

Western Municipal Water District Drought Monitoring Framework

Proposed Outline

Created September 27, 2021

The following Drought Monitoring Framework was created based on the feedback received at the August 23rd virtual Drought Task Force workshop:

Process and Data

- Which indicators should the region use?
- How often should they be compiled/updated and shared with the group?
- What information should be shared with the public?

Triggers

- How should regional drought stages be defined?
- What conditions should trigger a regional response? (i.e., 2 or more local water agencies are in a WSCP stage)

Communication

- What level of regional collaboration and communication tools should always be in place?
- What more should we do some agencies in the region are experiencing a supply shortage?
- What is in our communication toolbox now? What else do we need?

Other Regional Water Shortage Responses

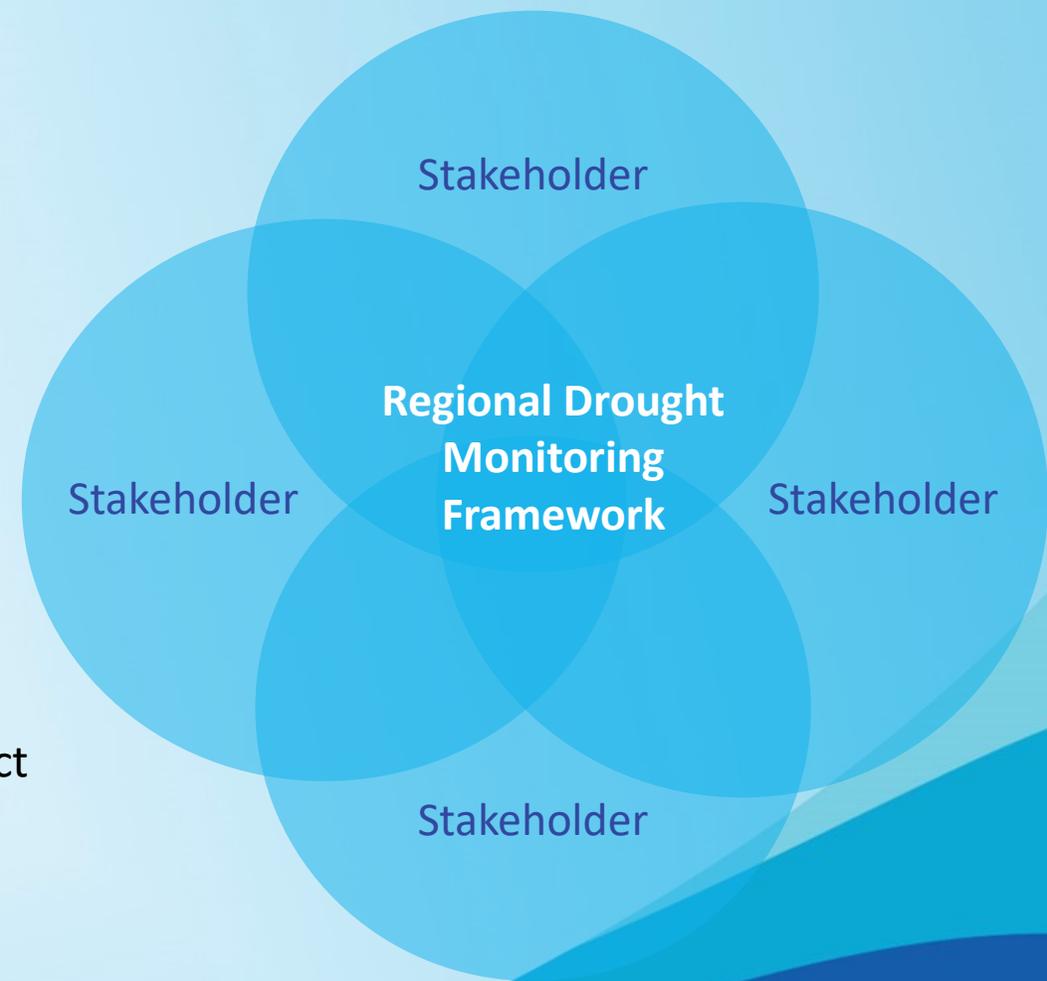
- Besides consistent communication, what other actions could be taken regionally?
- How could we support one another during a drought?



Summary

DROUGHT MONITORING FRAMEWORK (DMF)

- **Goals**
 - *Support existing activities and programs*
 - *Improve regional coordination and information sharing regarding droughts and shortages*
- The DMF will be included in the Western Municipal Water District (WMWD) Drought Contingency Plan (DCP), which is expected to be completed in early 2022.
- Provide additional mechanisms for engagement and coordination among regional stakeholders as well as a tools and resources for communication and collaboration.



DMF TM (Proposed) Outline

1. Introduction

- Purpose of the TM
- Drought Monitoring Framework defined

2. Current Drought Monitoring Efforts

- Review the various drought monitoring and related activities of the regional stakeholders

3. Regional Coordination and Framework

- Outline coordination and information sharing frameworks

Current Drought Monitoring Efforts

- Summarize drought monitoring and related activities of regional stakeholders within the WMWD
 - Each stakeholder has a different approach to monitoring conditions in their respective areas
 - Summaries will focus on how droughts and water shortages are predicted and defined.
 - Metropolitan WSAP
 - Arlington Groundwater Subbasin GSP
 - Annual Water Supply and Demand Assessments
 - WSCPs /DCPs/General drought monitoring
- A crosswalk evaluation across the stakeholder drought monitoring efforts will highlight similarities and differences among efforts

Draft Summary of Agency WSCP Contents

Regional Drought Stages

Agency	Stage 1 Supply Reduction (%)	Stage 2 Supply Reduction (%)	Stage 3 Supply Reduction (%)	Stage 4 Supply Reduction (%)	Stage 5 Supply Reduction (%)
City of Corona	10%	20%	30%	40%	50%
City of Norco	0%	< 15%	15 - 20 %	20 - 50 %	> 50 %
City of Riverside	0 - 5 %	20%	30%	40%	50%
Elsinore Valley MWD	5%	10%	25%	40%	50%
Jurupa CSD	10%	10% – 20%	20% – 30%	30% – 40%	40% +
Rancho California WD	0 - 10%	10% – 20%	20% – 30%	30% – 40%	40 - 50 %
Riverside Highland Water Company	10%	25%	35%	50%	-
Rubidoux CSD	10%	20%	30%	40%	50%

Regional Coordination and Framework

The two key elements of the proposed regional coordination will be the development of a *Regional Drought Portal* and the establishment of a Regional Drought Task Force with an agreed upon meeting frequency.

Regional Drought Portal

Provide a platform to post, collect, and disseminate key datasets



Stakeholders/Task Force Meetings

Provide a forum for the members to review data, share updates, and coordinate responses and messaging



Regional Coordination and Framework

Regional Drought Portal

Provide a platform to post, collect, and disseminate key datasets



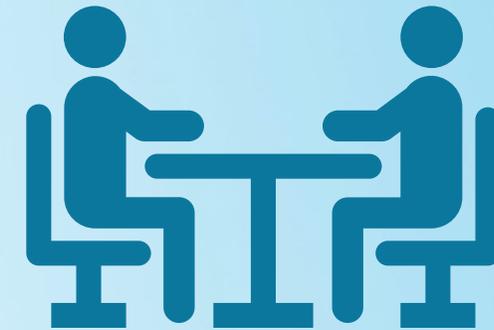
Data Updated Quarterly (where applicable)

- Local Conditions (groundwater levels, precipitation, storage, Met WSAP, etc.)
- Statewide Conditions:(reservoir levels, regional drought indices, statewide declarations, etc.)

Regional Coordination and Framework

- Criteria and triggers for convening based on conditions in the region and within the supply catchment areas.
 - U.S. Drought monitor, WSAP, County Emergency Proclamations, Agency Shortages
- If one or more trigger is met, the meeting frequency will be increased to the corresponding interval.

Stakeholders/Task Force Meetings



Regional Drought Stage	Meeting Frequency	Triggers			
		Drought Monitor	WSAP	Agencies in Declared Shortage	Riverside County Drought Proclamation
Normal	Annual	None-Abnormally Dry	Levels 1 and 2	None	--
Watch	Quarterly	Moderate-Extreme Drought	Levels 3 thru 5	3 or more	Drought
Alert	Monthly	Exceptional Drought	Levels 6 thru 8	6 or more	Drought
Emergency	Weekly	Exceptional Drought	Levels 9 and 10	10 or more	Drought

County Drought Emergency Proclamation

Regional Coordination

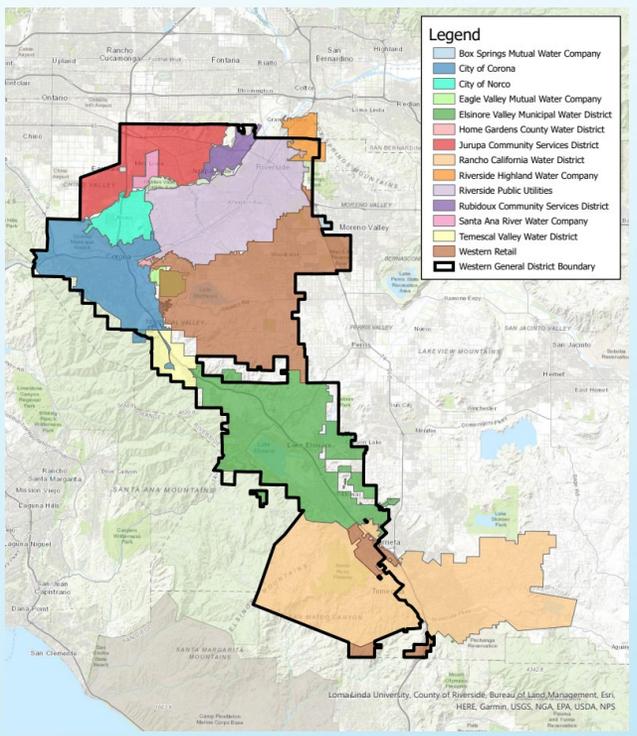
Task Force Meetings Criteria Detail



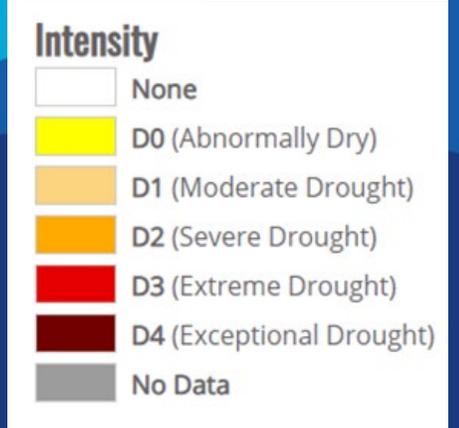
Metropolitan WSAP

Regional Shortage Level	Wholesale Minimum %	Max Retail Impact Adjustment %
1	92.5%	2.5%
2	85.0%	5.0%
3	77.5%	7.5%
4	70.0%	10%
5	62.5%	12.5%
6	55.0%	15.0%
7	47.5%	17.5%
8	40.0%	20.0%
9	32.5%	22.5%
10	25.0%	25%

Agencies in Declared Shortage



U.S. Drought Monitor



Drought Task Force Workshop No. 3: Regional Drought Monitoring Framework Summary

Western Municipal Water District
August 23, 2021 • 2:00 p.m. – 4:00 p.m.

The August 23, 2021 virtual workshop was attended by members of the Western Drought Task Force. The group participated in a small group exercises to inform a **Drought Monitoring Framework** for the region.

Following is the input from the Task Force discussions.



Process and Data

- Which indicators should the region use?
- How often should they be compiled/updated and shared with the group?
- What information should be shared with the public?

ENCLOSED ARE ALL RESPONSES TO PROCESS AND DATA QUESTIONS

- Groundwater levels, feel comfortable sharing with watermasters and outside. Collected on outside basis.
- Dependent on local vs. imported supply. Statewide percentages
- Track precipitation and levels of reservoirs that are more connected with water supplies. Paying a lot of attention to CO River and Lake Meade. Track precipitation in No. CA and Co. River Basin
- Region select existing rain gauges to all work from same numbers.
- MET storage to manage drought condition, which defines how MET will manage drought.
- Share out quarterly. Initial numbers come out in December, again in March, then assess.
- If there is a sharing process/report in place, we can latch onto that.
- Quarterly give glimpse into seasonality of numbers.
- If there is a concise set of metrics that is quickly digestible, maybe send more often. Comprehensive data sent quarterly.
- A lot of information is already getting to the public through the media, especially during a drought.
- More education and communication about groundwater levels to the public.
- What is the relevance of the numbers (groundwater, lake levels, precipitation etc.)
- Information to be shared: more the better; info for today but also what the future is saying/scenarios ex: 2021 looks good, but if 2021 conditions continue what would that look like in 2022; don't hold back

Process and Data

- Which indicators should the region use?
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ENCLOSED ARE ALL RESPONSES TO PROCESS AND DATA QUESTIONS

- Recognizing water supply portfolio; track state indicators and projections on imported water supplies from SWP
- MWD sharing data and impacts on allocations
- SWP deliveries on regional use
- MWD has storages and supply tracking (improve/get worse over time)
- Indicators are spanning wet season (Oct-April) in Northern California Area to help us know how to respond locally
- Interagency agreements coming into play (emergency situations)
- How often - at least monthly to get best sense of where we are going
- Wholesale agencies share with retail agencies within their service areas
- Broad messaging to general public- very open and informed of impacts to encourages WUE and conservation
- Helping people motivate to change behavior
- Echoing similar statements for public information; individual city having a different message then neighboring city can create inconsistencies in public; what is wholesaler saying; 1 message regionally or for multiple cities
- Needs to be a comprehensive indicator - supply available, projected use, % of the demand that is efficient (i.e. 15%)
- Percentage of water use that is considered efficient (calc based on population, GPCD may not be the best indicator)
- Regional consumption based on aggregate GPCD - compare across all agencies in the region - Valley District has been doing this
- Specific drought indices - Palmer drought index - temp, precipitation, soil moisture. Quantitative measure of drought. Updated monthly, accounts for previous conditions.
- Objective drought index - maybe an interactive platform to dig in to get more info.
- Complimentary to human activities represented in overall supply and demand.
- Rain gauge - cumulative departure from long-term mean precipitation - shows periods of drought over time. Helps correlate to when GW levels are dropping.

Process and Data

- Which indicators should the region use?
- How often should they be compiled/updated and shared with the group?
- What information should be shared with the public?

ENCLOSED ARE ALL RESPONSES TO PROCESS AND DATA QUESTIONS

- Drought indices are public anyway, updated maybe daily
- Need to consider HOW to present this info to the public and what the message is.
- monthly for drought indices
- monthly for GPCD info (based on state reporting requirements), supply is annual
- Take advantage of as many existing monitoring programs. Consolidate efforts where you can.
- Met, as a supplier, looks at delivered volumes as a good indicator.
- Tracking imported volumes of water used for groundwater banking/recharge and delivered directly to end users.
- For agencies with groundwater banking, keeping track of and reporting banked water supplies.
- Met acknowledges groundwater recharge activities as part of their demand projections.
- Local and regional messages would and should be crafted differently. But also include information on the broader conditions for context
- Sharing and reporting requirements should be flexible to allow for adjustment when things change.
- The projections are based on Met's customers' projections for usage and banking activities.
- There are regional indicators, but there are other factors at play. Even just the last 6 months there have been big changes in messages about level of preparedness.
- Indicators need to include more factors than the region and take a broader view. (i.e. hydrologic conditions in N. CA).
- Counties in the state with shortage
- Water Storage in the region, prediction of native water.
- Data is released in February. Includes 5-year predictions. Annually produced.
- Information would be shared annually, bi-annually, and/or as there are major changes.
- Drought declarations would be public.
- There are numerous regional indicators available which should be used, but they also need to include the broader statewide conditions (i.e. conditions in northern CA).
- Some Examples: Agencies have regional projecting that the do, Number of Counties in shortage, Statewide declarations

Triggers

- How should regional drought stages be defined?
- What conditions should trigger a regional response? (i.e., 2 or more local water agencies are in a WSCP stage)

ENCLOSED ARE ALL RESPONSES TO THE TRIGGERS QUESTIONS

- Qualitative triggers are easier in some ways to implement, but qualitative triggers are important to consider as well.
- Quantitatively defining drought would be helpful
- There are annual and 5-year type planning that goes on.
- MET and or State proclamations being more qualitative ways to define stages
- Rate tiers are very effective ways to reduce demand
- A more qualitative approach would be appropriate for Western, given the diversity the region's supply portfolio.
- It's the fairest approach to account for existing banking projects, rather than making an assessment based on only the annual supply and demand assessment.
- In terms of defining a trigger based on the number of retail agencies at a drought stage, it can be difficult if they have different definitions.
- Don't want to be too prescriptive.
- In terms of defining a trigger based on the number of retail agencies at a drought stage, it can be difficult if they have different definitions.
- Quantitative definitions can be too proscriptive.
- A more qualitative approach would be appropriate for Western, given the diversity the region's supply portfolio.
- It's the fairest approach to account for existing banking projects, rather than making an assessment based on only the annual supply and demand assessment.
- Drought stages have been defined in the Palmer Drought Index, don't need to redefine them
- The DCP could be part of the assessment that triggers the actions in a WSCP so that may not be a good input
- Regional response is subjective, needs to be based on group consensus. Stages could mean something different to each agency.
- Also need consider mandates the state could impose.
- What are the indicators that people will see that will drive them to move to regional communication vs. individual responses?
- Locally, still in a long-term drought. Distinguish between the local drought and northern California drought.
- Focusing on local conditions is more fruitful, imported water is supplemental to support long-term reliability.

Triggers

- How should regional drought stages be defined?
- What conditions should trigger a regional response? (i.e., 2 or more local water agencies are in a WSCP stage)

ENCLOSED ARE ALL RESPONSES TO THE TRIGGERS QUESTIONS

- Need to be able to separate a 1-year drought from a long-term drought (severity/amplitude + duration are both important) - has different impacts and requires a different kind of action. i.e. a 2 on the Palmer index maps to a Stage 2 in the WSCP
- Challenges with regional response - number of agencies are interconnected
- Regional response can have an impact
- Some agencies are not as interconnected that have a unique situation
- Take that into account (sensitivity of the triggers)
- Water shortage
- What the state might propose might not be the best for our region
- Brown 25% mandates - WUE conservation were given undue burden since they had already done so much proactively
- Regional approach catered to region (state is helpful), but tie it more to portfolio and storage and supply
- So many individual agencies and each one has greater resources than another- universal switch would be problematic (many agency problem vs 1-2 agencies bringing the level down)
- Encourage awareness of unique assets and local agencies have in times of drought and what was done in the past (demand hardening?)
- Tribal agency can define drought any time of the year. Still trying to define it for themselves, are currently following the state's lead.
- Reactive, depends on another declaration before they adopt.
- Regional drought map already exists. Color-coded. May mirror those stages. Drought Monitor.
- Why are we defining drought as a region? Different agencies have varied ways of measuring that they use for different purposes.
- They normally wait for MET or DWR to define/declare. These will be the most impactful to water shortages.
- Find ways to proactive and to educate/inform around drought. Constantly messaging the unique challenges of living in Southern CA and water supply/conservation
- Depends on the agency, needs flexibility based on local differences regional follow what the state puts out - voluntary 18% reduction

Communication

- What level of regional collaboration and communication tools should always be in place?
- What more should we do some agencies in the region are experiencing a supply shortage?
- What is in our communication toolbox now? What else do we need?

ENCLOSED ARE ALL RESPONSES TO THE COMMUNICATION QUESTIONS

- Set up quick, formal stakeholder meeting/quarterly gathering for updates.
- Message board or webpage for agencies to share their information and collaborate.
- Utilize technology to collaborate - Teams, One Drive, GIS, etc.
- Fact sheets for when an agency is experiencing a shortage.
- Level of regional collaboration - always readily available on websites
- Resources and tools, data assistance, funding agencies can use and access to implement WUE and conservation measures
- Keep that strong and readily available for all water agencies to use
- Track agencies in shortage and continue to make a dialog within regional and local agencies for issues
- Proactive planning
- Toolbox - awareness of state demands and legislation, Water budgets tools, water blog and website talks about quality of water supply, impacts due to drought, public informed (yoursocaltapwater website)
- Link agency websites to one main hub for general public access
- Where agency boundaries back up to each other, increase communication/collaboration so others can be aware before neighbors start talking.
- Western used to water conservation workshops; more opportunity to collaborate with Lowes, workshops to swap out toilet, check for leaks
- Video/education series (hurdles: scary, new to it)
- Communication to each of the target audiences in the language they are comfortable (native language and industry language)
- Consistent messaging - water conservation a way of life
- Year-round resources
- Corona discussing internally to get the word out
- Easy to follow posts on what the differences are and why conserve 24/7 and difference between current situation and the past fatigue in messaging
- How do we express where we are now
- Communicate to the public

Communication

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ENCLOSED ARE ALL RESPONSES TO THE COMMUNICATION QUESTIONS

- Get informed when an agency has a shortage to see how agencies can help and to pass information on to their customers as a caution.
- share success stories (monthly/ quarterly), find customer that have gone above and beyond and what they saved; how they saved, and dollar savings
- In April/May of every year, Met reviews its supply and makes recommendations on which water supply stage the agency is at. Effective from July 1st to June 30th.
- If water supply allocation is necessary, Met would communicate this in April/May.
- Regional coordination and communication is very important.
- As much advanced warning as they can give.
- When are private end users affected?
- Public outreach teams with each agency.
- Establish a working group amongst that group to establish the messages and strategies.
- While regional messages are helpful, there is also a need for flexibility for areas to adjust the messages for their customer base.
- Social media is a powerful tool in use now
- Last year it was save water vs now we REALLY want them to save water re-educate and continue to educate the public on what is being done, what has been done, and what can be done in the future
- Agencies have already done a lot
- Tap into resources; constantly evolving
- Regional collaboration around messaging would be helpful.

Other Regional Water Shortage Responses

- Besides consistent communication, what other actions could be taken regionally?
- How could we support one another during a drought?

ENCLOSED ARE ALL RESPONSES TO THE REGIONAL RESPONSES QUESTIONS

- Continue to let legislators know of the need for their support as state funding becomes available
- Areas of need for improvements in the region (small mutuals), failing infrastructure, assistance in grant applications
- Interagency agreements to help each other (connectiveness) to ensure safe, reliable water being delivered
- Larger regional entities to help assist in diversified portfolios and drought scenarios
- always a concern is making sure drought response aren't picking winners or losers, determining who can go forward or not
- All types of water usage (outdoor is first to be looked at because its easy to monitor or manage)
- Harder to see a 30-minute shower
- Both can be wasteful- water budget approach addresses all water uses and incentivizes people to conserve everywhere;
- grants or more knowledge to upgrade system to use more recycled water
- Helping us have money to convert businesses to reclaimed water