

# ***Drought Task Force Workshop No. 4: Climate Change Vulnerability Assessment Update and Drought Mitigation Actions***

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Western Municipal Water District  
*December 16, 2021 • 2:00 p.m. – 4:00 p.m.*

# *Workshop Goals*

- Review expanded CCVA analysis and what this means for local drought planning and mitigation

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- Review the results of the projects submitted through the survey and add missing projects during the breakout session

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# Presenters

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**Ryan Shaw**  
Director of Water  
Resources,  
Western Municipal  
Water District



**Kwabena Asante**  
Senior Climate  
Specialist, GEI



**Larry Rodriguez**  
Vice President Water  
Resources Planning,  
GEI



**Katie Laird**  
Project Manager, GEI



**Amy Stevens**  
Facilitator,  
Water Systems  
Consulting (WSC)



**Laine Carlson**  
Civil Engineer, Water  
Systems Consulting  
(WSC)



# Workshop Agenda

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5 min	<b>WELCOME:</b> Project and Task Force Overview
5 min	DCP and Task Force Overview
35 min	<b>PRESENTATION:</b> Climate Change Vulnerability Analysis
10 min	Mitigation Action Surveys
30 min	<b>SMALL GROUP BREAKOUT:</b> Mitigation Action Survey
30 min	Small Group Report Out and Large Group Discussion
5 min	Next Steps



# ***DCP and Task Force Overview***

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Ryan Shaw, *Western Municipal Water District*

# Guiding Principles for the DCP Task Force

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**1**

Prioritize equitable water policies region wide.

**2**

Employ drought and shortage triggers that empower a coordinated, flexible, regional response.

**3**

To support climate resilience, diversify regional supply and encourage conservation as a way of life.

**4**

Foster continuous, coordinated, and accessible stakeholder education to empower smart water use.

**5**

Prioritize water investments that sustainably support environmental health, quality of life, and regulatory compliance.

**6**

Foster regional water planning collaboration, knowledge-sharing, and alignment.



# 5 Steps to the Drought Contingency Plan

**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.

Completed in UWMPs

Completed in UWMPs



**WE ARE HERE**



# Task Force Overview



## 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

Makes regional water policy decisions.

Share Perceptions / Opinions

Recommend

Decide



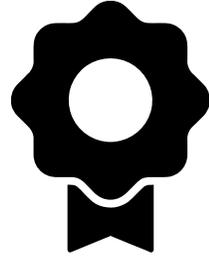
# Key Themes from Task Force Input

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## Coordinated communication

Use coordinated, ongoing communication that consistently reaches and educates diverse audiences with specific calls to action.



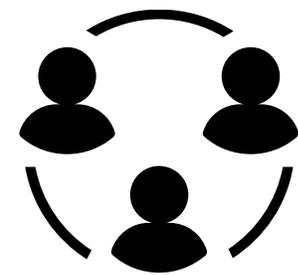
## Incentives and Rewards

Use carrots over sticks to incentivize smart water use and reward it with appropriate benefits.



## There's no one size fits all policy

Regional solutions require flexibility and adaptability to different community needs.



## Interagency collaboration

Collaboration across water agencies and stakeholders will benefit all water customers.



# *Climate Change Vulnerability Analysis (CCVA)*

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Kwabena Asante and Larry Rodriguez, GEI

# *Climate Change Vulnerability Assessment (CCVA): Purpose*

## RESOURCES

- Imported Water
- Groundwater
- Surface Water
- Critical Infrastructure

## RISK FACTORS

- Drought
- Climate Variability
- Population Growth
- Other



# Local Climate Change Factors



# Climate Change Factors for Local Water Sources

**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

# 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

=

**Future Demand  
Change Factors**

\*

Growth-Adjusted  
Outdoor Water Use

+

Growth-Adjusted  
Indoor Water Use

# Planning Year Types for Local and Imported Supplies

- Planning required for normal, single dry and 5-year dry periods under UWMP
- Drought years for vary for each water source
- Data availability also limits the choice of planning year types
- Western is electing to use different years for regional and imported water

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 – Extreme Scenarios



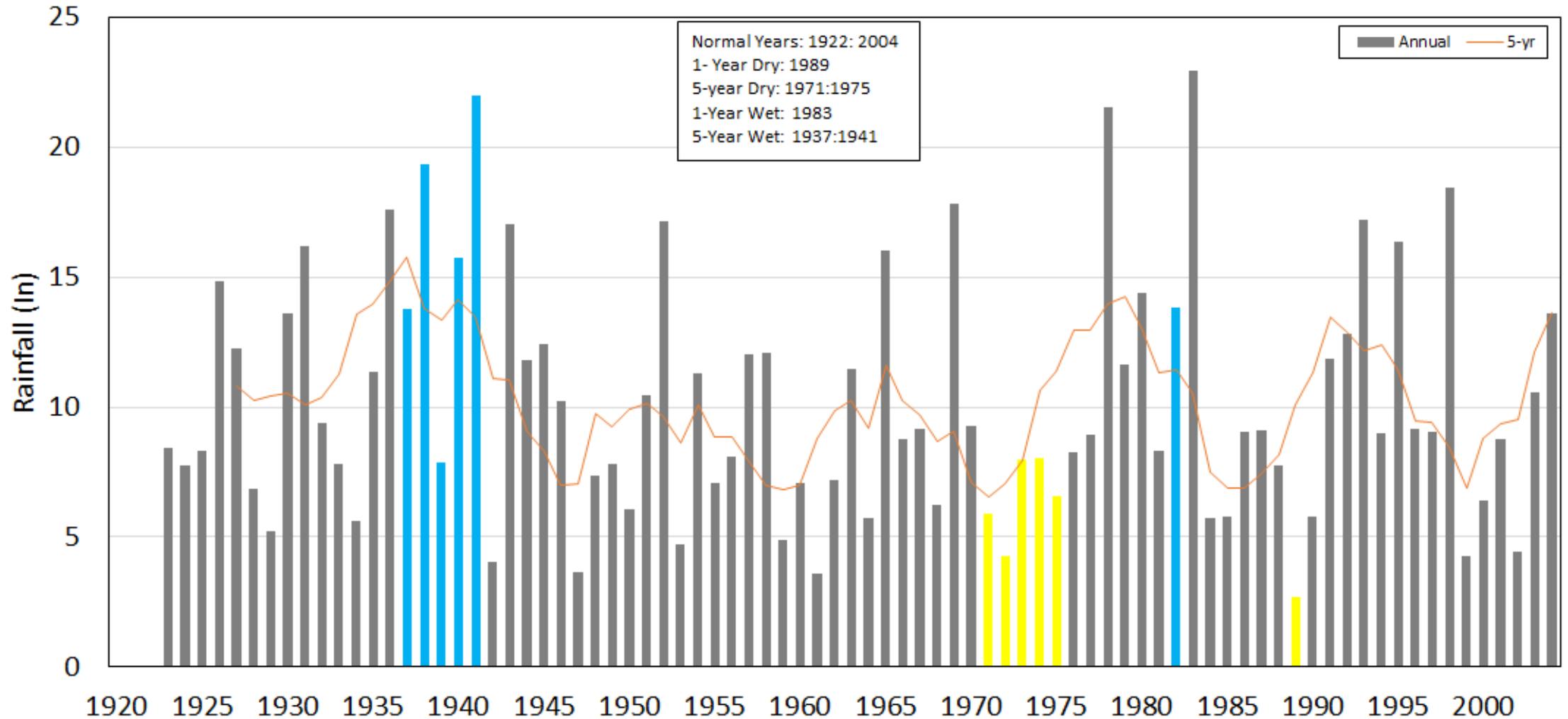
# Extreme Scenarios

- Updated analysis of climate change impacts to rainfall & recharge, streamflow, and evaporative demand (ET) based on two extreme scenarios
  - Drier future conditions with Extreme Warming (Dry-Hot)
  - Median future conditions (Median)
  - Wetter future conditions with Moderate Warming (Wet-Warm)
- Updated analysis of climate impacts using local year types
  - Normal Years: 1922:2004
  - 1-Year Dry: 1989
  - 5-Year Dry: 1971:1975
  - 1-Year Wet: 1983
  - 5-Year Wet: 1937:1941



# Local Extreme Wet and Dry Periods

Annual Rainfall at RiverSide Fire Station 3



# 12 Results Tables (3 Scenarios, 4 Sets of Factors)

## Sample Output for Projected Changes in Rainfall & Recharge

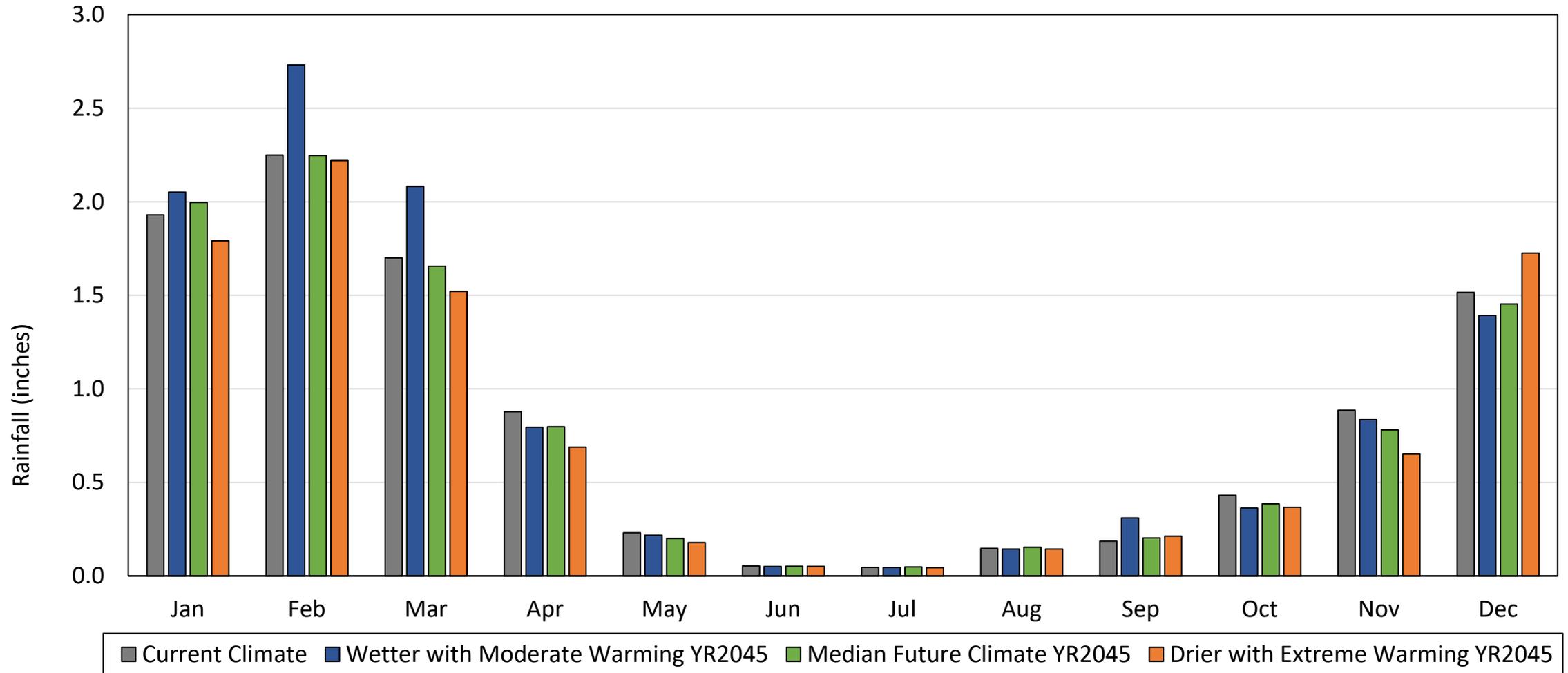
- Scenarios include
- Wet with Moderate Warming
  - Median
  - Dry with Extreme Warming

- Sets of factors include
- Rainfall & Recharge
  - Outdoor Demand
  - Santa Margarita Flows
  - Santa Ana Flows

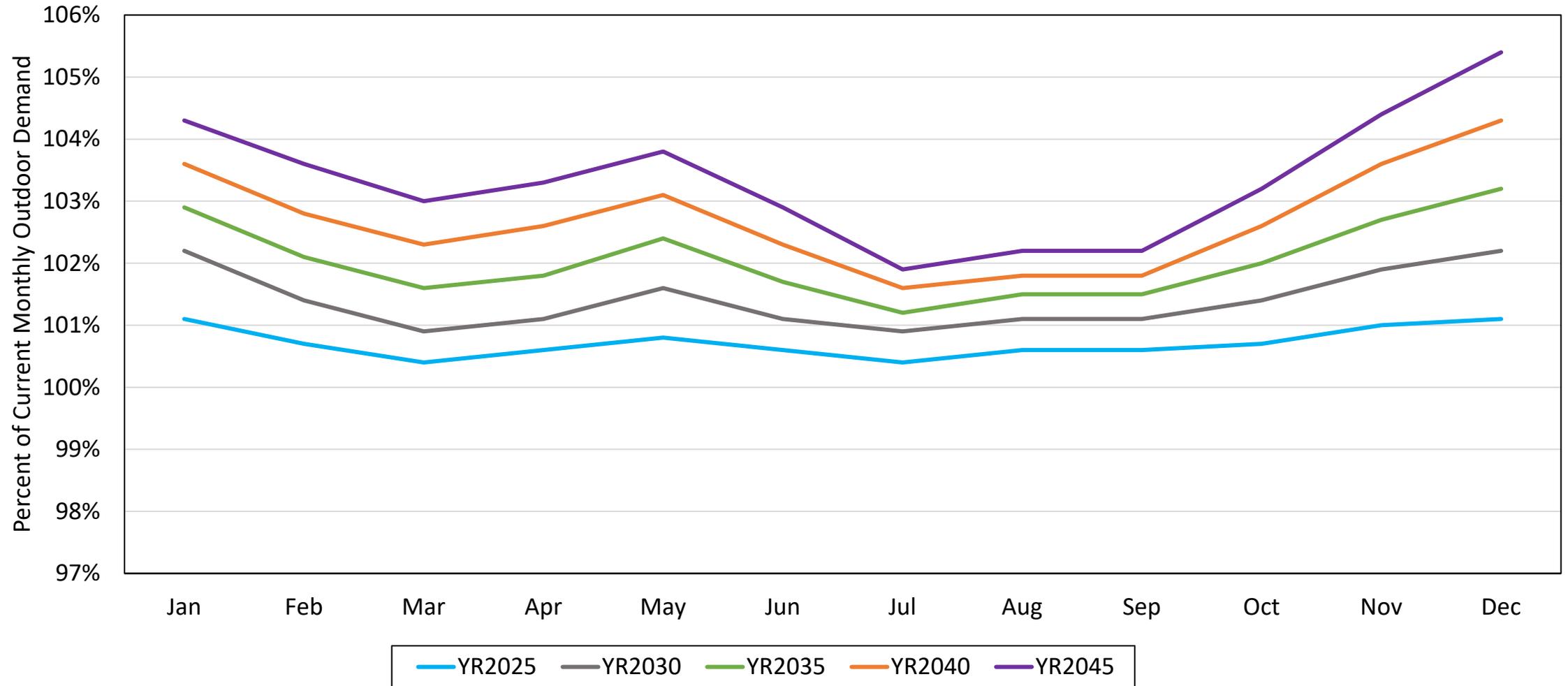
YearType	Scenario	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Normal	Median Future Climate	YR2025	100.4%	99.6%	100.0%	100.4%	96.1%	99.6%	99.3%	100.8%	100.6%	96.5%	98.0%	99.1%
Normal	Median Future Climate	YR2030	100.9%	99.1%	100.0%	100.9%	92.1%	99.1%	98.5%	101.6%	101.1%	92.9%	95.9%	98.2%
Normal	Median Future Climate	YR2035	101.7%	99.4%	99.1%	97.5%	90.3%	98.5%	100.7%	102.6%	103.8%	91.8%	93.3%	97.4%
Normal	Median Future Climate	YR2040	102.6%	99.6%	98.3%	94.2%	88.5%	97.8%	102.9%	103.6%	106.5%	90.6%	90.7%	96.6%
Normal	Median Future Climate	YR2045	103.4%	99.9%	97.4%	90.9%	86.8%	97.2%	105.1%	104.5%	109.1%	89.4%	88.1%	95.9%
Dry_1Yr	Median Future Climate	YR2025	101.8%	99.6%	100.7%	103.7%	94.3%	100.0%	100.0%	100.0%	100.6%	93.8%	96.7%	99.9%
Dry_1Yr	Median Future Climate	YR2030	103.6%	99.1%	101.4%	107.4%	88.6%	100.0%	100.0%	100.0%	101.1%	87.7%	93.3%	99.7%
Dry_1Yr	Median Future Climate	YR2035	103.9%	99.1%	100.5%	102.6%	86.2%	100.0%	100.0%	100.0%	106.1%	84.9%	88.8%	100.0%
Dry_1Yr	Median Future Climate	YR2040	104.1%	99.1%	99.7%	97.7%	83.8%	100.0%	100.0%	100.0%	111.1%	82.1%	84.3%	100.2%
Dry_1Yr	Median Future Climate	YR2045	104.3%	99.1%	98.8%	92.8%	81.4%	100.0%	100.0%	100.0%	116.1%	79.3%	79.8%	100.5%
Dry_5Yr	Median Future Climate	YR2025	100.0%	97.8%	99.6%	100.4%	94.8%	99.7%	100.0%	101.2%	100.1%	95.2%	97.8%	98.1%
Dry_5Yr	Median Future Climate	YR2030	100.0%	95.6%	99.1%	100.9%	89.5%	99.4%	100.0%	102.4%	100.3%	90.5%	95.6%	96.3%
Dry_5Yr	Median Future Climate	YR2035	100.9%	96.9%	98.2%	97.2%	87.3%	98.9%	100.0%	104.6%	101.0%	88.4%	92.6%	95.7%
Dry_5Yr	Median Future Climate	YR2040	101.8%	98.3%	97.3%	93.5%	85.1%	98.4%	100.0%	106.9%	101.8%	86.4%	89.7%	95.2%
Dry_5Yr	Median Future Climate	YR2045	102.6%	99.7%	96.4%	89.8%	82.9%	97.9%	100.0%	109.1%	102.5%	84.4%	86.8%	94.6%
Wet_1Yr	Median Future Climate	YR2025	100.6%	100.4%	98.8%	98.9%	95.4%	100.0%	100.0%	100.0%	98.6%	97.2%	98.6%	101.0%
Wet_1Yr	Median Future Climate	YR2030	101.1%	100.9%	97.6%	97.9%	90.9%	100.0%	100.0%	100.0%	97.2%	94.4%	97.2%	101.9%
Wet_1Yr	Median Future Climate	YR2035	101.8%	101.3%	98.0%	97.0%	87.8%	100.0%	100.0%	98.8%	103.1%	94.3%	97.8%	99.9%
Wet_1Yr	Median Future Climate	YR2040	102.6%	101.8%	98.4%	96.1%	84.7%	100.0%	100.0%	97.5%	109.0%	94.2%	98.3%	97.9%
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Wet_5Yr	Median Future Climate	YR2025	100.8%	100.4%	99.9%	100.1%	95.9%	99.9%	99.6%	100.6%	101.5%	96.9%	98.1%	99.3%
Wet_5Yr	Median Future Climate	YR2030	101.6%	100.9%	99.7%	100.3%	91.7%	99.7%	99.1%	101.1%	102.9%	93.8%	96.3%	98.5%
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# Projected Changes in Normal Year Rainfall - 2045



# Normal Year Outdoor Demand under Median Future Climate

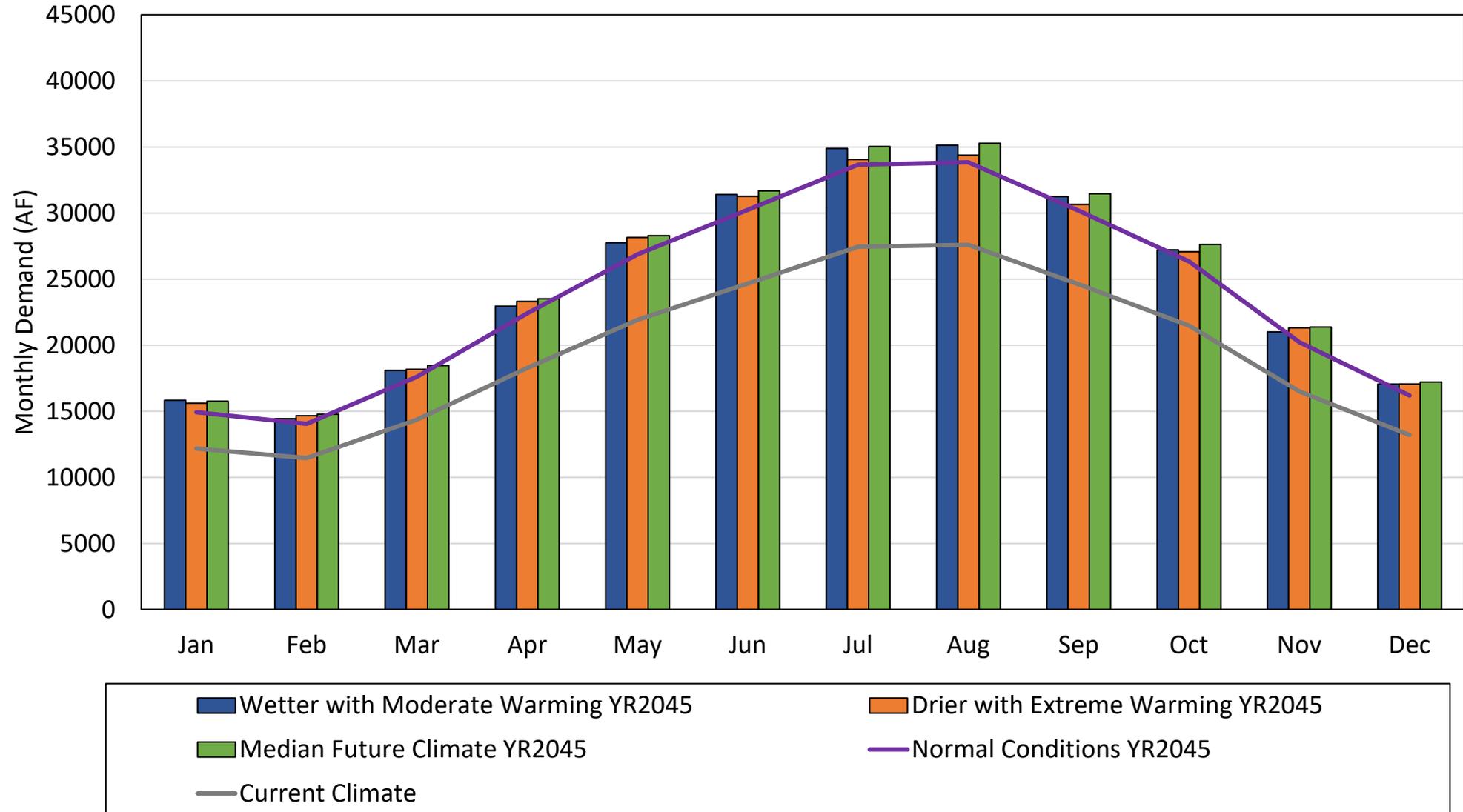


# Key Assumptions for Quantifying Water Supply Impacts

- Monthly distributions of recharge is proportional to monthly rainfall
- Outdoor water use is sensitive to both climate and population growth
- Indoor water use is only sensitive to population growth
- Water use is split between indoor (39%) and outdoor (61%)
- Population growth rate for the Western wholesale service area from Western's 2020 UWMP (approximately 1%)

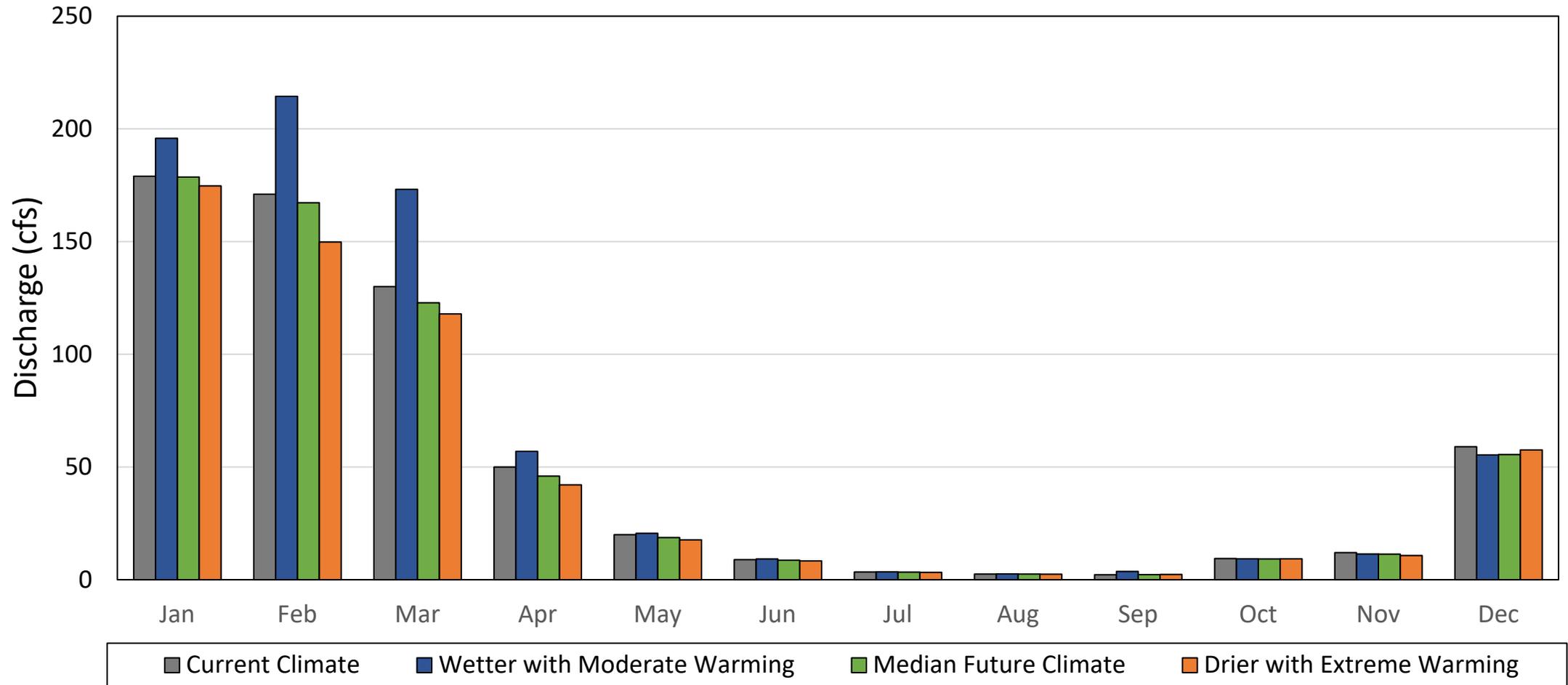


# Projected Changes in Normal Year Demand 2045



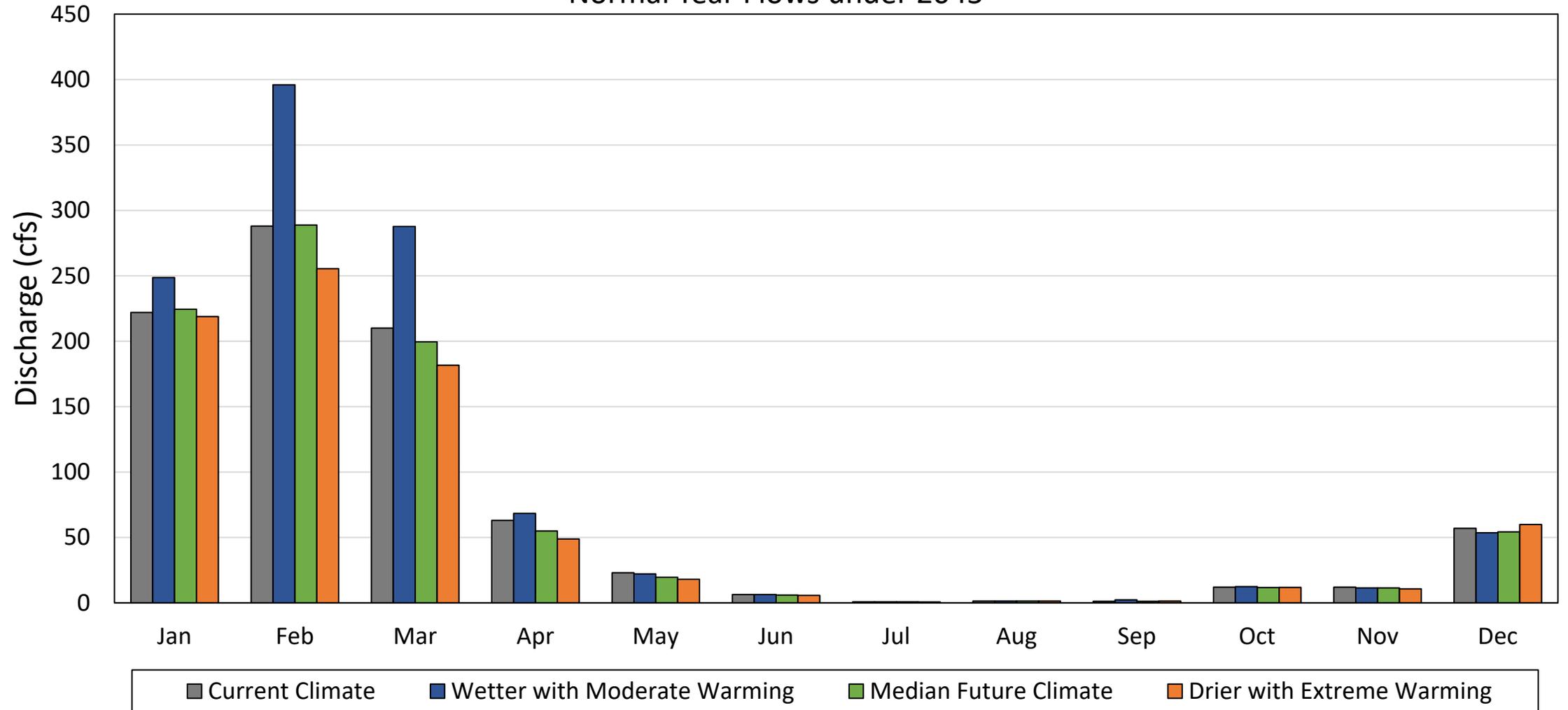
# Projected Changes in Normal Year Flow 2045: Santa Margarita

USGS 11046000 Santa Margarita River at Ysidora  
Normal Year Flows under 2045

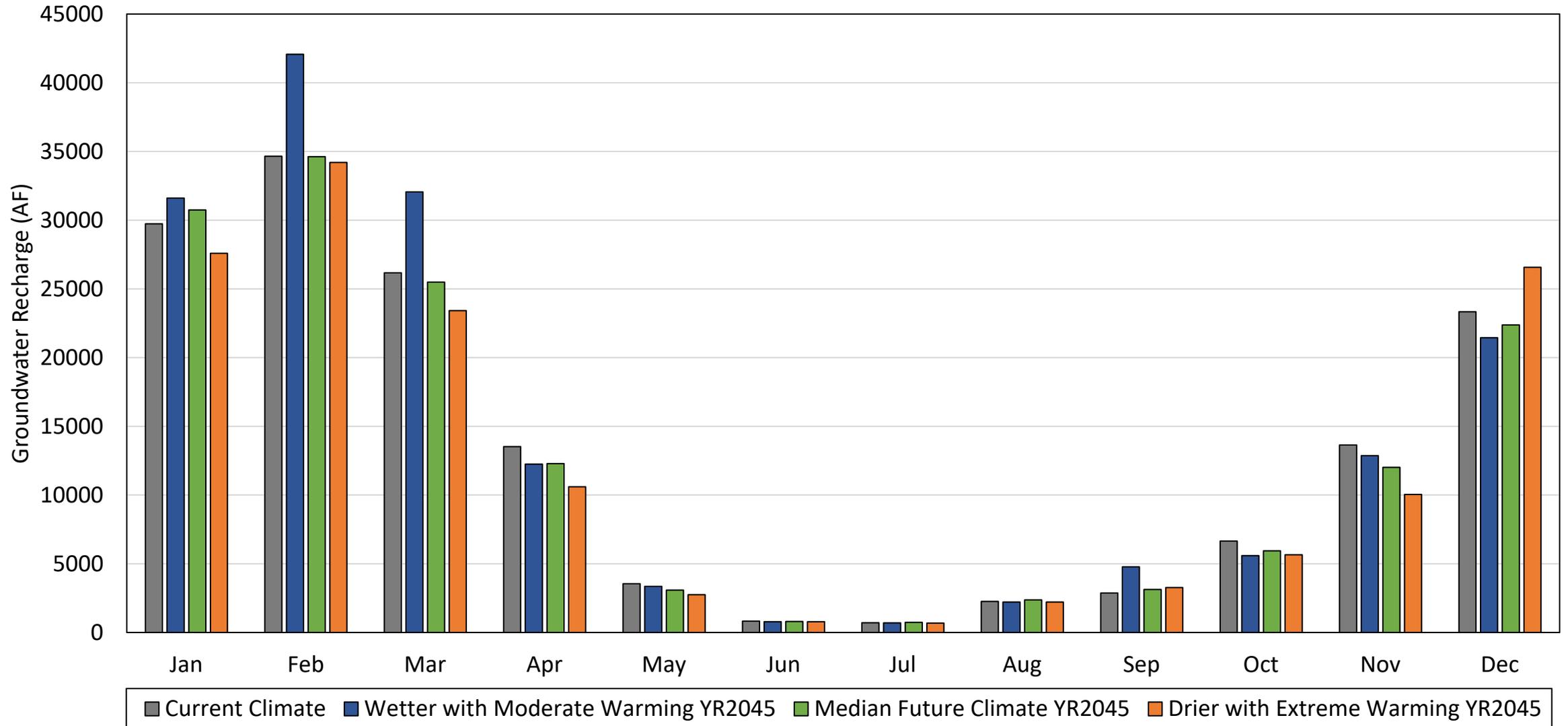


# Projected Changes in Normal Year Flow 2045: Santa Ana

USGS 11046000 Santa Ana River at Santa Ana  
Normal Year Flows under 2045



# Projected Changes in Normal Year Groundwater Supply 2045



# Key Takeaways: Changes by 2045

Rainfall could decrease or increase depending on scenario:

-7.2 % (Dry Hot) to +5% (Wet Warm) with Median of -2.7%

Large increase in Feb and Mar under the Wet Warm scenario

Demand Increases under all future scenarios:

+1.3% (Wet Warm) to +6% (Dry Hot) with Median of +3.4 %

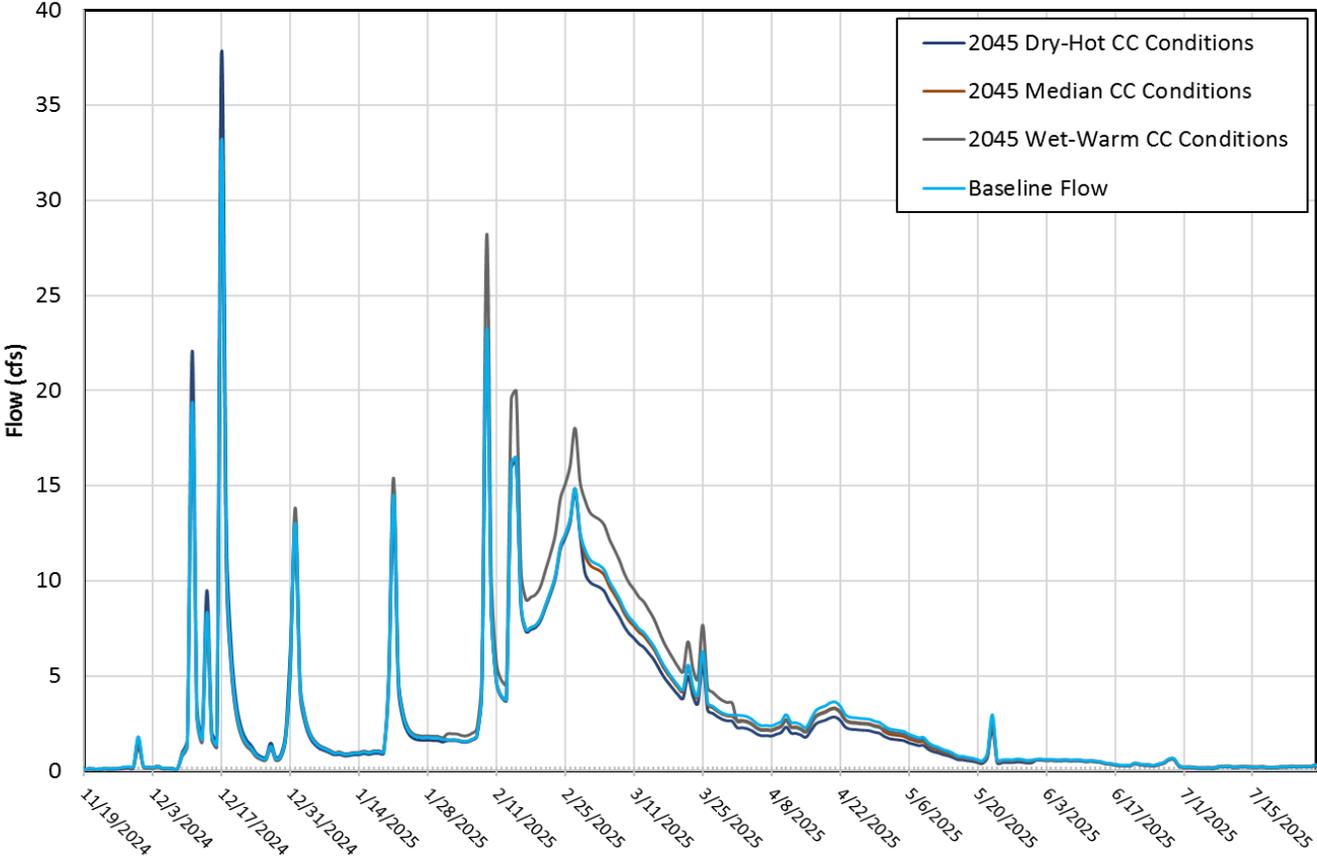
Santa Margarita : -5.9% (Dry Hot) to +12 % (Wet Warm) with Median of -3.1%

Santa Ana : -6.8% (Dry Hot) to +14.8 % (Wet Warm) with Median of -4.1%



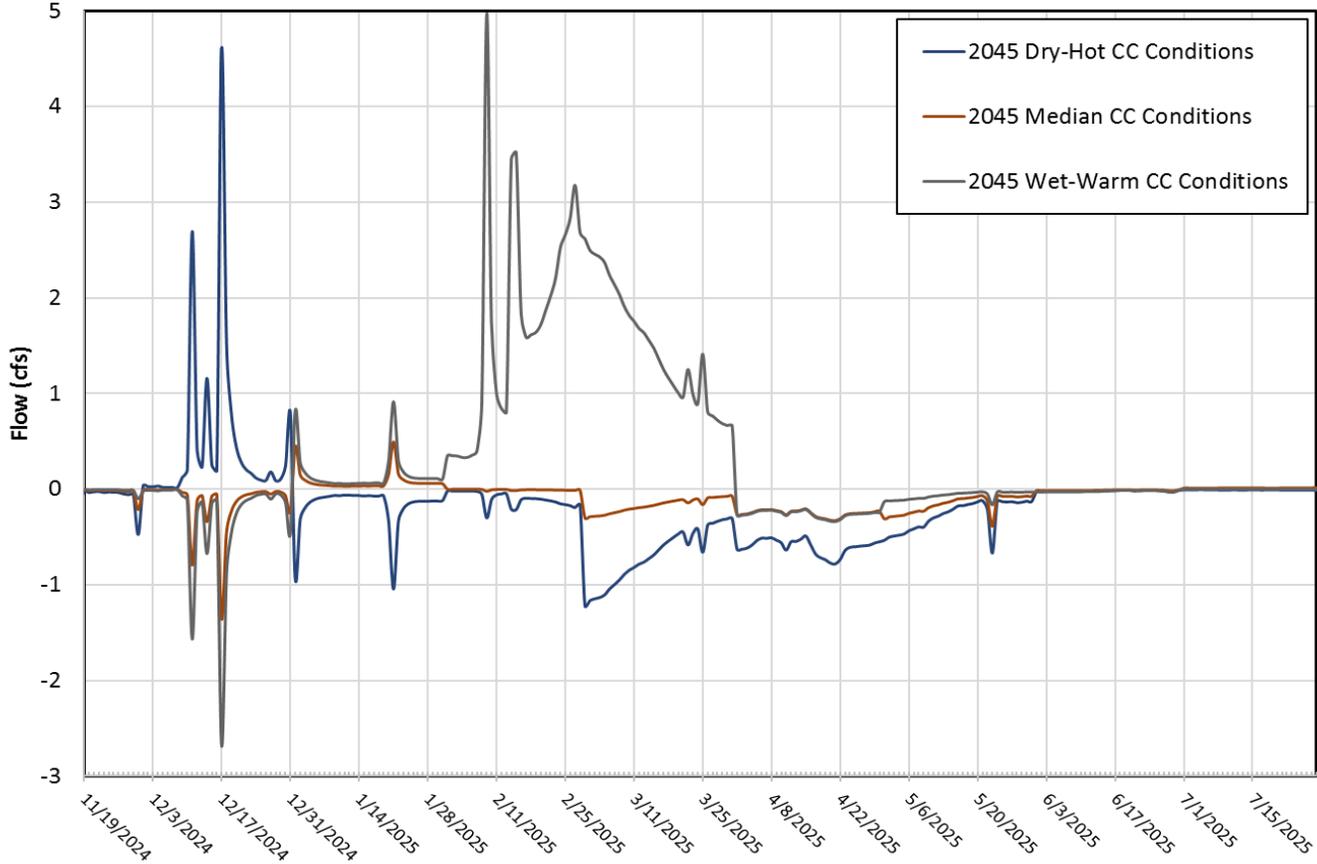
# Example of Stormflow Changes – Victoria Recharge Basin:

Western Municipal Water District - Victoria Recharge Basin  
Projected Daily Average Flow - Moderate Wet Storm



# Example of Stormflow Changes – Victoria Recharge Basin:

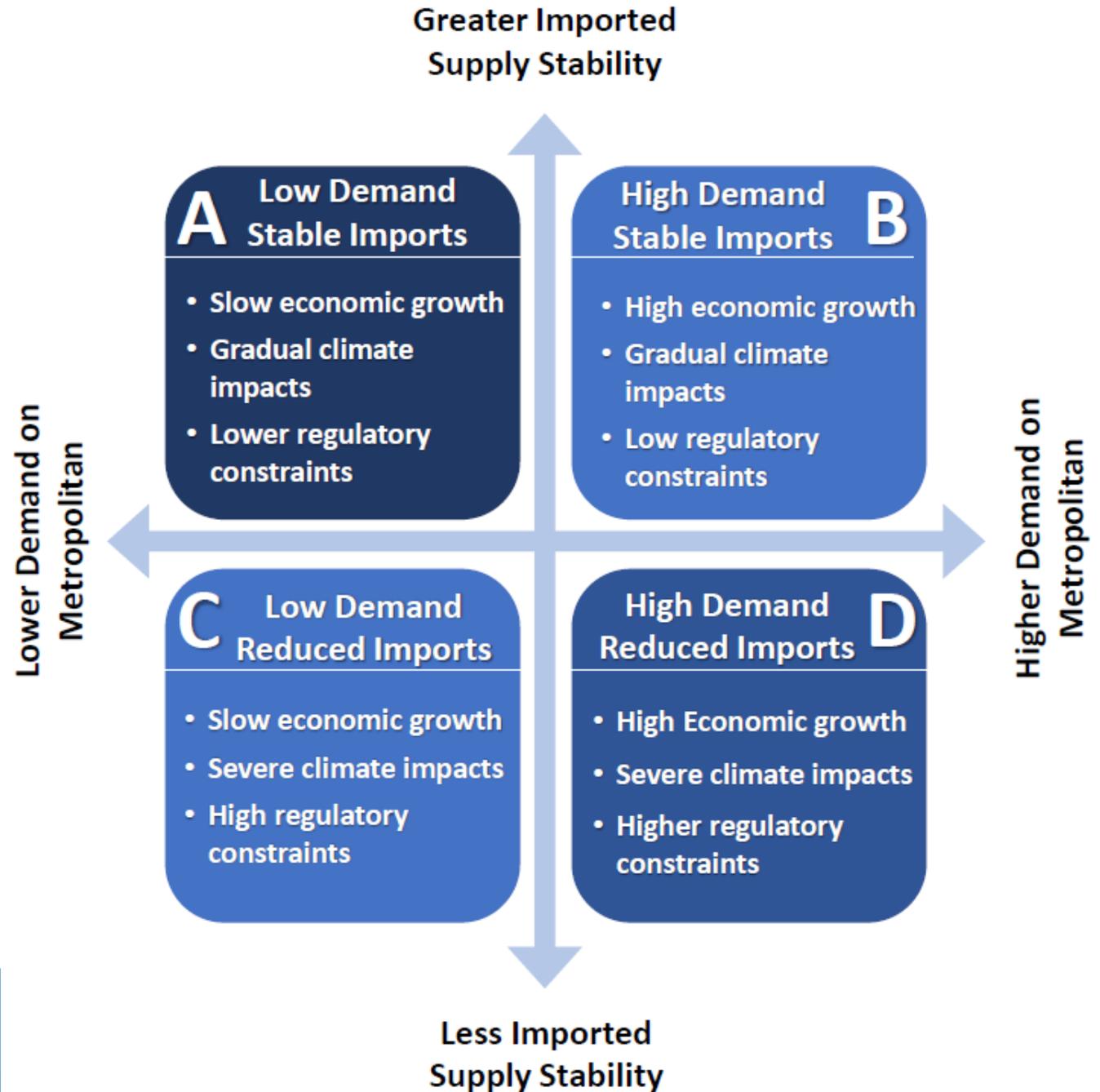
Western Municipal Water District - Victoria Recharge Basin  
Projected Flow Change - Moderate Wet Storm



# Projections from Metropolitan's Integrated Resource Plan (IRP)



# Metropolitan's Planning Scenarios



# Metropolitan's Planning Scenarios: Projections for Western Municipal

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
<b>Total Demand</b>	<b>217,173</b>	<b>228,147</b>	<b>229,438</b>	<b>230,080</b>	<b>229,812</b>	<b>230,406</b>
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
<b>Total Local Supplies</b>	<b>200,943</b>	<b>211,927</b>	<b>220,949</b>	<b>227,883</b>	<b>229,382</b>	<b>229,996</b>
<b>Total Imports</b>	<b>16,230</b>	<b>16,220</b>	<b>8,488</b>	<b>2,197</b>	<b>430</b>	<b>410</b>

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
<b>Total Demand</b>	<b>218,072</b>	<b>282,947</b>	<b>342,932</b>	<b>360,124</b>	<b>374,173</b>	<b>385,793</b>
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
<b>Total Local Supplies</b>	<b>201,356</b>	<b>214,323</b>	<b>224,958</b>	<b>234,818</b>	<b>244,401</b>	<b>253,378</b>
<b>Total Imports</b>	<b>16,716</b>	<b>68,624</b>	<b>117,974</b>	<b>125,306</b>	<b>129,772</b>	<b>132,415</b>

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
<b>Total Demand</b>	<b>217,173</b>	<b>228,147</b>	<b>229,438</b>	<b>230,080</b>	<b>229,812</b>	<b>230,406</b>
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
<b>Total Local Supplies</b>	<b>194,493</b>	<b>195,977</b>	<b>195,766</b>	<b>195,544</b>	<b>195,320</b>	<b>194,030</b>
<b>Total Imports</b>	<b>22,680</b>	<b>32,170</b>	<b>33,672</b>	<b>34,536</b>	<b>34,492</b>	<b>36,376</b>

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
<b>Total Demand</b>	<b>218,019</b>	<b>282,540</b>	<b>341,893</b>	<b>358,578</b>	<b>372,103</b>	<b>383,723</b>
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
<b>Total Local Supplies</b>	<b>190,608</b>	<b>192,393</b>	<b>193,126</b>	<b>192,781</b>	<b>192,132</b>	<b>190,797</b>
<b>Total Imports</b>	<b>27,411</b>	<b>90,147</b>	<b>148,767</b>	<b>165,797</b>	<b>179,971</b>	<b>192,926</b>



# Western DCP Drought Planning Scenarios:

Assumes no new local supplies

*Drier with Extreme Warming Future Climate  
Condition Projections*

	2025	2030	2035	2040	2045
Retail M&I	245,910	260,841	275,618	281,921	295,777
<b>Total Demand</b>	<b>245,910</b>	<b>260,841</b>	<b>275,618</b>	<b>281,921</b>	<b>295,777</b>
Groundwater Production	157,111	156,298	153,439	150,638	147,771
Surface Production	2,414	2,414	2,414	2,414	2,414
Recycling	6,908	6,908	6,908	6,908	6,908
Recycling - M&I and Agricultural	6,908	6,908	6,908	6,908	6,908
<b>Total Local Supplies</b>	<b>166,433</b>	<b>165,620</b>	<b>162,761</b>	<b>159,960</b>	<b>157,093</b>
Consumptive Use	79,477	95,220	112,856	121,961	138,685
<b>Total Net Demand on Metropolitan</b>	<b>79,477</b>	<b>95,220</b>	<b>112,856</b>	<b>121,961</b>	<b>138,685</b>



# WMWD Drought Planning Scenarios:

## *Median Future Climate Condition Projections*

	2025	2030	2035	2040	2045
Retail M&I	245,910	258,614	271,889	285,842	300,509
<b>Total Demand</b>	<b>245,910</b>	<b>258,614</b>	<b>271,889</b>	<b>285,842</b>	<b>300,509</b>
Groundwater Production	157,111	156,298	155,377	154,484	153,591
Surface Production	2,414	2,414	2,414	2,414	2,414
Recycling	6,908	6,908	6,908	6,908	6,908
Recycling - M&I and Agricultural	6,908	6,908	6,908	6,908	6,908
<b>Total Local Supplies</b>	<b>166,433</b>	<b>165,620</b>	<b>164,699</b>	<b>163,806</b>	<b>162,913</b>
Consumptive Use	79,477	92,994	107,190	122,037	137,596
<b>Total Net Demand on Metropolitan</b>	<b>79,477</b>	<b>92,994</b>	<b>107,190</b>	<b>122,037</b>	<b>137,596</b>

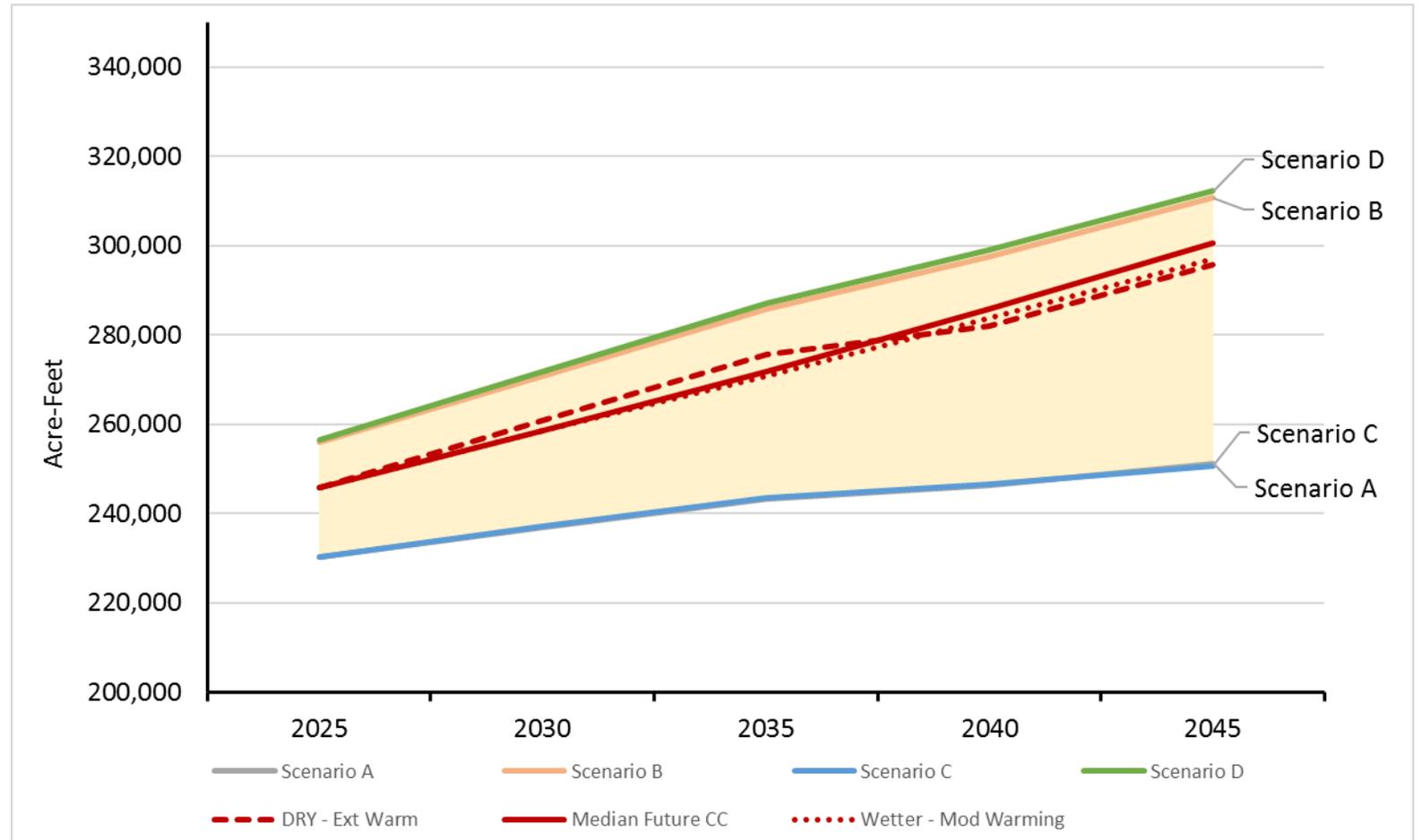
## *Wetter with Moderate Warming Future Climate Condition Projections*

	2025	2030	2035	2040	2045
Retail M&I	245,910	258,614	270,834	283,668	297,076
<b>Total Demand</b>	<b>245,910</b>	<b>258,614</b>	<b>270,834</b>	<b>283,668</b>	<b>297,076</b>
Groundwater Production	157,111	156,298	160,752	165,199	169,694
Surface Production	2,414	2,414	2,414	2,414	2,414
Recycling	6,908	6,908	6,908	6,908	6,908
Recycling - M&I and Agricultural	6,908	6,908	6,908	6,908	6,908
<b>Total Local Supplies</b>	<b>166,433</b>	<b>165,620</b>	<b>170,074</b>	<b>174,521</b>	<b>179,016</b>
Consumptive Use	79,477	92,994	100,760	109,148	118,060
<b>Total Net Demand on Metropolitan</b>	<b>79,477</b>	<b>92,994</b>	<b>100,760</b>	<b>109,148</b>	<b>118,060</b>



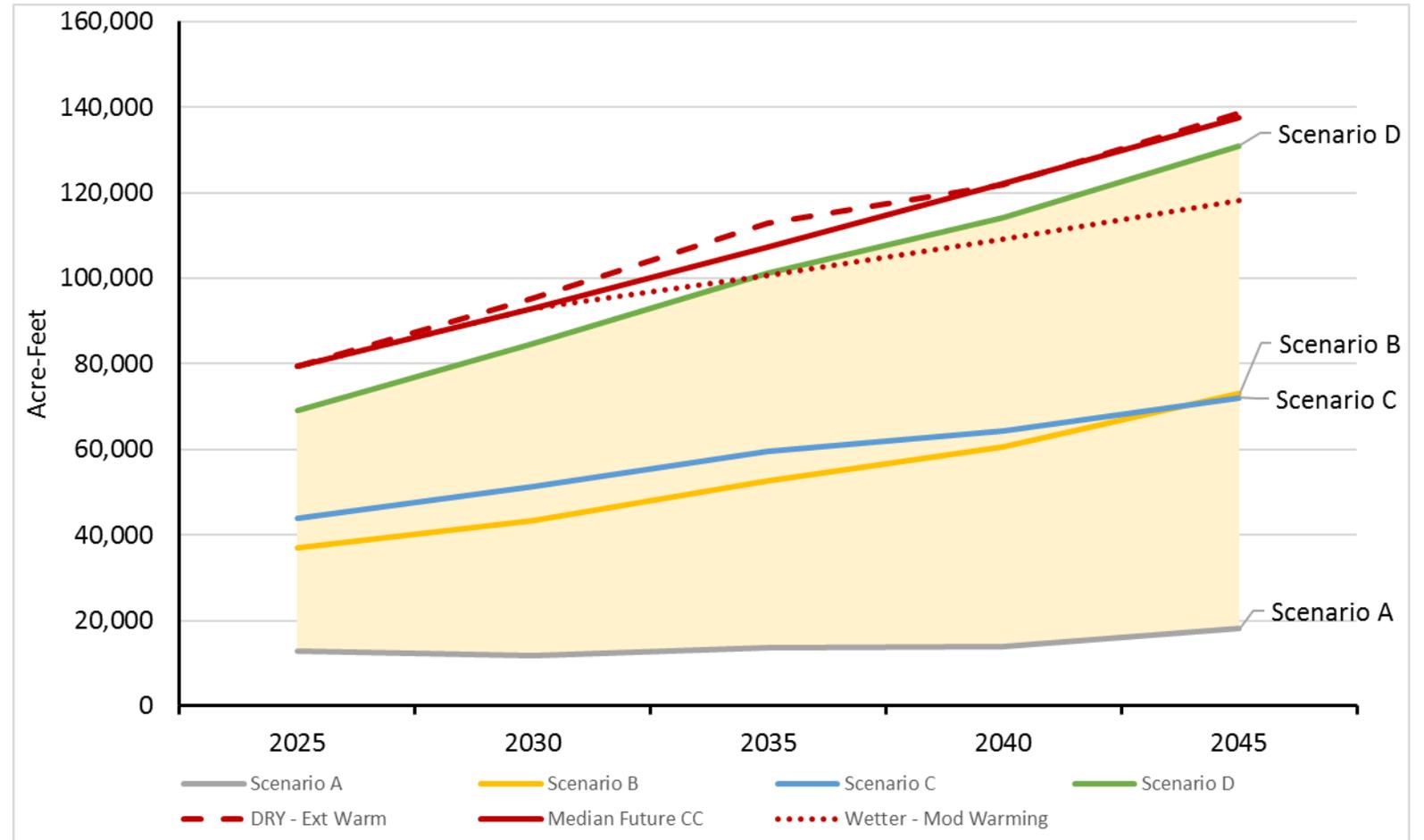
# MWD-IRP versus WMWD Scenarios:

TOTAL DEMANDS



# MWD-IRP versus WMWD Scenarios:

DEMAND ON MWD



# Key Takeaways

- Assuming no additional local supplies are developed, there will be a greater demand on Metropolitan in the future than projected for the region in the IRP process
- For those agencies who rely on Metropolitan, future supply gaps will need to be met by Metropolitan or by developing other local supplies (i.e., mitigation actions)
- For those agencies who rely on local supplies, future supply gaps will need to be met by developing additional local supplies (i.e., mitigation actions)



# ***Drought Task Force Survey: Mitigation Actions for the Drought Contingency Plan***

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Katie Laird, GEI

# What are “Mitigation Actions”?

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*Mitigation Actions are projects or programs that work to alleviate the impacts of droughts in the future. These actions are implemented ahead of a drought in anticipation of potential future shortages.*

## Categories of Types of Actions:

- Supply/Treatment
- Interties
- Storage
- Operations and Management



# *Why are mitigation actions important to you?*

## *Why should they be included in the DCP?*

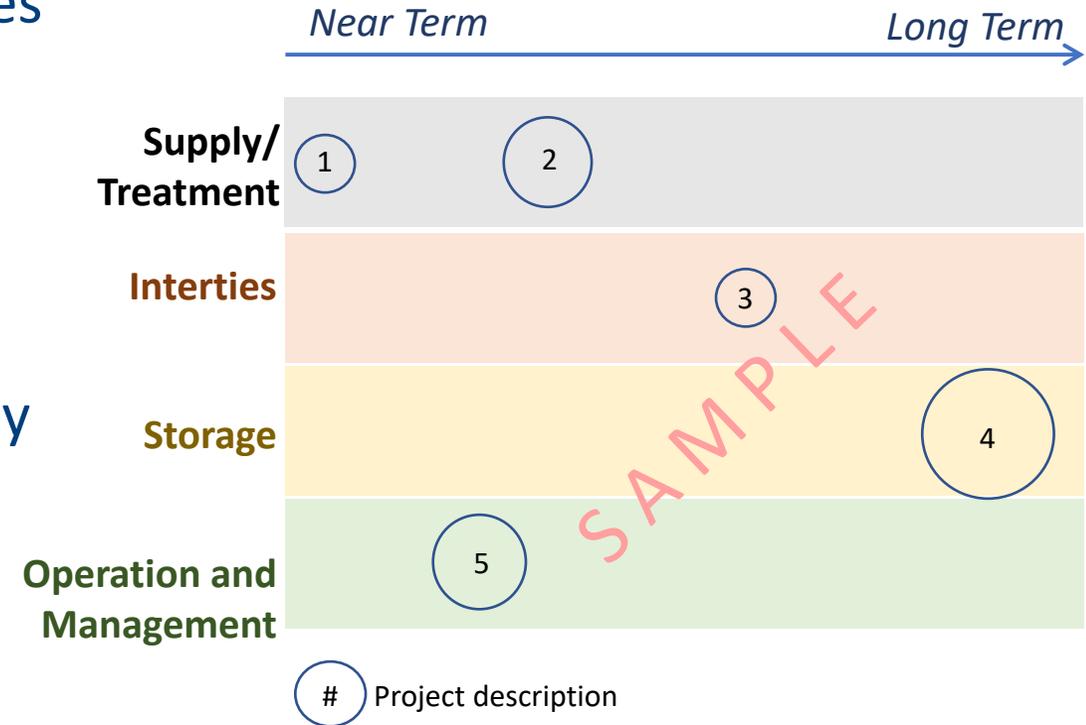
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- Mitigation Actions are water management improvements which **increase flexibility** in times of drought and increase **the region's resiliency**.
- The actions described in the DCP will help to facilitate **proactive planning** for the region's water supply reliability and help to **identify opportunities for alignment and engagement**.
- By including projects and programs in the DCP, the projects have increased opportunities for **grant funding**
  - USBR- WaterSMART Drought Program
  - DWR -Urban Community and Multi-benefit Drought Relief Program
  - Others



# How will projects/programs be included in the DCP?

- Inclusion of project descriptions in the DCP will be done in alignment with existing planning processes and programs.
- Project proponents maintain authority of project elements.
- DCP is a high-level planning document and recognizes that plans, budgets, and schedules may change.
- The intention of the DCP is to facilitate regional coordination and inclusion in the DCP does not imply any commitment or obligation for implementation.



# Supply and Treatment Projects/Programs

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*Includes the creation of access to additional water supplies that leverages existing water supply sources, creates new sources of supply, and/or improves treatment capacity in existing plants to treat new, more challenging local water supplies*

## Examples:

- New or deeper wells
- Facilities to treat saline groundwater
- New or expanded recycled water treatment and distribution facilities
- Groundwater recharge
- Stormwater capture



# Interties

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*Includes the construction of new physical connections between agencies that would allow transfer of water supply between and among Task Force members.*



# Storage

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*Includes the expansion of water storage capacity.*

## Examples:

- Groundwater banking projects
- Surface water storage
- Groundwater recharge



# Operations and Management

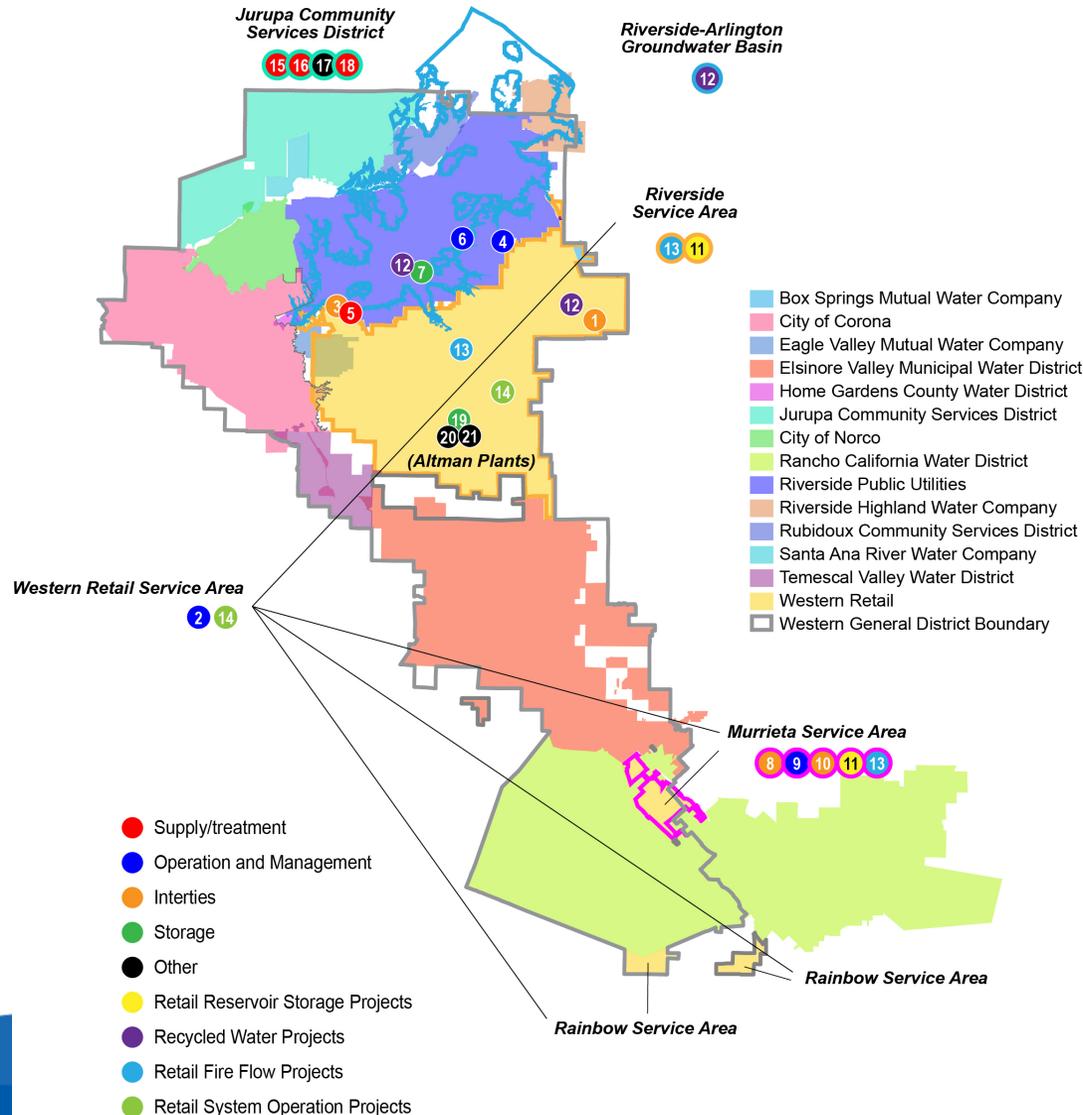
*Includes changes in water management practices that do not require new or modified infrastructure.*

## Examples:

- Ordinances aimed at long-term conservation (i.e., xeriscaping)
- Conservation Programs (i.e., rebates, education programs, leak detection)
- Metering
- Transfer and Exchange Programs or Agreements



# What projects or programs does your organization have in development that would potentially mitigate drought impacts in the future?



## Western Municipal Water District

- 1 Western/Eastern Municipal Water District March Air Force Base (MARB) Interconnection
- 2 Advanced Metering Infrastructure (AMI) and Customer Portal
- 3 Magnolia Intertie
- 4 Cannon/Campbell Pump Station
- 5 Arlington Desalter System Well Rehab and Reverse Osmosis Membrane Replacement
- 6 Mills Gravity Line Upgrades
- 7 Stormwater Capture and Spreading
- 8 Rancho California Water District/Western Murrieta Interconnection
- 9 South of Murrieta Creek Service Connection for Private Well Owners
- 10 Elsinore Valley Municipal Water District/Western Murrieta Interconnection
- 11 Retail Reservoir Storage Projects
- 12 Recycled Water Projects
- 13 Retail Fire Flow Projects
- 14 Retail System Operation Projects

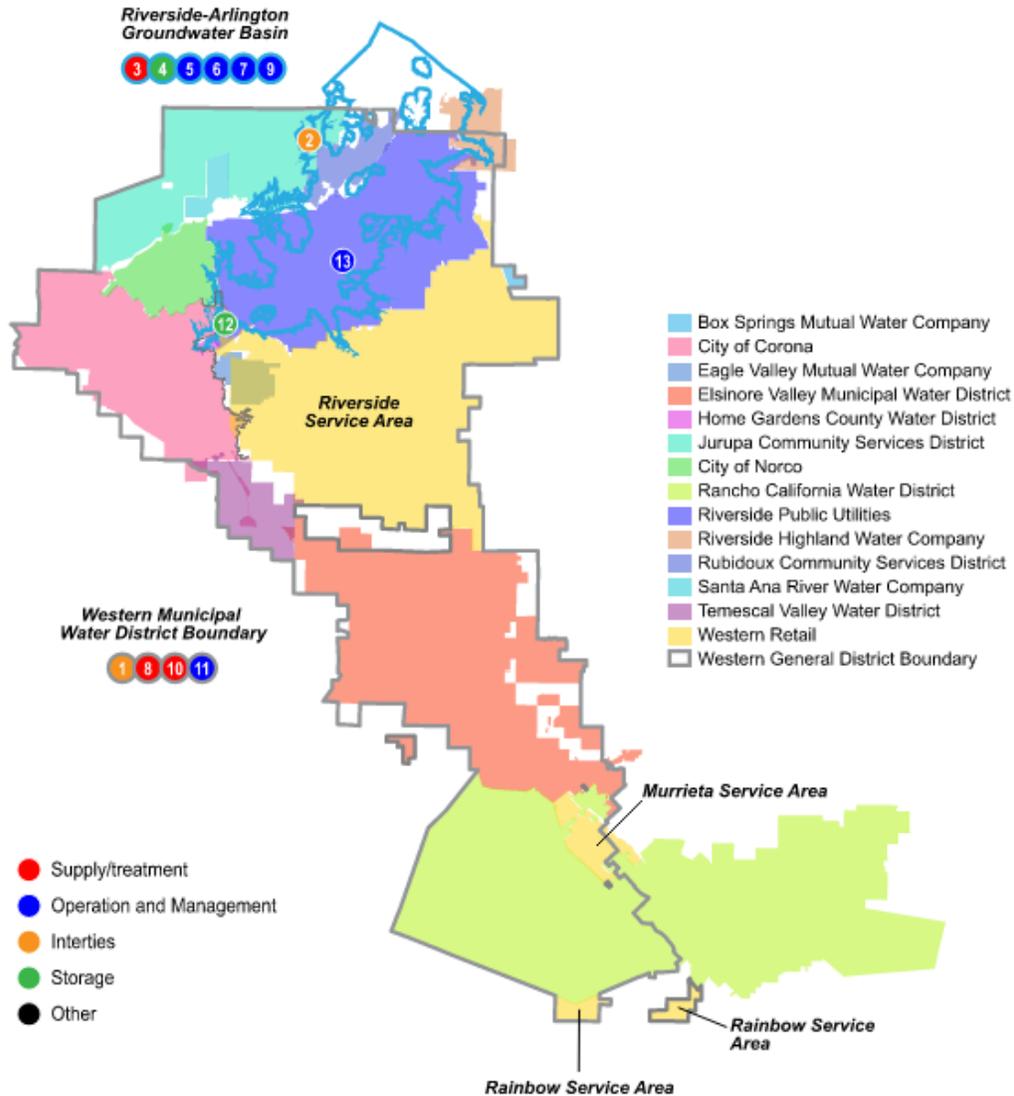
## Jurupa Community Services District

- 15 Recycled Water Service Expansion Project
- 16 Etiwanda Intervalley Water Quality and Water Resiliency Project
- 17 Drought Outreach Plan
- 18 Well Exploration in the Chino Basin

## Altman Plants

- 19 Additional Stormwater Storage Capacity
- 20 Sensor Based Irrigation
- 21 Soil Additives to Reduce Water Frequency

# What other project or programs do you think would be helpful for the region in mitigating the impacts of drought in the future?



## Western Municipal Water District

- 1 Interconnections Between Western's Retail Agencies
- 2 Interconnections With RCSD
- 3 Using Recycled Water for Irrigation
- 4 Surface Water Injection or Spreading (Arlington GSP Project)
- 5 Metering and Collection of Groundwater Pumping (Arlington GSP Project)
- 6 Replacement of Invasive or Nonnative Vegetation With Native Plant Species (Arlington GSP Project)
- 7 Water Transfers/In-Lieu Groundwater Recharge (Arlington GSP Project)
- 8 Activities That Promote and Incentivize Conservation (Arlington GSP Project)
- 9 Programs That Redistribute Pumping (Arlington GSP Project)
- 10 Leak Detection Program (Arlington GSP Project)
- 11 Water Loss Mitigation Program
- 12 Arlington Reservoir for Local Groundwater Storage
- 13 Hydroelectric Power Generation



# *Small Group Breakout*

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Amy Stevens, WSC

# Questions

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- 1. What projects or programs does your organization have in development that would potentially mitigate drought impacts in the future?**
  - Self-Complete
  - List project by type
  - Include the project name, agency name, and timeframe
- 2. What other project or programs do you think would be helpful for the region in mitigating the impacts of drought in the future?**
  - Discussion led by group facilitator
  - Large group will discuss this more after breakouts



# Responses

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## 1. What projects or programs does your organization have in development that would potentially mitigate drought impacts in the future?

### Ted Beckwith

1. RCSD is working on an inter tie with WVMWD right now. Expected completion in 2022.
2. Five agency agreement with WMWD, MWD, SBVMWD, WVMWD and RCSD..
3. Completed PFOS Treatment this year. New wells (Few years out) to serve future needs in the District but we'll have excess water that will need treatment for a plethora of constituents and TDS Mitigation. We don't have funding for RO plant construction.
4. Riverside groundwater basin - if stable - can produce more water that buildout, but has wq probs

### EMWD

1. Supply /Treatment: Purified Water Replenishment, 2025
2. Recycled Water Expansion - ongoing.
3. Perris South Desalination Program Expansion - 2030.
4. Additional Groundwater Wells - 2030. Enhanced Recharge and Recovery, Phase II - 2030



# Responses

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## 2. What other project or programs do you think would be helpful for the region in mitigating the impacts of drought in the future?

### Ted Beckwith

Reverse osmosis plant to put more water into local area, strip TES (potentially partner with JCSD and others)

### Jim Hessler

- Water recycling collects water runoff for irrigation. Not capturing the influx of water from stronger storms. Added 50 acre feet but need more
- Sensor based irrigation – has wiring and computers set up, working on the data collection, challenge with variety of types and sizes of growth so determining irrigation cycles is tough,
- Has some good case studies for water savings for sensor based irrigation and stormwater capture at commercial facilities
- Additional storage for the State Water Project (Sites Reservoir)
- Additional resources for homeowners to install/retrofit to more efficient irrigation systems. Both educational outreach and financial incentives.
- Financial incentives for homeowners to install tankless water heaters

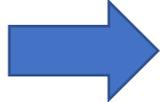


# *What's next?*

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Laine Carlson, WSC

# Drought Contingency Plan Next Steps



Activity	Timeframe
Workshop #4 will be held to present the results of GEI’s expanded Climate Change Vulnerability Analysis (CCVA), review the results of the drought mitigation activities survey and refine the drought mitigation activities to be included in the DCP. The updated CCVA TM will also be provided to the Task Force for review and comment.	December 16 <sup>th</sup> , 2021 from 2-4pm
Updated CCVA TM and Drought Monitoring Framework TM provided to Task Force for review and comment	January 2022
Drought Mitigation Actions TM to Task Force for review	February 2022
Task Force members will receive the Draft DCP for review and comment	Draft DCP comment period will be from Mid-March 2022 to mid-May 2022
Workshop #5 will be held mid-way through the Draft DCP comment period to review the contents of the plan and discuss any questions or comments	Mid-April 2022
Task Force feedback will be incorporated into a Public Draft DCP that will be released for public review	June 2022
The DCP will be presented to the Western Board of Directors for adoption	July 2022

*Attend workshop No. 5*

DCP Review and Discussion

**April**

**ALL TASK FORCE MEMBERS ARE REGISTERED**

Watch for Zoom details by email from WSC

**[wmwd.com/UWMP](http://wmwd.com/UWMP)**



# ***Thank you!***

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*Email Amy Stevens with any questions or additional comments.*

**astevens@wsc-inc.com**

