ No documentation
- ▣ Data sources are unknown
- ▣ Only one person understands it



Requirements for Successful Reporting

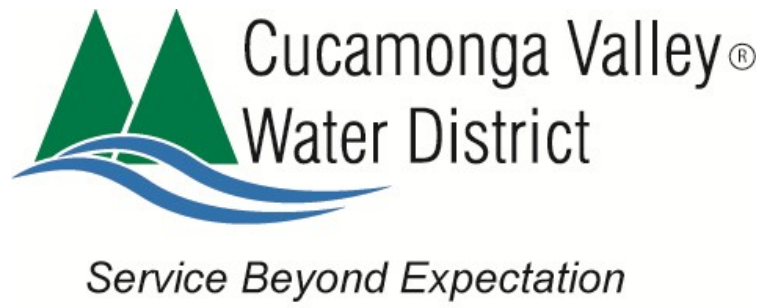
- Identifies the authoritative source.
- Documents how numbers are produced.
- Allows multiple people to reproduce results.
- Survives technology changes and staff turnover.

Ensure every reported number can be traced back to a trusted source and recreated by someone else.



Example of Tracking Data Sources

Data Point	Supplier's Internal Source	Internal Business Owner (Responsibility for preparing/using data)	Process Notes	Entry Method (Entry or Validate from other Report)
Connections & Accounts Total and by Classification	1. Geographic Info System 2. Customer Information System (Billing System)	1. GIS / Engineering Department 2. Customer Accounts Department	Use both systems to 'true up' and sort. Check for locations that changed classification or abandoned.	Validate
Landscape Area	1. Geographic Info System 2. Customer Info System 3. CA-DWR	Water Efficiency Department	1. Re-run and validate each year. 2. Re-run and validate / compare to GIS each year. 3. Validate each year.	Residential: Validate CII: Entry



CVWD Water Use Efficiency Journey

Public Affairs

- Landscape workshops
- Regional programs and rebates

Field Service

- Landscape surveys
- Landscape leak detection

Water Resources

- GPCD calculations
- Reporting

Making Conservation a
CA Way of Life

2024

Water Use Efficiency
“Department”



CVWD's Approach

Strategy

- Monthly Planning & WUE Department Meetings
- White board tracking, outlook tasks, calendars, and more!

Data Housing/ Sharing

- Excel, NaviLine CIS, ArcGIS, GeoViewer
- OneDrive, internal network of folders

Multi Department Coordination

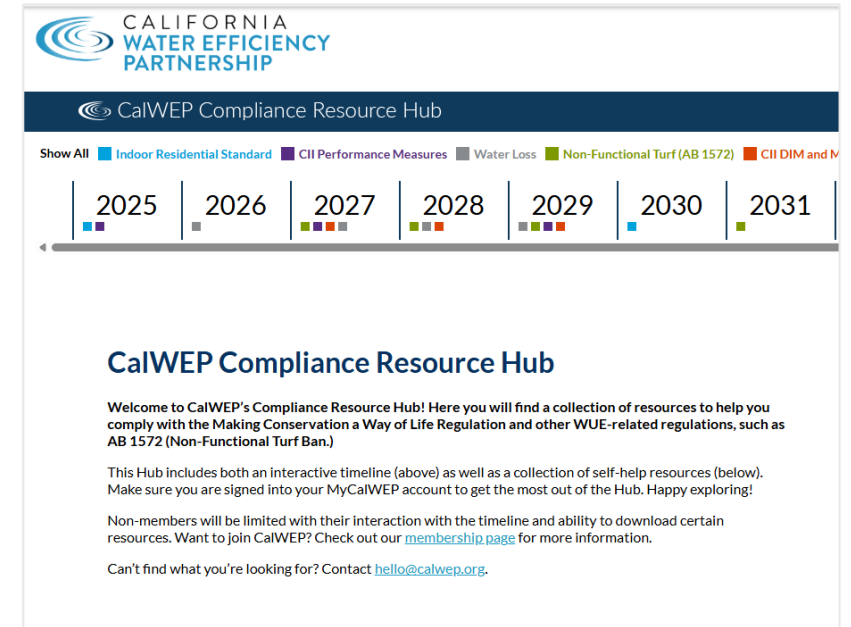
- Email, standing meetings, meetings as needed
- Still a work in progress!



2026 Annual Reporting				
		Due	PM	Status
FY	Water Loss Audit	Jan 1	Brenda	✓
FY	Urban Water Use Objective	Jan 1	Erin	✓
WY	GHG Recardation	Feb 1	Tiwon	✓
CY	NPDES	Mar 1	Brenda	✓
CY	CUPA	Mar 1	Carman	✓
CY	Annual Inventory (SAFER)	Mar 31	Chelli	✓
CY	Annual Report (CIWQS)	Apr 1	Shawn	✓
WY	CUC Basin SGMA	Apr 1	Tiwon	✓
CY	Electronic Annual Report	Apr 1	Carman	✓
FY	Water Supply/Demand (AWSDA)	July 1	Tiwon	✓
FY	Water Loss Questionnaire	July 1	Brenda	✓
	Well 22 Sampling	Jun 1	Chelli	
	IEUA Ten-Year Forecast	Aug 20	Christian	
ing Staff Reports				
Eng Com		Board		
July - Jersey GOE		July - Jersey/Richland GOE		

What has Worked Well

- Ongoing communication and task tracking
- SOPs including how long reports typically take
- Working backwards and setting timelines months ahead of deadlines
- Clearly labeled files; working files vs. final report files
- LOTS OF ADVANCED NOTICE for data requests and anything needed from other departments
- Communicating these requests are state driven and required
- Creating a local water use efficiency workgroup with neighboring agencies and leaning on each other
- Participating in webinars and workgroups as much as possible
- Tapping into larger water agencies, state associations, and consultants for help



What we are working on...

- Streamlining consumption data reports
- Integrating data platforms and other department processes
- Computer processing power and access to software is a challenge
- Getting more efficient as reporting demands increase



Service Beyond Expectation

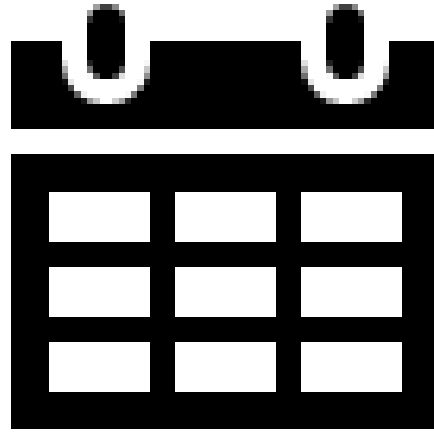
Thank you!

Erin Morales
Water Use Efficiency Program Supervisor
Erinm@CVWDwater.com

Developing a Reporting Calendar

Melissa Matlock, CalWEP





UWUO Report is Built Throughout the Year

January 1st Is the Last Stop, Not the Starting Point

- UWUO relies on data reported and validated throughout the year
- Some inputs may already be finalized before December
- **Start early. Reconcile often.**

UWUO Is the Last Stop on a Year-Round Journey

Multiple reports. One connected process.

Plan early.
Reconcile often.
A smoother arrival.

*Same data.
Stronger water futures.*

**JAN
(START)**

Q1
Build the Foundation

Q2
Validate and Confirm

Q3
Prepare Adjustments

Q4
Incorporate Final Data

**JAN 1
UWUO DUE**



SAFER

Production
data and
connections



eAR

System and
customer
data



AIR

Additional
information
report

- Submit required reports
- Check data for accuracy
- Ensure consistency across reports
- Address any data issues early



Water Loss Audit

Prepare and validate
your water loss audit

- Compile and review data
- Complete validation
- Resolve discrepancies
- Be ready for submission



Alternative Data

Explore and
prepare



Variance Requests

Submit, as
needed



New Landscapes

Track new
connections and
landscape changes

- Evaluate alternative data options
- Prepare and submit variance requests
- Monitor new connections and landscape area changes



Climate Data Available

ETo and Effective
Precipitation

- Review published ETo and effective precipitation
- Incorporate into calculations
- Finalize all inputs
- Complete internal review



UWUO DUE

Annual Water
Use Report

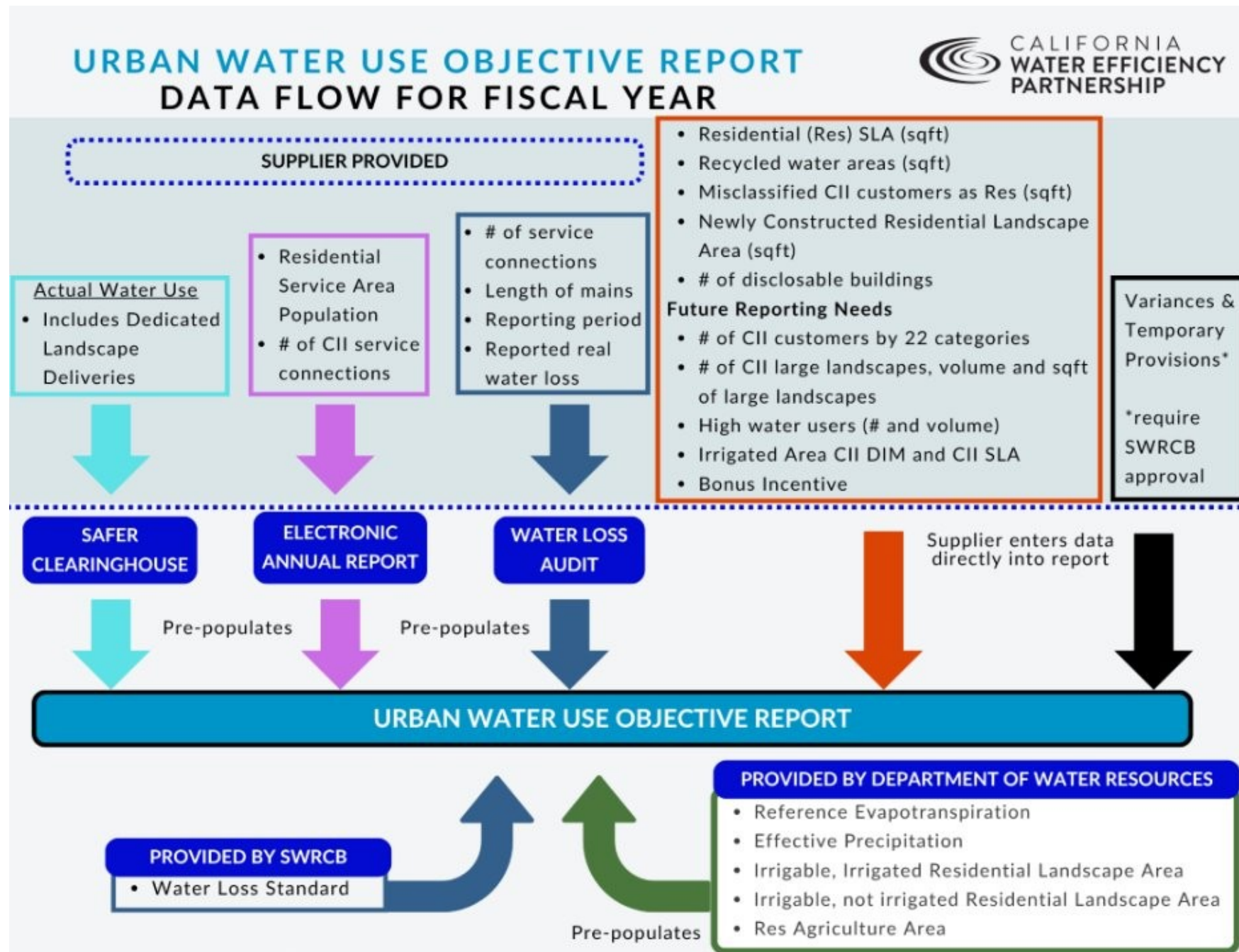
- Complete final QA/QC
- Obtain internal approval
- Submit by January 1

REVIEW • RECONCILE • CORRECT • DOCUMENT (ALL YEAR)

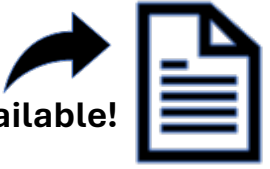
Accurate data today. A more resilient tomorrow.



Know Your Upstream Data



Also monitor: • New connections • Development changes • GSP data, where applicable



Your Year-Round Reporting Rhythm

Q1 | Review, Correct & Prepare

- ☐ Review last year's **UWUO report**
- ☐ Review **State Water Board-generated summary** for data issues and flags
- ☐ Prepare **eAR and AIR**
- ☐ Update/reconcile **SAFER reporting** accordingly
- ☐ Begin tracking **landscape changes**
- ☐ Review **CII classification counts**
- ☐ Identify potential **variance data needs early**

Q2 | Reconcile & Get Ahead

- ☐ Continue monitoring **landscape changes**
- ☐ Recheck **CII classification counts**
- ☐ Prepare for applicable **July 1 deadlines**
- ☐ Continue collecting data needed for potential **variances**
- ☐ Resolve discrepancies while source data can still be addressed

Q3 | Variances & Readiness

- ☐ Pursue **variance requests**, if applicable
- ☐ Prepare/update **variance status**
- ☐ Confirm supporting data collected in Q1–Q2
- ☐ Check that upstream reporting is aligned
- ☐ Identify unresolved issues **before Q4**

Your Year-Round Reporting Rhythm - Q4

October

- ☐ Review **updated reporting forms**
- ☐ Attend webinars / review **reporting form changes**
- ☐ Review impact of **ETo + effective precipitation**
- ☐ Begin pulling data into the UWUO

November

- ☐ Complete the **draft report**
- ☐ Begin team **QA/QC**
- ☐ Check: *How are we looking against the objective?*
- ☐ Resolve remaining **data questions or clarifications**
- ☐ Confirm any new reporting requirements

December

- ☐ **Week 1:** Finalize the report
- ☐ **Week 2:** Obtain signature on certification form
- ☐ Upload and submit **before the holidays**
- ☐ Don't make December the month you discover an upstream data problem

The goal: By December, you are finalizing the report — not figuring out the data.

Spread the Work

- A little work each month can go a long way
- Steady work each month (even just ~5 hours/month) leads to:
 - More accurate data
 - Fewer surprises
 - Less stress
 - Time for more quality review
 - Smoother submittal



Data Governance for Busy People



Data governance, for busy people

Data governance is deciding what a value means, where it comes from, who is responsible, and how changes are handled.

1

Shared meaning

Use the same definitions, units, and time periods.

2

Clear responsibility

Name the person who owns each critical value and a backup.

3

Visible and repeatable

Keep enough source, method, and change information to redo the work.

Minimum viable data governance

A few critical detailed tracked per reporting value. This could just be a "How to Submit the UWUO report" Word doc in Sharepoint.

1

Definition

What exactly are we counting or calculating?

2

Source

Which system, report, table, or file is authoritative?

3

Method

How was the value produced, including filters and time treatment?

4

Nuance

What local exceptions, code changes, or oddities matter?

5

Ownership

Who owns it, and who is the backup?

Example method note: “Export an Excel file from the billing system using these filters set to these values, then sum up the total. [SCREENSHOT INCLUDED]”

City of Oceanside

Water Utilities Department

September 22, 2026



Overview



- 174,000 residents, 45,000 connections, fully AMI
 - Full service - potable, recycled & advanced treated water and wastewater services
 - Water Use Efficiency – 3 full-time staff
- Customer service, water loss reporting, outreach, AMI, UWMP, Ag programs, SAFER, UWUO, NFT, wholesaler reports, landscape contest, etc.

Tools



- **Excel** - data storage and calculations
- **Instruction Sheets** – basic step-by-step that anyone could follow
- **File Explorer** – store original data and reports
- **Outlook Calendar** – reminders and completion tracking

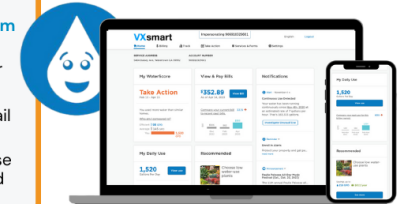
Top Tips

- Every report has a lead assigned
- At least once a year, someone else does the report
- To get data from others, make clear, complete requests well in advance
- Get to know staff providing the source data

Want to stay in the know
about your H₂O?

Try WaterSmart- our free and secure tool for
managing your water

- 1) Log onto oceanside.watersmart.com
- 2) Enter the 12-digit customer-account number found on your water bill
- 3) Register with a valid email address and password
- 4) Customize your water use profile, set usage alerts, and much more!



Top Tips, con't



- For annual reports, check in on data during the year
- Save and date your work as you go
- Plan for consistency
 - Include conversion calculations in Excel tables
 - Decide where rounding will happen
- Document decisions

Word doc –detailed step by step

Downloading the Form

1. To download the [form](#) you can access it on the [WUE Data porta](#)

WUEdata - Resources for Urban Water Suppliers	
Resources for Urban Water Suppliers	
Document Title +	Description
0-ReportingPackage_FY2324_v2.3.zip	Urban Water Use Objective Reporting Form and Guidance
AWSDA-ReportingTables-2024-05-01.xlsx	This is the workbook of templates to submit the Annual Water Shortage Report 1st. for all urban water suppliers into WUEdata.
AWSDA-Final-Guidance-4-2022.pdf	This is the final guidance to prepare and submit the Annual Water Shortage Report water suppliers into WUEdata.
AWSDA-Guidance-Addendum-2024-Update.pdf	This document is intended to provide additional clarifications to the AWSDA Guidance respect to the Shortage Report submittals on WUEdata.
Appendix F UWMP 2020.xlsx	This is the Checklist from the UWMP 2020 Guidebook (Appendix F) offered as a by those preparing UWMPs.

2. This will have the Certification Statement documents and the Form use the reporting form w VBA (stands for Visual Basic for Applications) populate a lot of information. Remember to update this on the form order to keep the document up to date. They update the document 10/2025.
3. You can open the [Guidance](#) document and use that alongside the valuable background and information about where certain information

Within the document: Landing and Navigation

Under Urban Retail Water Supplier Contact Information (Required)

1. Line 11
 - a. Choose 'Oceanside City of'
2. Line 14-19
 - a. Fill out the appropriate contact information

Excel – one tab per input

Volume from Own Sources	
DATA	
From Consumption Report	
G:\Water Efficiency\Consumption Data\Summary Reports	
Cell N51, combination of meters 320 and 511	
NOTES	
Pure - need to treat it separately? No, because this is metering after treatment	
own sources is what is processed at Mission Basin.	
DATA VALIDITY GRADE	
0. yes, we have supply from own sources	
1. all metered	
2. no electronic calibration	
3. n/a based on #2	
4. n/a based on #2	
5. in situ flow testing annually	
6. results available for review	
7. at 3 +/-	
Introduction	Volume Own Sources
ILI notes	WSEA - Vol Own
Water Import	WSEA

5			
6	Avg Flow (gpm)	404.96	128
7	Run Days (count)	21	
8	Total Flow (MG)	11.72	2
9	Avg Flow (MGD)	0.583	0.1
10	Total Flow (Ac-Ft)	35.97	6
11	Run Time (days)	20.10	11

Build in conversions

Thank you

Elisa Marrone, Water Efficiency Program Manager
EMarrone@Oceansideca.org

Emyle Rogers, Management Analyst
ERogers@Oceansideca.org

Edwin Juarez, Water Efficiency Specialist I
EJuarez@Oceansideca.org

WaterEfficiency@Oceansideca.org



Poll: What is your goal for the next year?

Choose the improvement that would make the biggest difference to your reporting process.

1

Report on time

5

Write down the process

2

Build a reporting rhythm

6

Reduce reporting stress

3

Check data earlier

7

Ask someone else to do it / retire

4

Build the reporting team

Pick one. A focused improvement is more useful than an ambitious plan that cannot be maintained.

Next Steps

- Upcoming webinar on landscape area measurement data
- ETo and effective precipitation data coming in October
- Begin engaging with agencies for the technical assistance pilot
- Reminder – Deadline to request variances and temporary provisions is October 1

Questions?

WaterConservation@waterboards.ca.gov

Reference Material