

Drought Task Force Workshop No. 2: Climate Change Vulnerability Assessment and Drought Response Actions

Western Municipal Water District

February 10, 2021 • 2:00 p.m. – 5:00 p.m.



Quick Zoom orientation



Workshop goals

- Finalize drought goals / guiding principles

- Gather group input to define drought response actions

- Inform group on the purpose, process and use of the Climate Change Vulnerability Assessment



Workshop agenda

- 10 min **GROUNDING:** Project Overview, Group Roster

- 45 min **SMALL GROUP ACTIVITIES**
Continuation of Drought Goals
>> 5 MIN BREAK

- 50 min Drought Response Actions
>> 5 MIN BREAK

- 10 min **PRESENTATION:** Supply and Demand Analysis Overview
- 20 min **PRESENTATION:** Climate Change Vulnerability Assessment

- 10 min What's Next and Grant Opportunities



Presenters



Tiffany Meyer
Stakeholder
Engagement Lead,
WSC



Laine Carlson
UWMP Lead,
WSC



**Melissa
Matlock**
Water Resources
Specialist II,
Western Municipal
Water District



Ashlee Casey
DCP Lead, GEI



Michelle Ricker
DCP Lead, GEI



**Kwabena
Asante,
Ph.D., P.E.**
Senior Hydrologist,
Climate Science
Lead, GEI



Who's here



28 organizations
8 segments

15% — Environmental and Conservation Groups

Inland Empire Resource Conservation District
Inland Empire Waterkeeper
Riverside-Corona Resource Conservation District
Santa Ana Watershed Project Authority (SAWPA) (2)

4% — Environmental and Social Justice

Center for Community Action and Environmental Justice

6% — Regional Government

Riverside County Flood Control and Water Conservation District
Western Riverside Council of Governments (WRCOG)

9% — Research

University of California, Riverside (2)
Water Resources Institute

4% — Retail: City

City of Murrieta

16% — Retail - Customer Stakeholder

Altman Plants
March Air Reserve Base
Vons/Kroger
Woodcrest MAC
Woodcrest MAC/ Riverside County

9% — Water Agency: Regional

Eastern Municipal Water District
Metropolitan Water District of Southern California
San Bernardino Valley Municipal Water District

37% — Water Agency: Western Member Agency

Box Springs Mutual
City of Corona (2)
City of Norco
Elsinore Valley Municipal Water District
Jurupa Community Services District
Rancho California Water District
Riverside Highland Water Company
Riverside Public Utilities
Rubidoux Community Services District (2)
Temescal Valley Water District



Project and Task Force overview

Melissa Matlock

Water Resources Specialist II, Western Municipal Water District



What is drought planning?

Actions taken by individual citizens, industry, government, and others before drought occurs to reduce or mitigate impacts and conflicts arising from drought.*

*National Drought Mitigation Center website



Drought contingency planning and task force role

<p>PLANNING CONSIDERATION</p>	<p>How will drought affect us?</p>	<p>How will we recognize the next drought in the early stages?</p>	<p>How can we protect ourselves from the next drought?</p>
 <p>DCP ELEMENT</p>	<p>Climate Change Vulnerability Assessment</p>	<p>Drought Monitoring Framework</p>	<p>Climate Change Vulnerability Assessment</p>
 <p>TASK FORCE INPUT</p>	<p>Workshops No. 2-3</p>	<p>Workshops No. 4</p>	<p>Workshops No. 2-3 and Workshop No. 5</p>

5 steps to the Drought Contingency Plan (DCP)

Step 1. Determine Future Demands



DCP uses UWMP demand projections.

Step 2. Evaluate Existing Supply Reliability



DCP develops robust Climate Change Vulnerability Assessment and informs UWMP Drought Risk Assessment and Supply Reliability Analysis.

Step 3. Develop Future Supply & Response / Mitigation Options



DCP builds on drought response actions from UWMPs and WSCP; develops a drought monitoring framework, defines mitigation activities and projects to build drought resilience.

Step 4. Develop Implementation Plan



DCP identifies process for implementing drought monitoring, initiating actions during drought conditions and communicating with the public.

Step 5. Document the Plan



DCP will establish a process for future updates to keep the plan dynamic and undergo public review and adoption process.

Plan due to USBR
end of 2022

WE ARE HERE

Task force role



Drought Task Force

Represent and share regional stakeholder interests, needs in plan development.



General Public

Public comment periods



EOWR Committee

Advises Board of Directors on water policy decisions.



Western Board of Directors

Adopts the plan.

Share Perceptions / Opinions

Recommend

Decide



Task force representation



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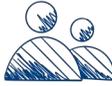
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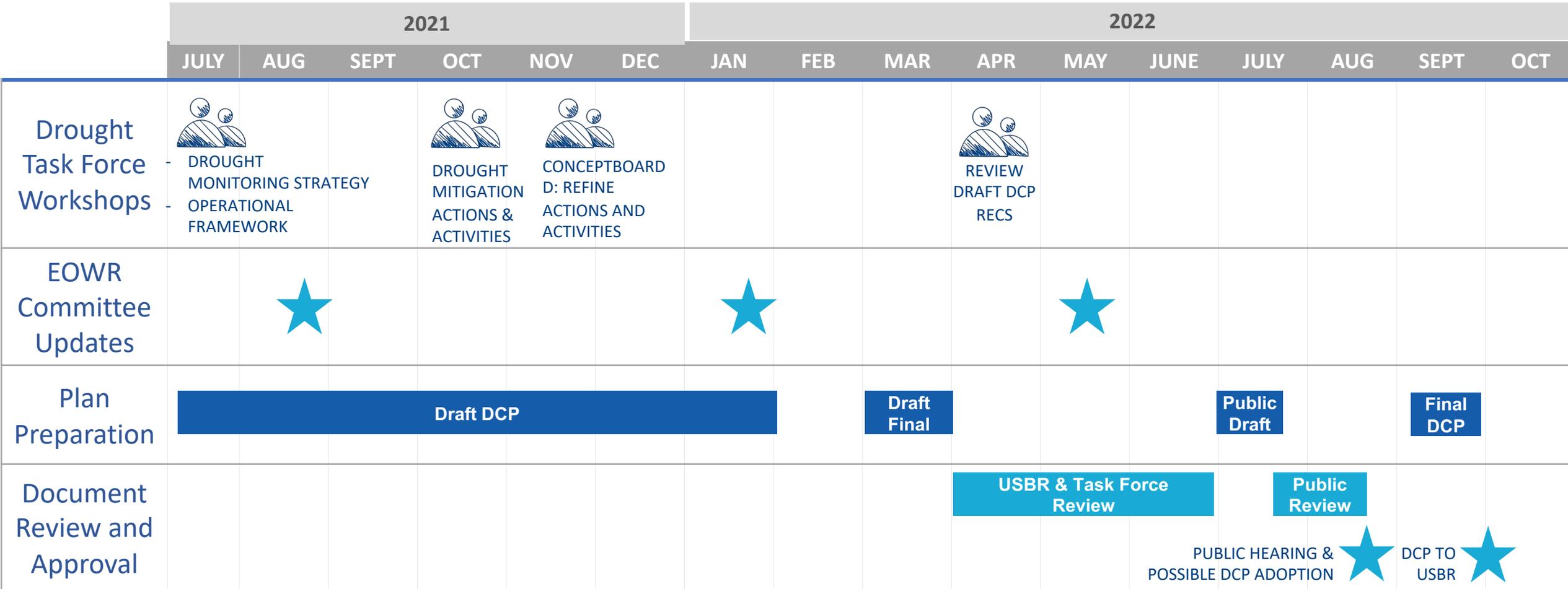


Engagement timeline — UWMP

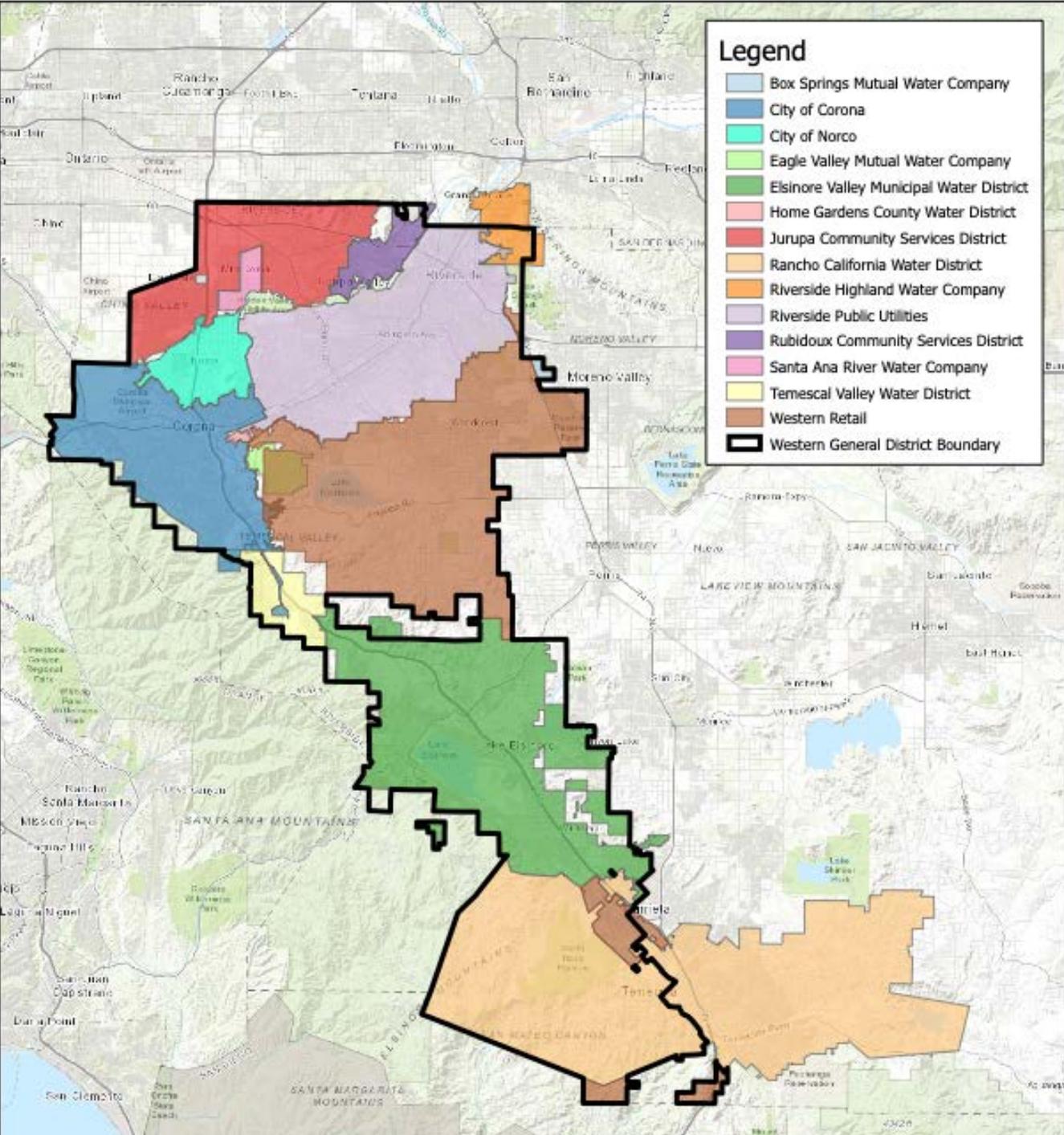
	2020		2021		2021			
	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY
Drought Task Force Workshops		 <ul style="list-style-type: none"> •KICKOFF •OVERVIEW •GOALS 	 <ul style="list-style-type: none"> •DEMANDS •CLIMATE CHANGE VULNERABILITY •DOUGHT RESPONSE ACTIONS 		 <ul style="list-style-type: none"> REVIEW DRAFT UWMP RECS 			
EOWR Committee Updates			★	★		★		
Plan Preparation	Water Shortage Contingency Plan				Draft Final		Final WSCP	
	Draft UWMP				Draft Final		Final UWMP	
Document Review and Approval					Public Review			
					PUBLIC HEARING & POSSIBLE UWMP & WSCP ADOPTION		★	UWMP DUE TO DWR ★



Engagement timeline — DCP



Western's service region considered in the DCP



Drought goals group activity, continued

Tiffany Meyer

Water Systems Consulting

Activity: Building regional drought goals

1

Ensure equity.

2

Define regional shortage conditions.

3

Build resiliency.

4

Facilitate consistent communication.

5

Support sustainability and environmental stewardship.

6

Achieve planning consistency.



Regional Drought Goals | Group #1

1 Ensure equity.

- How do we ensure our drought responses don't put an unfair burden on some constituents or stakeholders?
- How do we achieve broad and diverse benefits to our region?

Box Springs Mutual - wanted to ensure they are not lost in the noise and are considered fairly.

IERCD - Ensure people are invited to participate in an inclusive and meaningful way

x

Each group will be impacted differently. There should be understanding of all needs. A platform for education of other stakeholders for what their partners are dealing with and navigating. What resources are available to them. Facilitate awareness.

4 Facilitate consistent communication.

- How do we facilitate consistent and effective communication among stakeholders in the plan development, plan implementation, and periodic plan updates?

Planning documents can sometimes get lost due to a lack of communication and update processes

x

x

2 Define regional shortage conditions.

- How should our region define "drought" (e.g., based on precipitation, surface/groundwater levels, available supply, etc.).
- Would certain definitions of "drought" adversely affect your constituents more than others?

Need to account for various indices and data points (precipitation, northern snow pack) Needs to consider the western US. Broad considerations.

Have a good understanding of the conditions for region relevant to the DCP

x

5 Sustainability and environmental stewardship.

- Within the broad categories of climate impact, sustainability and environmental stewardship, what outcomes should be prioritized?
- What does success in this category look like to area ecosystems, wildlife, ocean health, water quality, etc.?

x

x

x

3 Build resiliency.

- How do we better use the water we already have (local and imported) so we can effectively endure drought conditions as they arise?

x

x

x

6 Achieve planning consistency.

- What other plans within the region do we need to align with?
- What will it take to achieve that alignment?

Ensure long-term effectiveness

x

x

Please pull out your **drought goals** pre-work

- Start by getting prepared responses on the board
- Remember to “**step back, step up**”
- **IF TIME:** Notice where you have alignment; where you have disagreement

GROUP WORK:

25 min, go until 02:55

REPORT OUT:

3 min per group,
share your top
3-4 takeaways from
entire activity



5 min break

03:10 p.m. - 03:15 p.m.

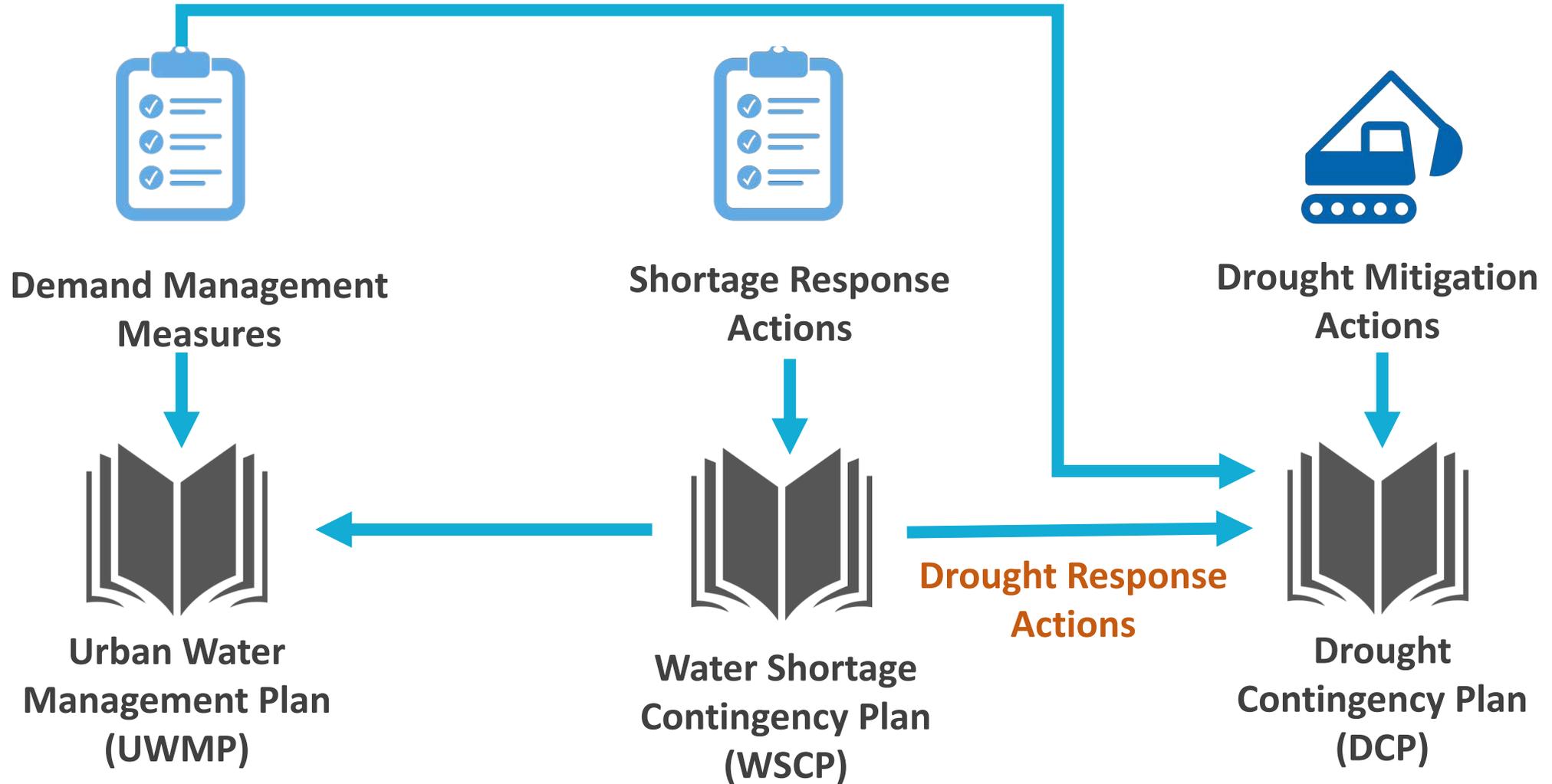
Drought response actions

Michelle Ricker, GEI

Key terms

		INCLUDED IN DCP	INCLUDED IN WSCP
Demand Management Measures	Drought Mitigation Actions	Drought Response Actions	Shortage Response Actions
ONGOING varies	PRE-DROUGHT longer to implement	DURING DROUGHT fast to implement	DURING DROUGHT fast to implement
<ul style="list-style-type: none"> • Help make water conservation a way of life • Inform/educate public about smart water use • Incentivize conservation • Rebate program for sprinkler nozzles • high efficiency toilets • turf replacement, etc. 	<ul style="list-style-type: none"> • Build long-term drought resilience • Reduce sector drought vulnerabilities • Reduce need for response actions • Projects to increase groundwater storage to augment supplies during drought 	<ul style="list-style-type: none"> • Manage limited supply available during drought • Decrease severity of immediate impacts • Triggered by water shortage stages • Restrict outdoor watering to specific days and times 	<ul style="list-style-type: none"> • Does not include supply augmentation steps • Decrease severity of immediate impacts • Triggered by water shortage stages • Restrict outdoor watering to specific days and times

Relationship to other planning efforts

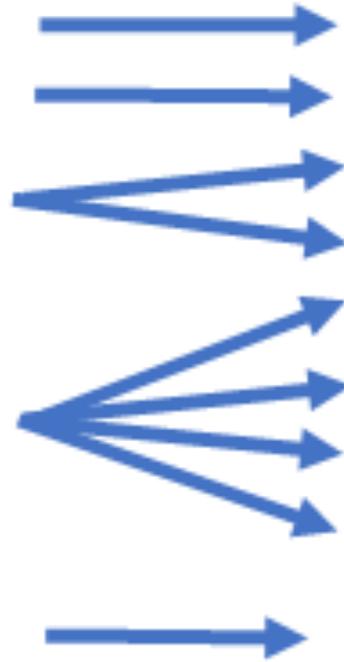


3 categories of drought response actions

	 <p>PHYSICAL CHANGES</p>	 <p>BEHAVIORAL CHANGES</p>	 <p>MANDATED CHANGES</p>
DEFINITION	Installation/use of new equipment to expand conservation.	Voluntary end-user actions that increase conservation.	Mandated actions to reduce water use.
EXAMPLES	<ul style="list-style-type: none"> • Low-flow fixtures • Drip irrigation system 	<ul style="list-style-type: none"> • Reduced landscape irrigation time • Alternate watering days 	<ul style="list-style-type: none"> • Mandatory water use reduction • Landscape watering days enforced by fines

6 stages of drought – shortage from normal supplies

Western 2015 Shortage Stage	Demand Reduction Target
1	-
2	≤ 4%
3	5 - 15%
4	16 - 50%
5	significantly reduced



DWR 2020 WSCP Level	Supply Shortage Level
1	≤ 10%
2	10 - 20%
3	20 - 30%
4	30 - 40%
5	40 - 50%
6	> 50%



How the stages will be used

WATER SHORTAGE CONTINGENCY PLAN (WSCP)

- The WSCP shortage stages are used as triggers for when to use shortage response actions
- Defined by each retail water agency for their service area
- Shortage response actions are progressively more restrictive with each higher drought stage

DROUGHT CONTINGENCY PLAN (DCP)

- Drought stages will be defined in the DCP Drought Monitoring Framework -> Consistent with Shortage Stages in WSCPs
- The DCP's Response Actions will include the Response Actions in the WSCPs within the DCP plan area
- Additional, regional Response Actions may also be proposed for the DCP plan area



Quick poll

FOR MEMBERS REPRESENTING WATER AGENCIES

In updating your WSCP, do you plan on moving to the 6 stages, or are you using another option?



Group activity: drought response actions

Tiffany Meyer

Water Systems Consulting



1 When we are in a drought, how should we respond?

2 What types of actions have been most effective during previous droughts?

3 What types of actions would be most difficult to implement or comply with, and why?

Please pull out your **drought response actions** pre-work

- Start by getting prepared responses on the board
- Remember to “**step back, step up**”
- **IF TIME:** Notice where you have alignment; where you have disagreement

GROUP WORK:

30 min, go until 04:00

REPORT OUT:

3 min per group,
share your top 1-2
takeaways for each
question



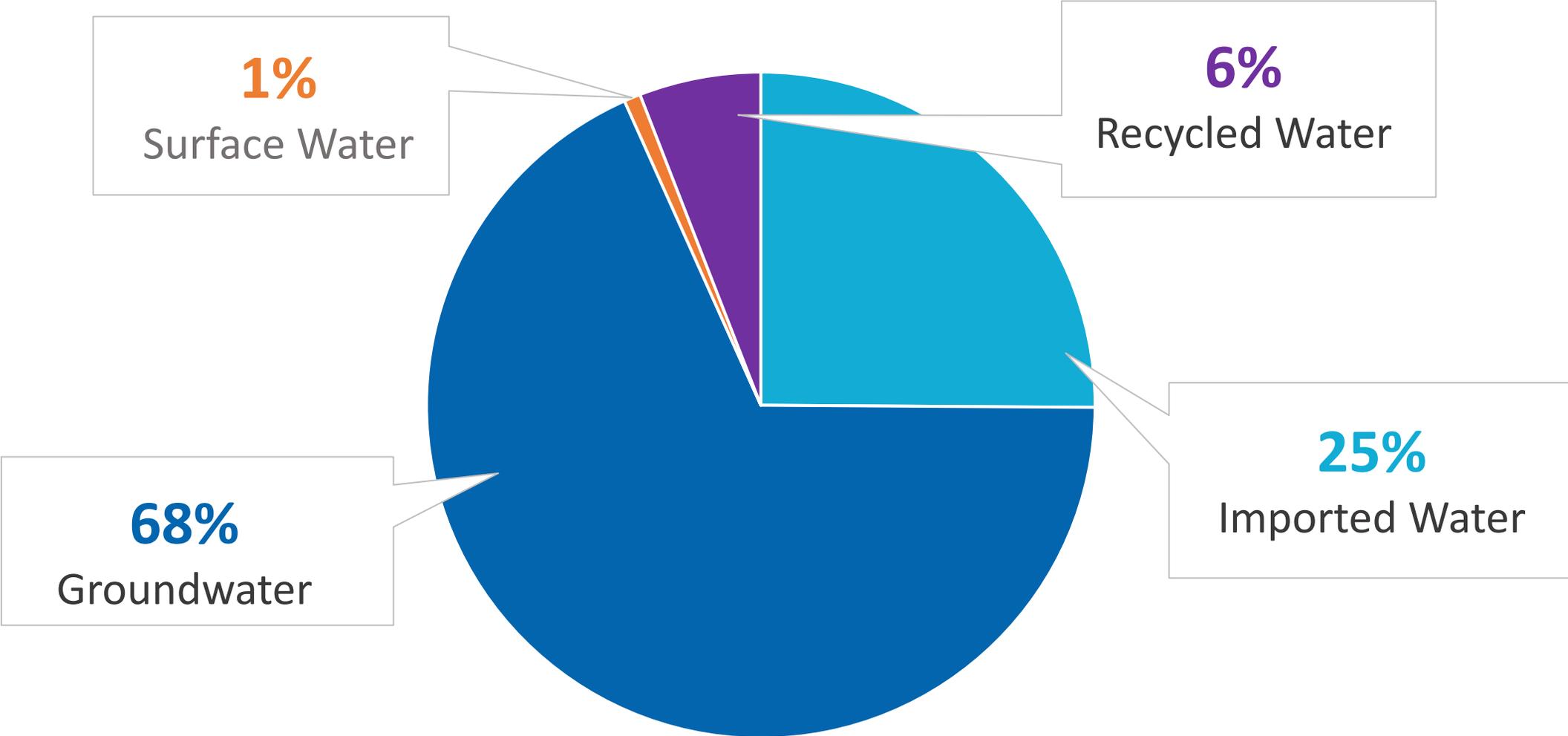
5 min break

04:15 p.m. - 04:20 p.m.

Supply and demand analysis overview

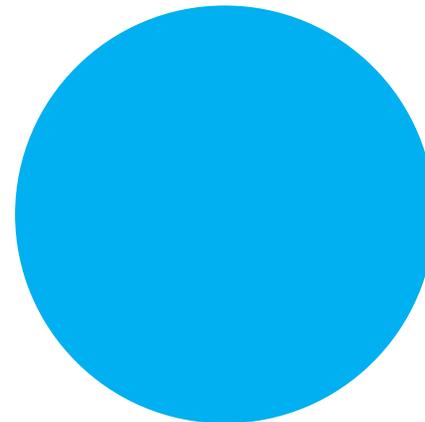
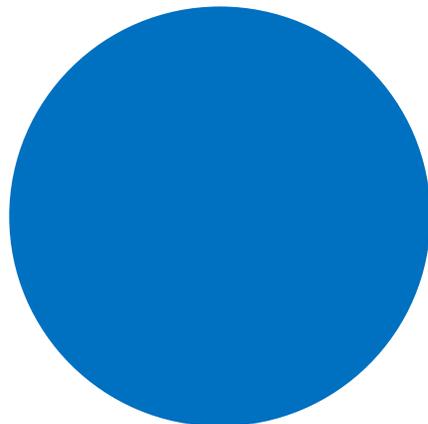
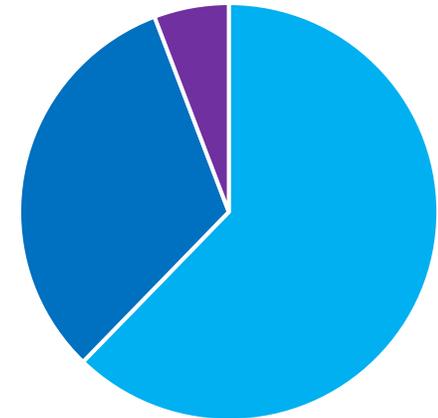
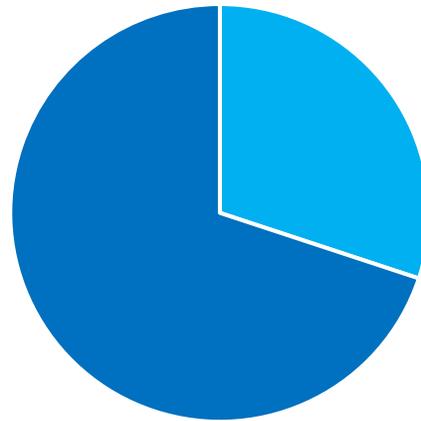
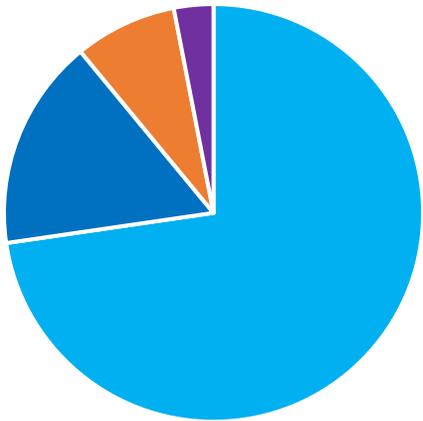
Laine Carlson, WSC

Water supplies used in the region

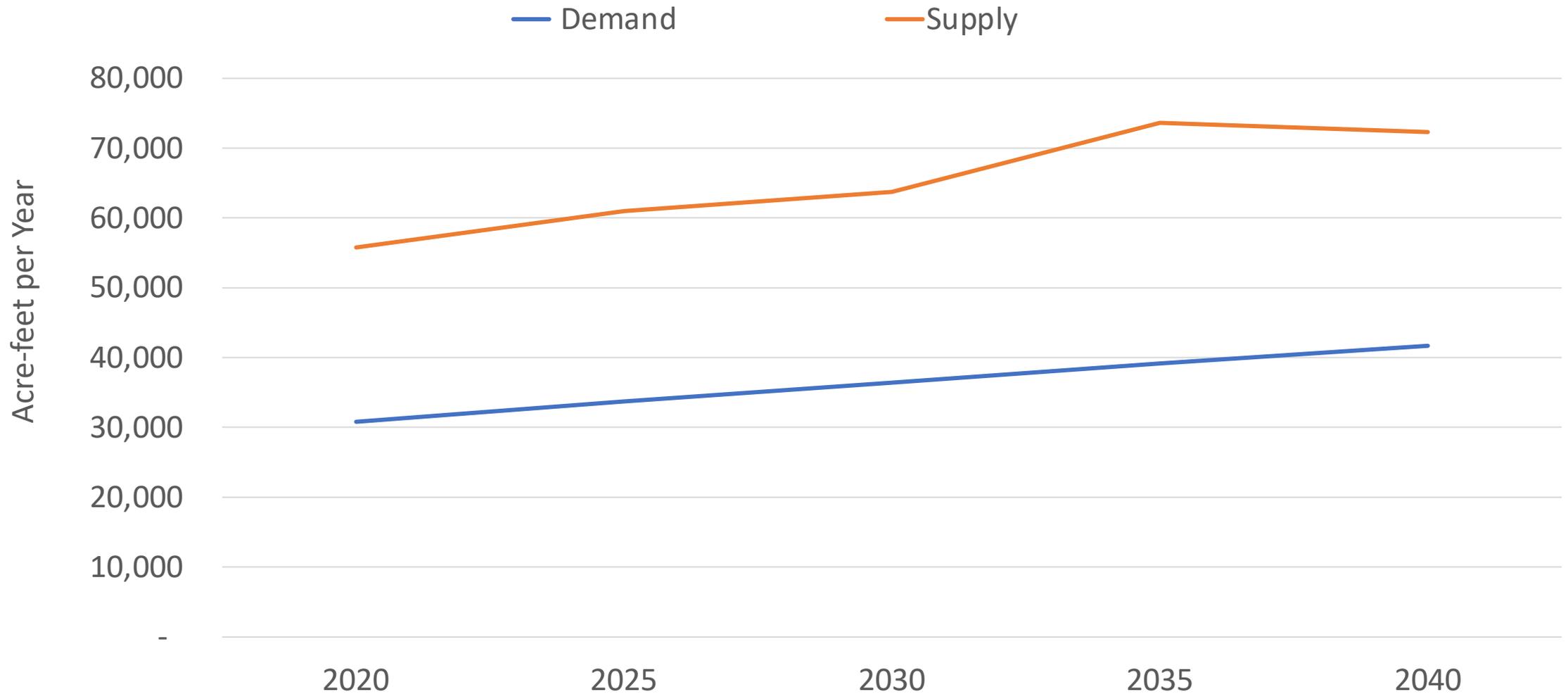


Supply portfolios vary by agency

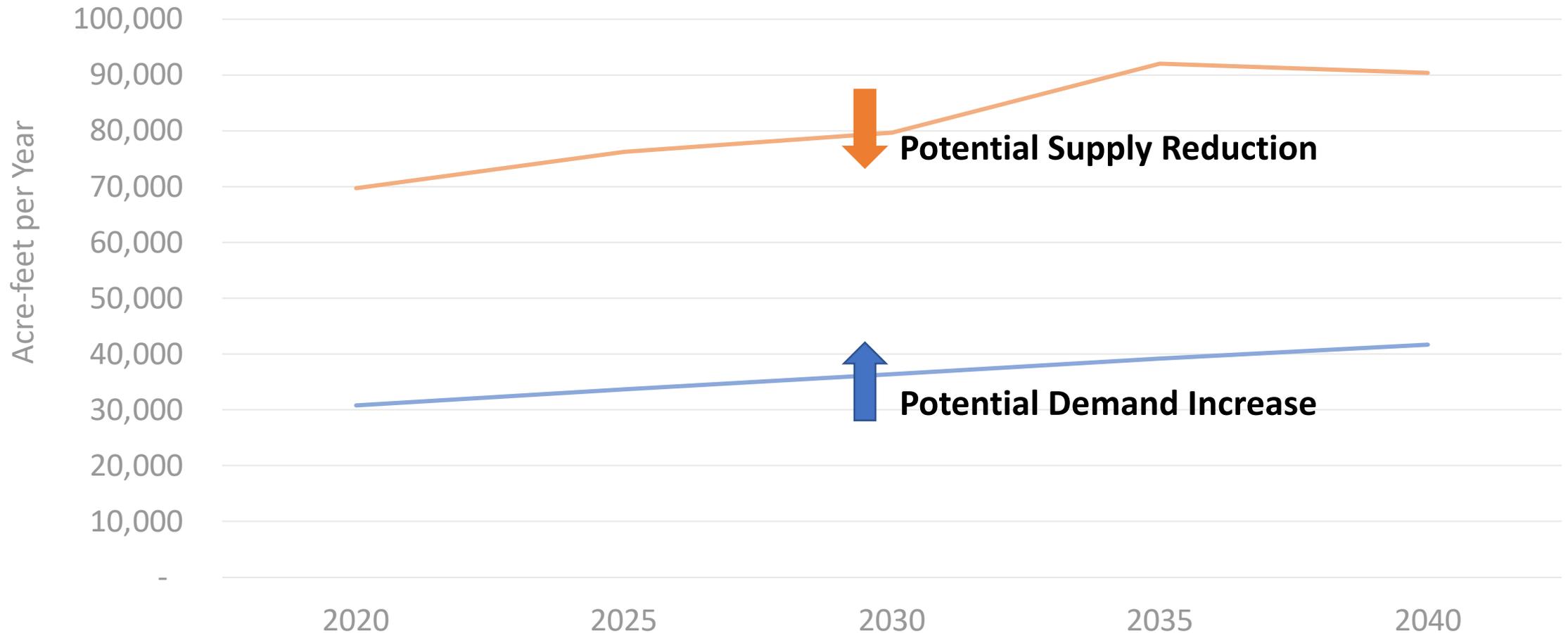
■ Imported ■ Groundwater ■ Surface Water ■ Recycled Water



Example: projections show sufficient supply to meet demand



Climate change factors can inform 2020 UWMP projections



Climate Change Vulnerability Assessment (CCVA)

Kwabena Asante, Ph.D., P.E.
GEI

Purpose of the Climate Change Vulnerability Assessment

RESOURCES

- Imported Water
- Groundwater
- Surface Water
- Critical Infrastructure

RISK FACTORS

- Drought
- Climate Variability
- Population Growth
- Other



Local and imported supply risks evaluated separately

LOCAL SUPPLIES

Customized Climate Change
Analysis for Western Service
Area

IMPORTED WATER

Metropolitan Water District
Planning Documents

- 2020 UWMP Drought Risk Assessment
- 2020 Integrated Resources Plan



Planning year types for local and imported supplies

- UMWP Planning required for normal, single dry and 5-year drought (previously 3-year drought)
- Drought years for vary for each water source
- Data availability also limits the choice of planning year types
- Using different years for local and imported water to provide more customized analysis

Year Type	Imported Supplies	Riverside FS3 Gauge	CIMIS #44 Gauge
Normal	1922 - 2004	1922 - 2004	1986 - 2020
Single Dry-Year	1977	1989	2007
Five-Year Drought	1988 - 1992	1971 - 1975	2005 - 2009



Local Climate Change Factors



Choosing Global Climate Models to use for California Water Resources Planning

- Criteria**
- Scientists recommend using information from several Global Climate Models
 - Using information from all available GCMs isn't practical
 - Remove GCMs that fall short in representing historical climate and hydrologic processes important for California's water resources planning

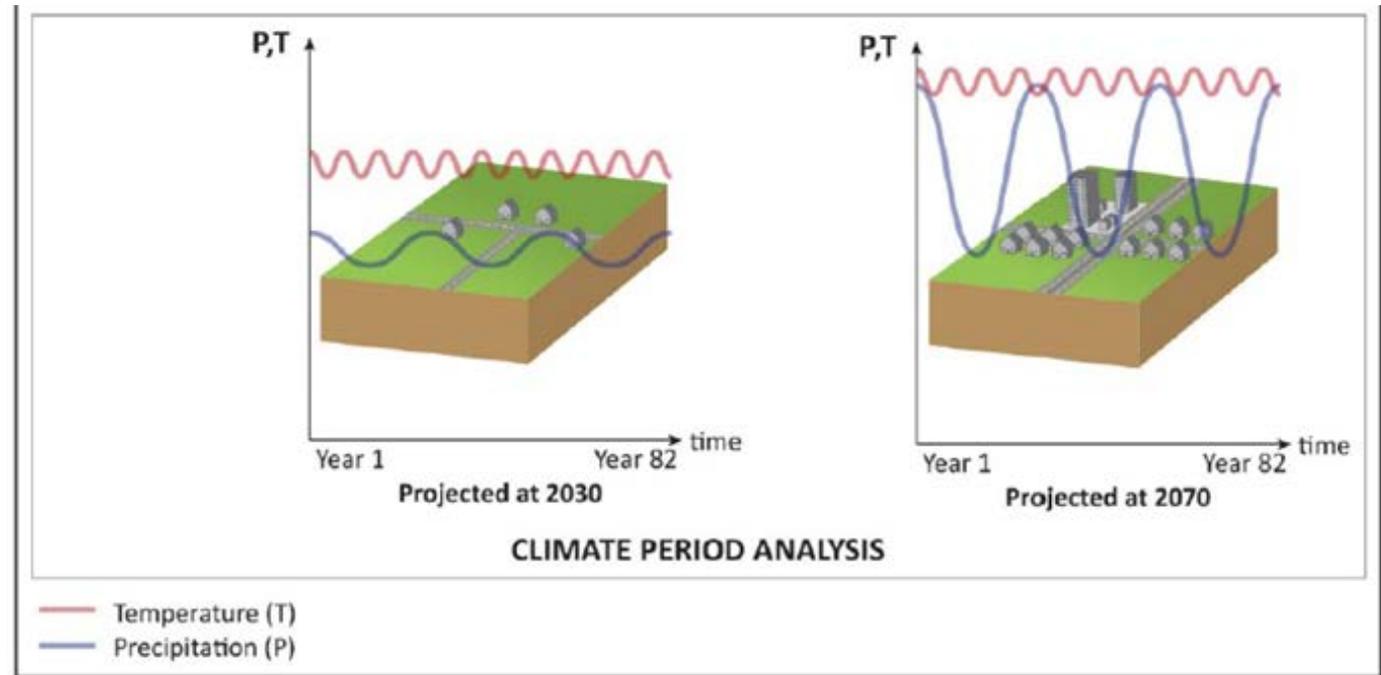
Method

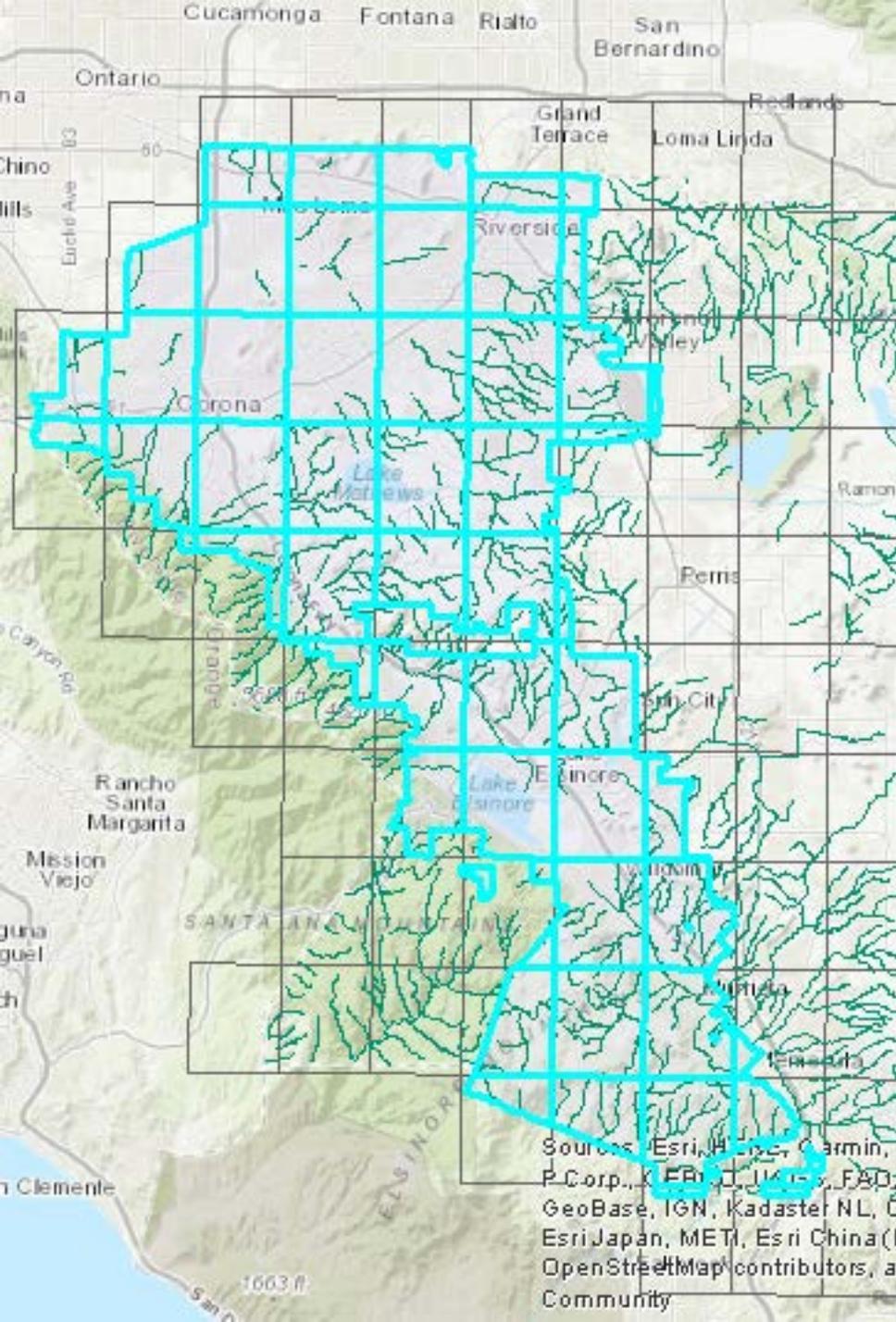
- Global
- Western U.S.
- California
- 10 GCMs to use for CA water planning



Inputs: DWR climate change data

- Climate projections prepared by leading scientists, engineers and policy experts in California
- Selected 10 best climate models for water-related studies in California from a review of global climate models
- Projections developed for near-future (2030) and late-future (2070) conditions for use in water planning studies





Climate projections available for western's service area

- Retrieved DWR climate projections for 2030 and 2070
- Data are built from detrended monthly data from 1915 to 2011 time series
- For the service area, data are available for each of the 1/16th deg cells shown on the map
- Summarized time series for all the cells within Western's service area
- Analyzed the data to project changes during normal years and drought periods



Climate change factors for local water sources

$$\text{Future Supply Change Factors} = \frac{\text{Climate Model Rainfall Under Future Conditions}}{\text{Climate Model Rainfall Under Past Conditions}}$$



Total Projected
Local Supplies

=

**Future Supply Change
Factors**

*

Natural Recharge
Stormwater Recharge
Surface Water Supplies

+

Growth-Adjusted
Recycled Water



Summary of climate factors for local natural recharge

- 3% to 6% decrease in normal year rainfall will reduce local supplies over time
- However, local droughts are projected to be less severe from the perspective of local rainfall
- Single dry years will be up to 3% wetter by 2045
- 5-year Droughts will be up to 6% wetter by 2045
- Monthly factors also developed

Water Supply Change Factors

Year	Normal	Dry	5-year Dry
2020	98%	101%	102%
2025	96%	102%	103%
2030	94%	103%	105%
2035	95%	103%	105%
2040	95%	103%	106%
2045	95%	103%	106%



Summary of climate factors for local surface water

River supplies are more sensitive to climate change

Water Supply Change Factors for Santa Ana River Supplies

Year	Normal	Dry	5-year Dry
2020	99%	99%	98%
2025	98%	98%	96%
2030	97%	97%	94%
2035	96%	95%	92%
2040	96%	93%	91%
2045	95%	91%	90%

Water Supply Change Factors for Santa Margarita River Supplies

Year	Normal	Dry	5-year Dry
2020	99%	100%	99%
2025	98%	100%	98%
2030	98%	99%	96%
2035	97%	98%	95%
2040	96%	96%	94%
2045	95%	95%	93%



Local projections for a normal year (1922-2004)

- Less rainfall in spring and fall, more in winter and summer
- The season shift increases over time
- Small 2% to 6% change in average year rainfall

Climate Change Factors	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2030 Change Factors	104%	96%	100%	103%	77%	97%	96%	106%	104%	79%	87%	93%	94%
2070 Change Factors	110%	98%	94%	77%	66%	91%	111%	114%	125%	70%	69%	88%	96%

Precipitation Change Factor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2020	101%	99%	100%	101%	92%	99%	99%	102%	101%	93%	96%	98%	98%
2025	102%	97%	100%	102%	85%	98%	97%	104%	103%	86%	91%	95%	96%
2030	104%	96%	100%	103%	77%	97%	96%	106%	104%	79%	87%	93%	94%
2035	105%	96%	99%	100%	76%	96%	97%	107%	107%	78%	85%	93%	95%
2040	105%	97%	99%	96%	75%	95%	99%	108%	109%	76%	82%	92%	95%
2045	106%	97%	98%	93%	73%	95%	101%	109%	112%	75%	80%	91%	95%

Climate change factors for local water demands

Future Demand Change Factors = $\frac{\text{Climate Model Evapotranspiration Under Future Conditions}}{\text{Climate Model Evapotranspiration Under Past Conditions}}$



Total Projected Local Demand = $\left[\begin{array}{c} \text{Future Demand} \\ \text{Change Factors} \\ * \\ \text{Growth-Adjusted} \\ \text{Outdoor Water Use} \end{array} \right] + \text{Growth-Adjusted Indoor Water Use}$



Summary of climate factors for local demands

- 2% to 6% increase in normal year outdoor use
- Similar increases for
 - Single Dry Year (2% to 7%) and
 - 5-year drought periods (2% to 6%)
- These change factors will be applied to outdoor uses which are most responsive to changes in temperature
- Monthly factors also available

Water Demand Change Factors

Year	Normal	Dry	5-year Dry
2020	102%	102%	102%
2025	103%	103%	103%
2030	105%	105%	105%
2035	105%	105%	105%
2040	106%	106%	106%
2045	106%	107%	106%



Imported Water Resources



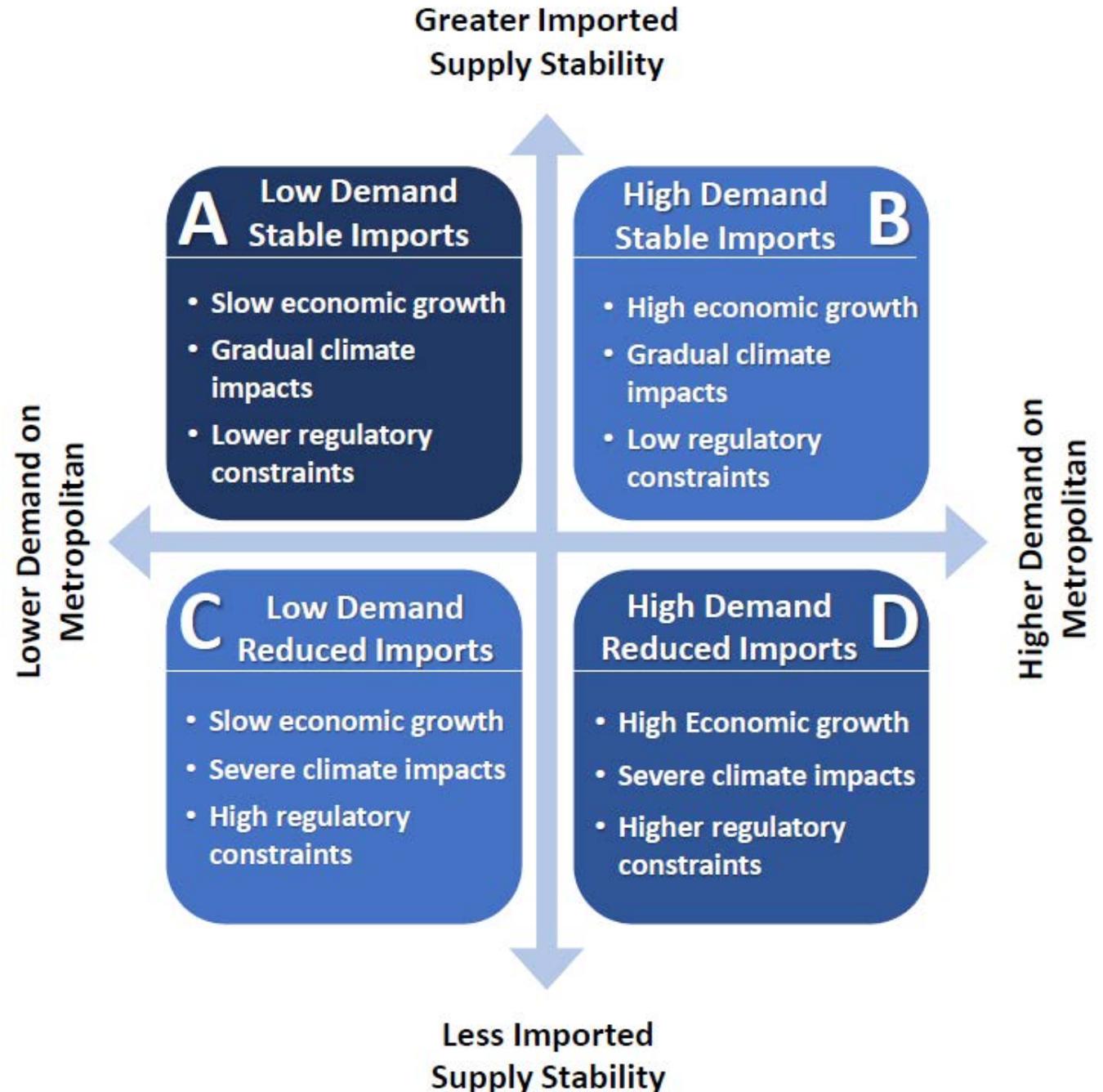
Metropolitan draft 2020 UWMP

- Water Reliability Assessment / Drought Risk Assessment shows the region can provide reliable water supplies during:
 - Single driest year
 - Drought lasting five consecutive years
- ***No imported water service reliability concern during drought***
- Forms baseline imported water scenario for the DCP



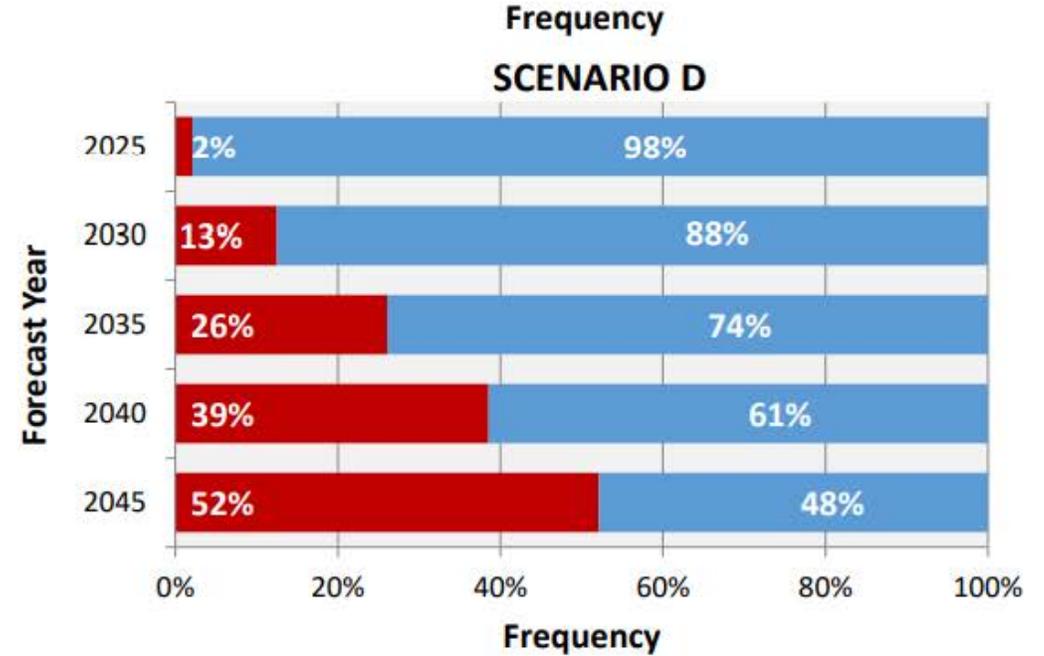
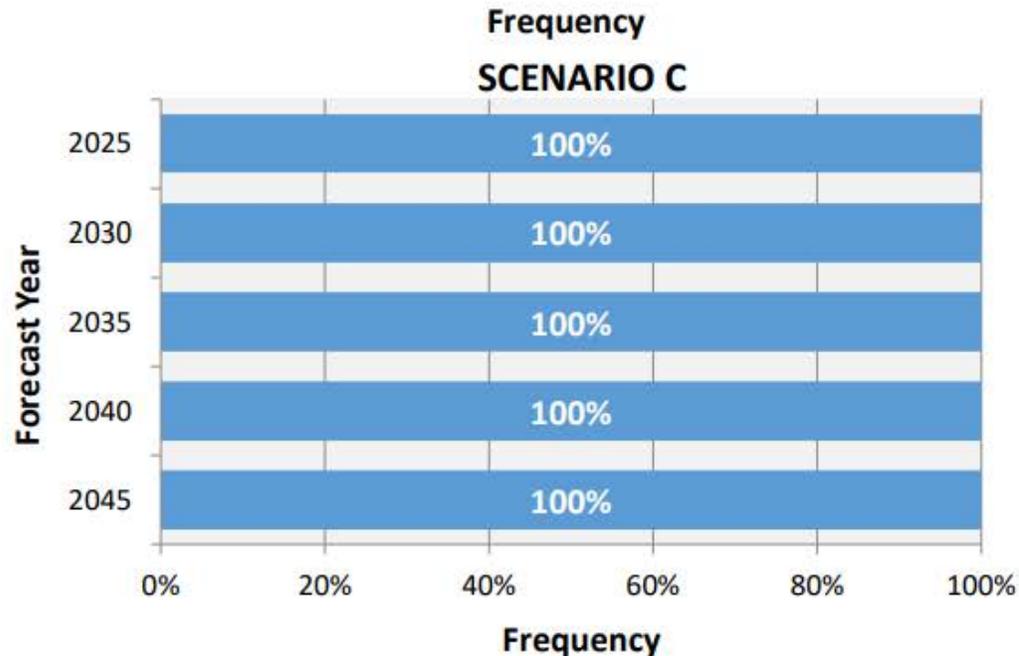
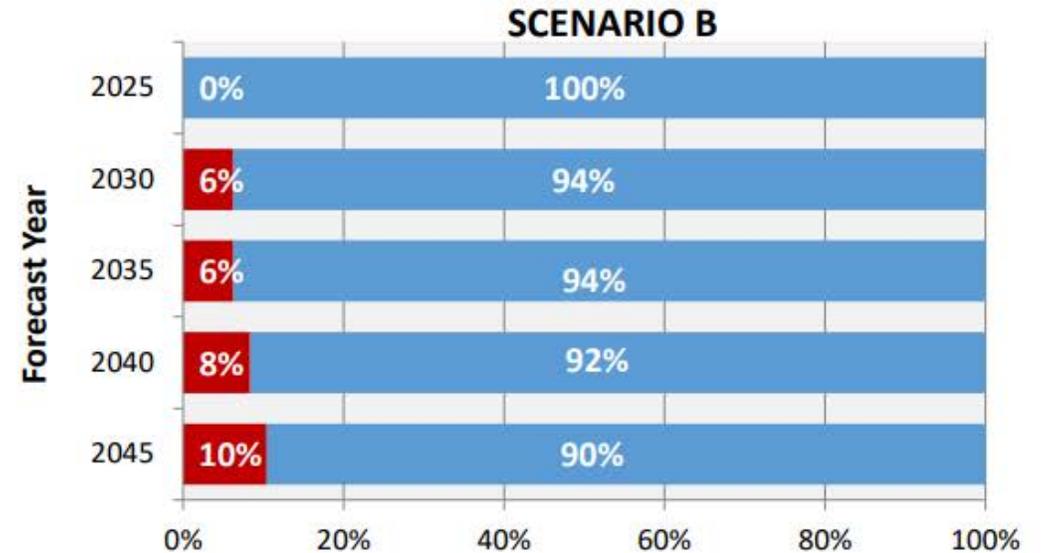
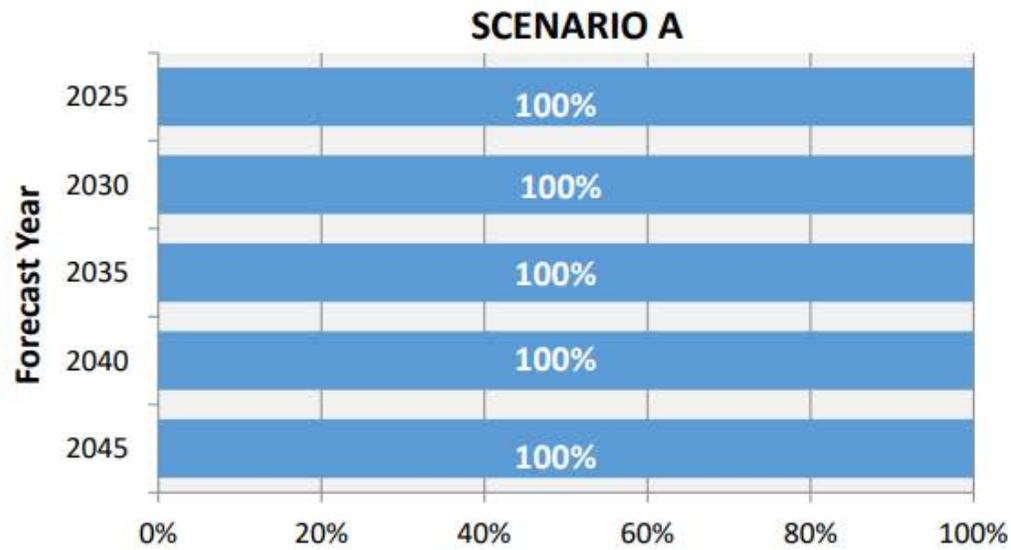
Metropolitan's 2020 Integrated Water Resources Plan (IRP) scenario analysis

- Evaluates a range of potential futures and risk factors
- Use to inform a more extreme scenario for the DCP to evaluate potential future gaps and drought mitigation needs

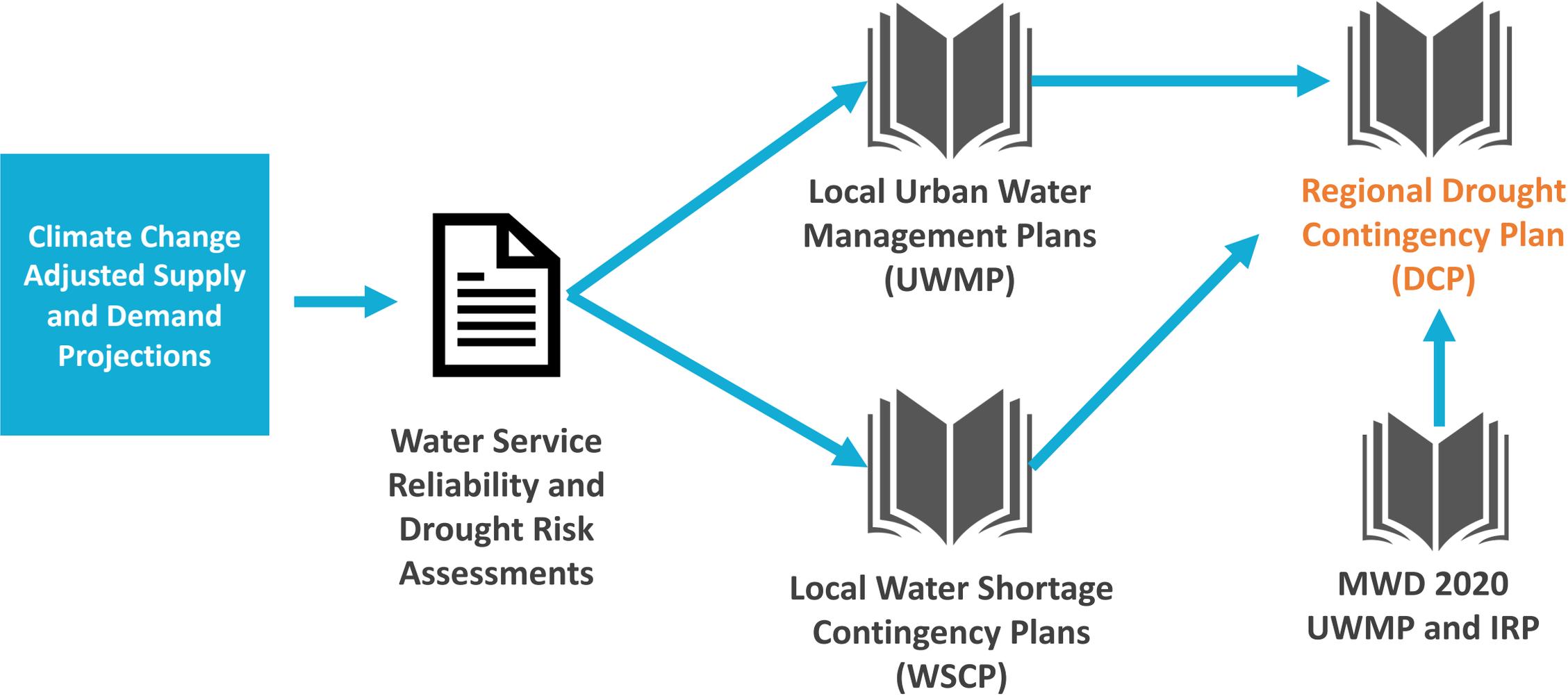


2020 IRP – PRELIMINARY “GAP” ANALYSIS

When to expect a gap and how often it occurs



Vulnerability analysis link to planning documents



What's next and grant opportunities

Tiffany Meyer, WSC

Leslie Cleveland, USBR



Task force action item

REVIEW DRAFT TECHNICAL MEMO:
Climate Change Vulnerability Assessment

Available approx. early March 2021



Attend workshop No. 3

Review draft UWMP recommendations

APRIL 2021 — DATE/TIME TO BE CONFIRMED

All task force members will be registered.
Watch for Zoom details by email from WSC



A hand holding a pen is visible in the background, positioned over a blue semi-transparent rectangular box. The box contains text. The background is a blurred office setting with colorful sticky notes on a wall.

Project website

wmwd.com/UWMP





USBR grant opportunities

Quick update





Thank you!



Local projections for a normal year (1922-2004)

- Warmer in all seasons but higher percentage increases in winter
- 2% to 6% change in evapotranspiration gradually increasing outdoor demand

Climate Change Factors	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2030 Change Factors	108%	105%	103%	104%	106%	104%	103%	104%	104%	105%	107%	108%	105%
2070 Change Factors	114%	111%	109%	110%	112%	109%	106%	107%	107%	110%	114%	117%	110%

Evapotranspiration Change Factor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2020	103%	102%	101%	101%	102%	101%	101%	101%	101%	102%	102%	103%	102%
2025	105%	103%	102%	103%	104%	103%	102%	103%	103%	103%	104%	105%	103%
2030	108%	105%	103%	104%	106%	104%	103%	104%	104%	105%	107%	108%	105%
2035	108%	106%	104%	105%	107%	105%	104%	104%	105%	106%	107%	109%	105%
2040	109%	106%	105%	105%	108%	105%	104%	105%	105%	106%	108%	110%	106%
2045	110%	107%	105%	106%	108%	106%	104%	105%	105%	107%	109%	111%	106%

Metropolitan's planning scenarios: projections for Western

Scenario A: NORMAL YEAR	2020	2025	2030	2035	2040	2045
Retail M&I	196,393	201,263	202,912	203,759	203,859	204,441
Retail Agricultural	20,450	26,473	26,116	25,911	25,543	25,555
Replenishment Demand	330	410	410	410	410	410
Total Demand	217,173	228,147	229,438	230,080	229,812	230,406
Groundwater Production	154,750	163,130	171,243	177,279	177,882	178,116
Surface Production	8,000	8,000	8,000	8,000	8,000	8,000
Groundwater Recovery	33,730	36,092	36,797	37,502	38,208	38,400
Recycling	4,463	4,705	4,909	5,102	5,292	5,480
Total Local Supplies	200,943	211,927	220,949	227,883	229,382	229,996
Total Imports	16,230	16,220	8,488	2,197	430	410

Scenario B: NORMAL YEAR	2020	2025	2030	2035	2040	2045
Retail M&I	197,358	254,442	311,622	326,483	338,282	349,890
Retail Agricultural	20,450	26,473	26,116	25,911	25,543	25,555
Replenishment Demand	264	2,032	5,194	7,730	10,348	10,348
Total Demand	218,072	282,947	342,932	360,124	374,173	385,793
Groundwater Production	154,750	163,130	171,510	179,890	188,270	196,650
Surface Production	8,000	8,000	8,000	8,000	8,000	8,000
Groundwater Recovery	33,730	36,092	36,797	37,502	38,208	38,400
Recycling	4,876	7,101	8,651	9,426	9,923	10,328
Total Local Supplies	201,356	214,323	224,958	234,818	244,401	253,378
Total Imports	16,716	68,624	117,974	125,306	129,772	132,415

Scenario C: NORMAL YEAR	2020	2025	2030	2035	2040	2045
Retail M&I	196,393	201,263	202,912	203,759	203,859	204,441
Retail Agricultural	20,450	26,473	26,116	25,911	25,543	25,555
Replenishment Demand	330	410	410	410	410	410
Total Demand	217,173	228,147	229,438	230,080	229,812	230,406
Groundwater Production	154,700	153,580	152,460	151,340	150,220	148,550
Surface Production	1,600	1,600	1,600	1,600	1,600	1,600
Groundwater Recovery	33,730	36,092	36,797	37,502	38,208	38,400
Recycling	4,463	4,705	4,909	5,102	5,292	5,480
Total Local Supplies	194,493	195,977	195,766	195,544	195,320	194,030
Total Imports	22,680	32,170	33,672	34,536	34,492	36,376

Scenario D: NORMAL YEAR	2020	2025	2030	2035	2040	2045
Retail M&I	197,358	254,442	311,622	326,483	338,282	349,890
Retail Agricultural	20,450	26,473	26,116	25,911	25,543	25,555
Replenishment Demand	211	1,625	4,155	6,184	8,278	8,278
Total Demand	218,019	282,540	341,893	358,578	372,103	383,723
Groundwater Production	154,700	153,580	152,460	151,340	150,220	148,550
Surface Production	1,600	1,600	1,600	1,600	1,600	1,600
Groundwater Recovery	29,707	30,412	30,720	30,720	30,720	30,720
Recycling	4,601	6,801	8,346	9,121	9,592	9,927
Total Local Supplies	190,608	192,393	193,126	192,781	192,132	190,797
Total Imports	27,411	90,147	148,767	165,797	179,971	192,926



Finalizing vulnerability assessments

- Review Metropolitan's future scenarios to determine to establish a realistic planning scenario from A, B, C, D for the service area
- Customize the planning scenario as needed to reflect local options for future water supply projects and drought response actions.
 - Scenarios can be combined e.g. average of Scenario A & D
 - Local climate change factors can be applied to adjust local supply and demand projections as needed
- Incorporate into UWMPs and Drought Contingency Plan



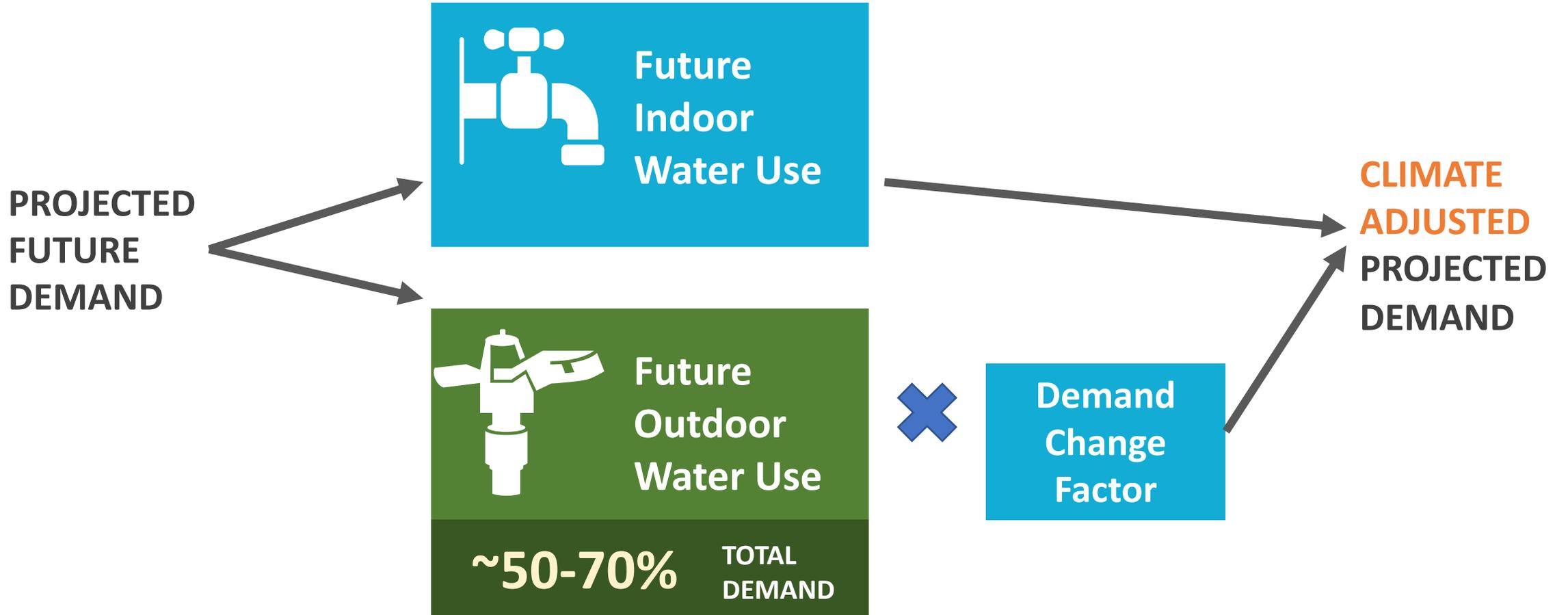
Imported water projections for Western

Metropolitan projects it can supply Westerns projected imports with 0% reduction

Imports from Metropolitan	2025	2030	2035	2040	2045
Normal Year	53,583	70,053	77,325	82,378	87,118
Single Dry Year	52,934	69,339	76,588	81,623	86,348
5-Year Drought	47,836	66,736	77,915	83,955	89,106



Applying the future demand change factor



Example: Climate change adjusted demand

