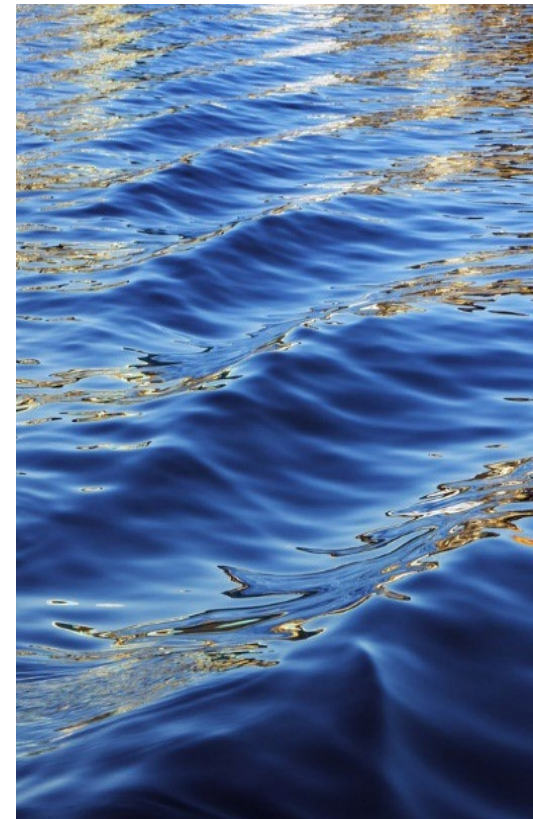


September 19, 2022  
Board Meeting  
General Manager's Report  
Item 17

Consider Adoption of  
District's 2022 Supply and  
Demand Forecast

David J. Stoldt  
General Manager

September 19, 2022



# Our Water Supply Needs: *Where Should We Be Going?*

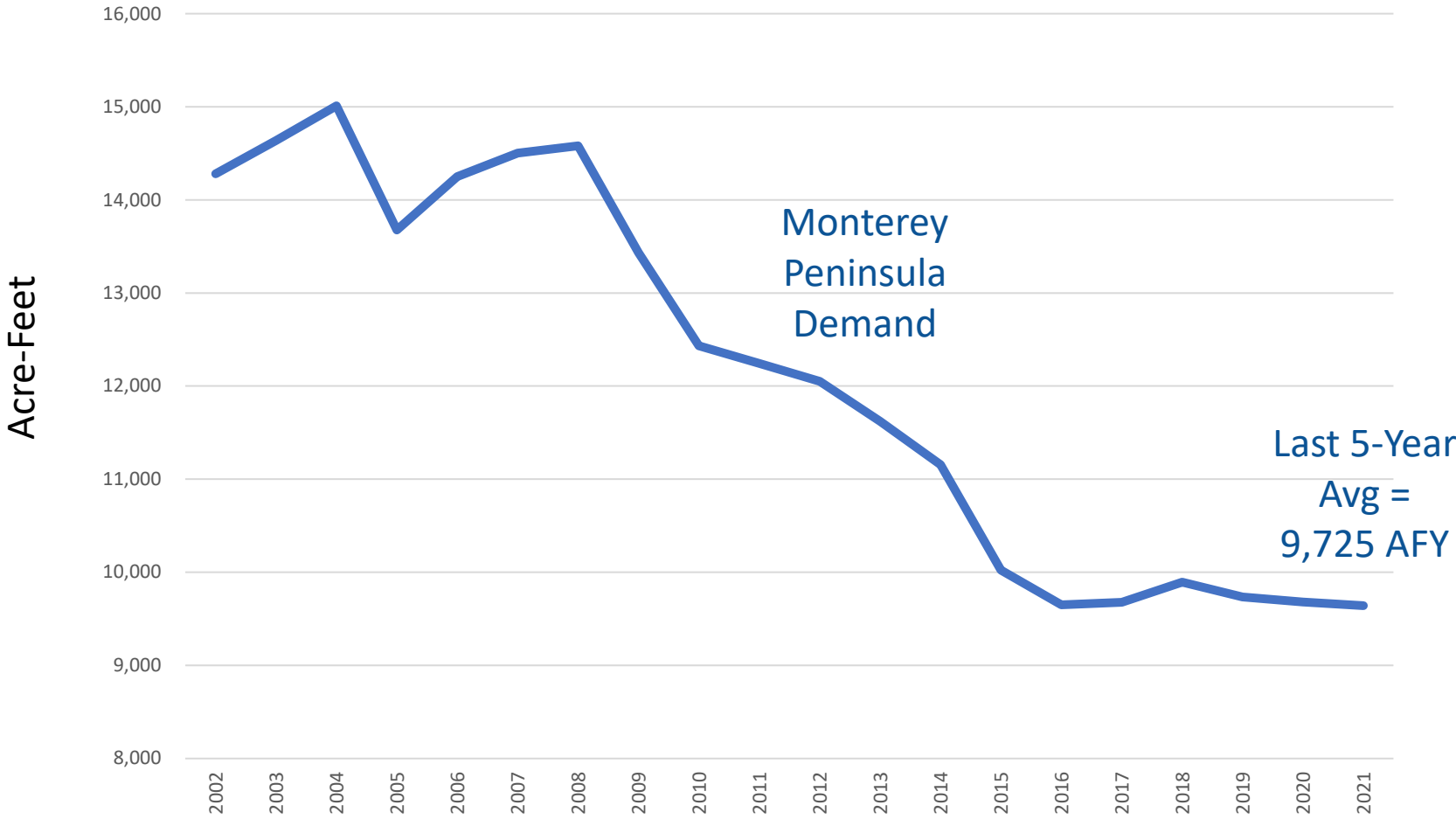
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## Water Supply Planning – *3 Easy Questions*

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- How much water do we use today?
- How much will we need in the future?
- How soon will we get there?

# How Much Do We Use Today? *Demand – Last 20 Years*



## Back to the Future – *Where Does Our Current Demand Rank?*

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- Lowest annual demand since 1958
- 54% of the Peninsula peak of 18,117 AFY in 1987
- 28% reduction since the CDO in 2009

## How Much Will We Need in the Future & How Soon?

- It is OK to brainstorm future needs.
- But, must avoid the “double-counting”.
- Bad idea not to build new supply on a timely basis – hello CDO...
- Also, a bad idea to overbuild too soon.
- Total future needs are not independent of future growth forecast.
- Hence, consider use of 3<sup>rd</sup> party forecast

## How Does MPWMD Forecast Water Use?

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## Concept: Objective 3<sup>rd</sup>-Party Forecast

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- We looked at pre-CDO growth, but city managers said “No”; We asked for their input, but city managers said “Really don’t know” ....
- So looked for an outside 3<sup>rd</sup>-Party forecast of growth. Found it in AMBAG.
- District maps/correlates consumption (pre-COVID) by use and by jurisdiction to ‘production’ history – the total water needed to feed the system.
- Then applies AMBAG population and non-residential growth to water use.



# AMBAG Regional Growth Forecast

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- Use of a fully-vetted third-party growth forecast is a very objective way for projecting water demand increase without bias.
- AMBAG implemented an employment-driven forecast model for the first time in the 2014 forecast and contracted with the Population Reference Bureau (PRB) to test and apply the model again for the 2018 Regional Growth Forecast (RGF).
- To ensure the reliability of the population projections, PRB compared results with a cohort-component forecast, a growth trend forecast, and the most recent forecast published by the California Department of Finance (DOF). **All four models** resulted in similar population growth trends. As a result of these reliability tests, AMBAG and PRB chose to implement the employment-driven model again for the 2022 Regional Growth Forecast.
- AMBAG has undergone a very vigorous testing regime of its models.

## *Monterey Bay 2045*

# ***Moving Forward***

Sustainability.  
Mobility.  
Accessibility.  
Economy.  
Social Equity.



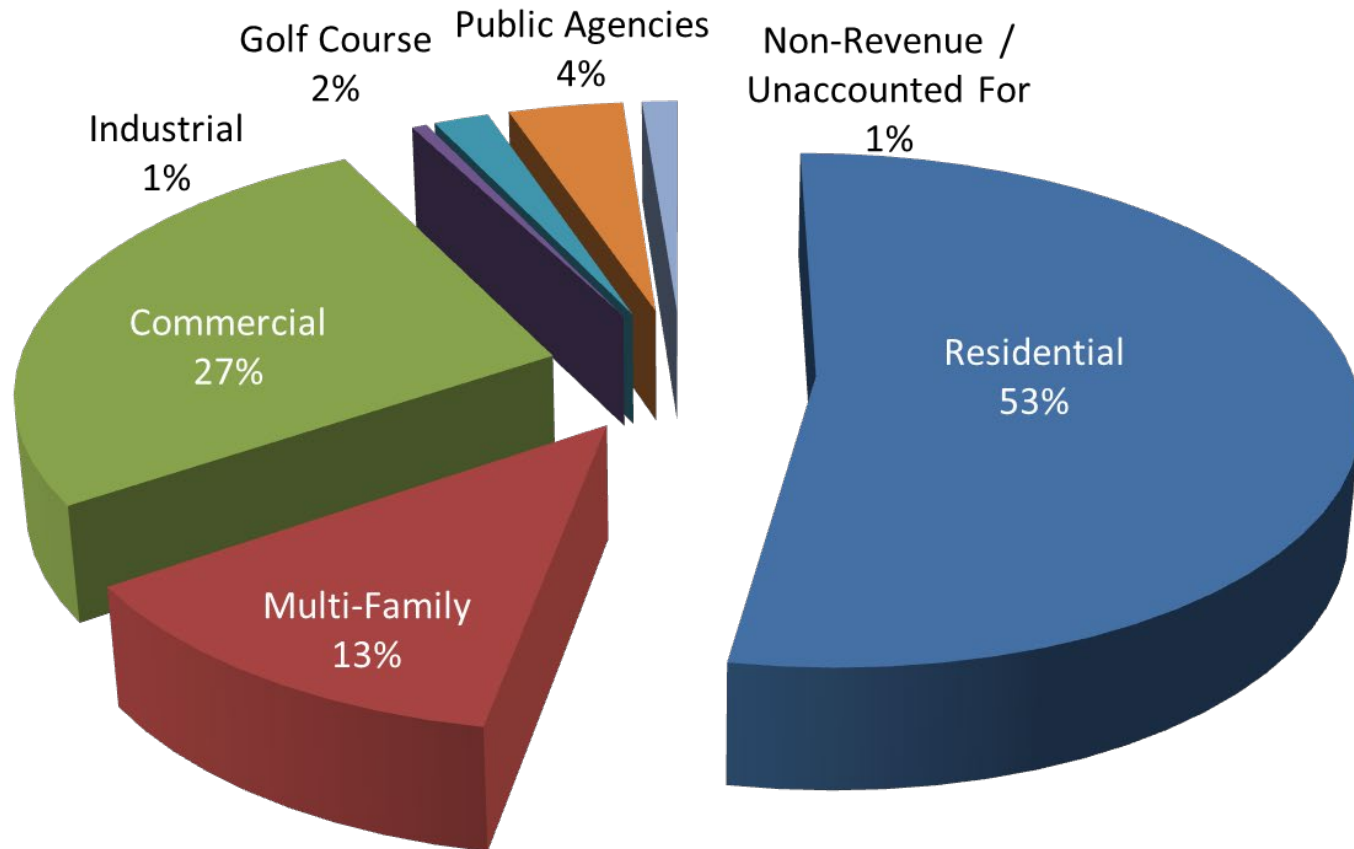
## AMBAG 3<sup>rd</sup> - Party Forecast

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- Are future population numbers in there? **Yes, included.**
- Are Legal Lots of Record in there? **Yes, where houses for people get built.**
- What about new RHNA numbers? **Yup! In there... just look at the reports.**
- Pebble Beach entitlements, Tourism economic rebound? **Yep, and yep....**
- All population and business growth on the Peninsula? **Yep**

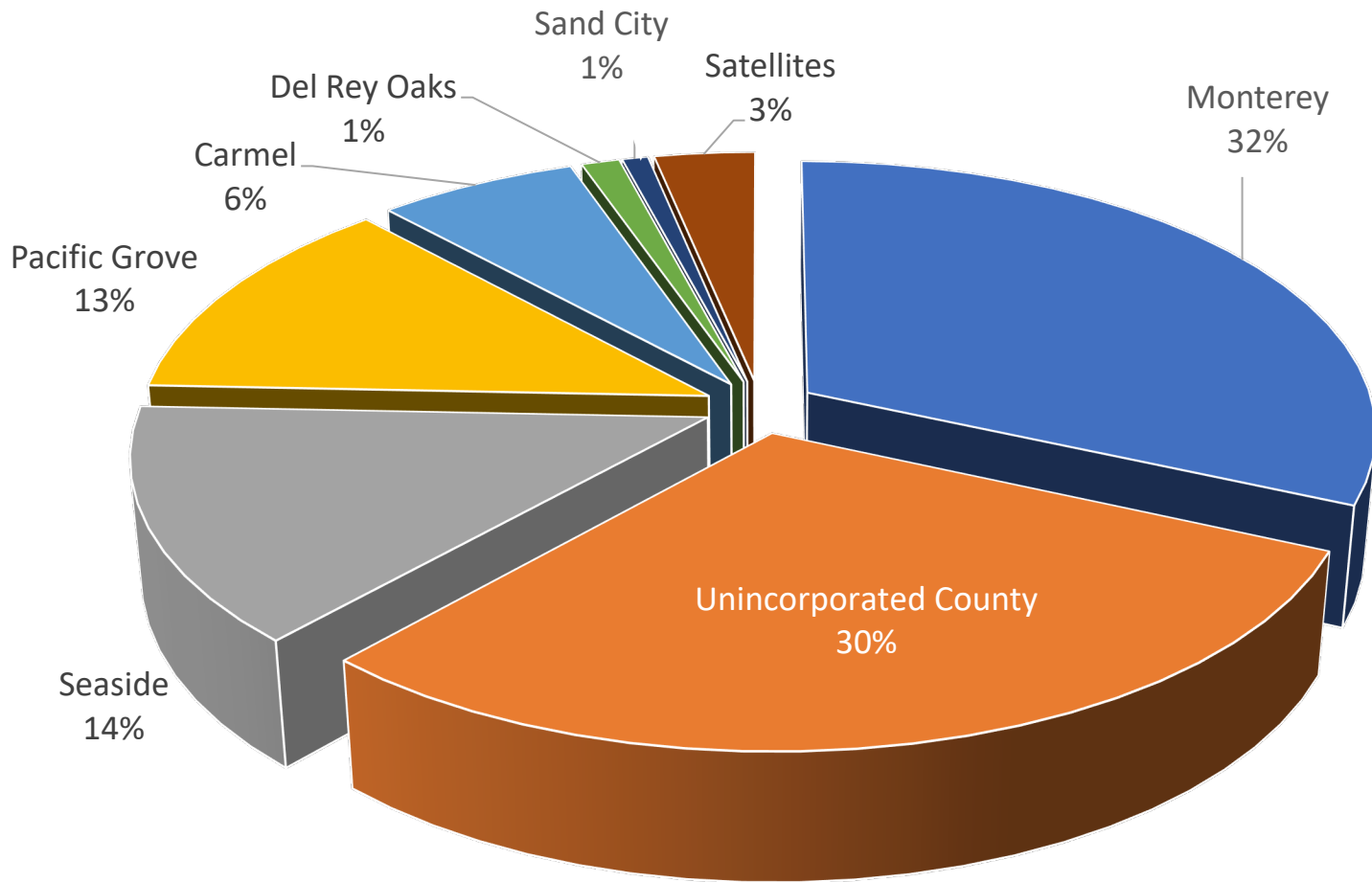
# Water Demand by Use – 2021

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# Water Demand by Jurisdiction – 2021

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# Residential Demand by Jurisdiction

	Monterey	Pacific Grove	Carmel-by-the-Sea	Seaside	Del Rey Oaks	Sand City	County	TOTAL
Population in 2020	28,170	15,265	3,949	33,537	1,662	385	8,916	91,884
Population in 2045	29,639	15,817	3,984	38,316	2,650	1,198	9,916	101,520
Increase	5.2%	3.6%	0.9%	14.2%	59.4%	211.2%	11.2%	10.5%
Acre-Feet in 2020	1,675	908	413	1,015	92	21	2,221	6,345
Acre-Feet by 2045	1,762	941	417	1,160	146	65	2,471	6,961
AF Served by Others	9	-	-	72	11	-	75	167
Net AF in 2045	1,753	941	417	1,087	135	65	2,396	6,795

# Non-Residential Demand by Jurisdiction

	Monterey	Pacific Grove	Carmel-by-the-Sea	Seaside	Del Rey Oaks	Sand City	County	TOTAL
Jobs in 2020	40,989	8,016	3,566	10,476	748	2,092	4,300	70,187
Jobs in 2045	45,509	8,445	3,915	11,543	834	2,259	4,721	77,226
Increase	11.0%	5.4%	9.8%	10.2%	11.5%	8.0%	9.8%	10.0%
Non-Residential AF in 2020	1,547	332	225	336	22	66	853	3,380
Non-Residential AF in 2045	1,718	349	247	370	24	71	936	3,716
Increase	171	18	22	34	3	5	83	336

# Overall Summary of Demand

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## Present & Future Water Needs

	Base Year (2020)	Estimate For 2045 AMBAG	AF per Year
Net Water for Population	6,345 AF	6,795 AF	18.00
Water for Non- Residential	3,380 AF	3,716 AF	13.44
Total	9,725 AF	10,511 AF	31.44

## Demand Forecast

	2020	2025	2030	2035	2040	2045	2050	2055
Water Demand - AF	9,725	9,882	10,039	10,196	10,353	10,511	10,668	10,825



# Supply v. Demand

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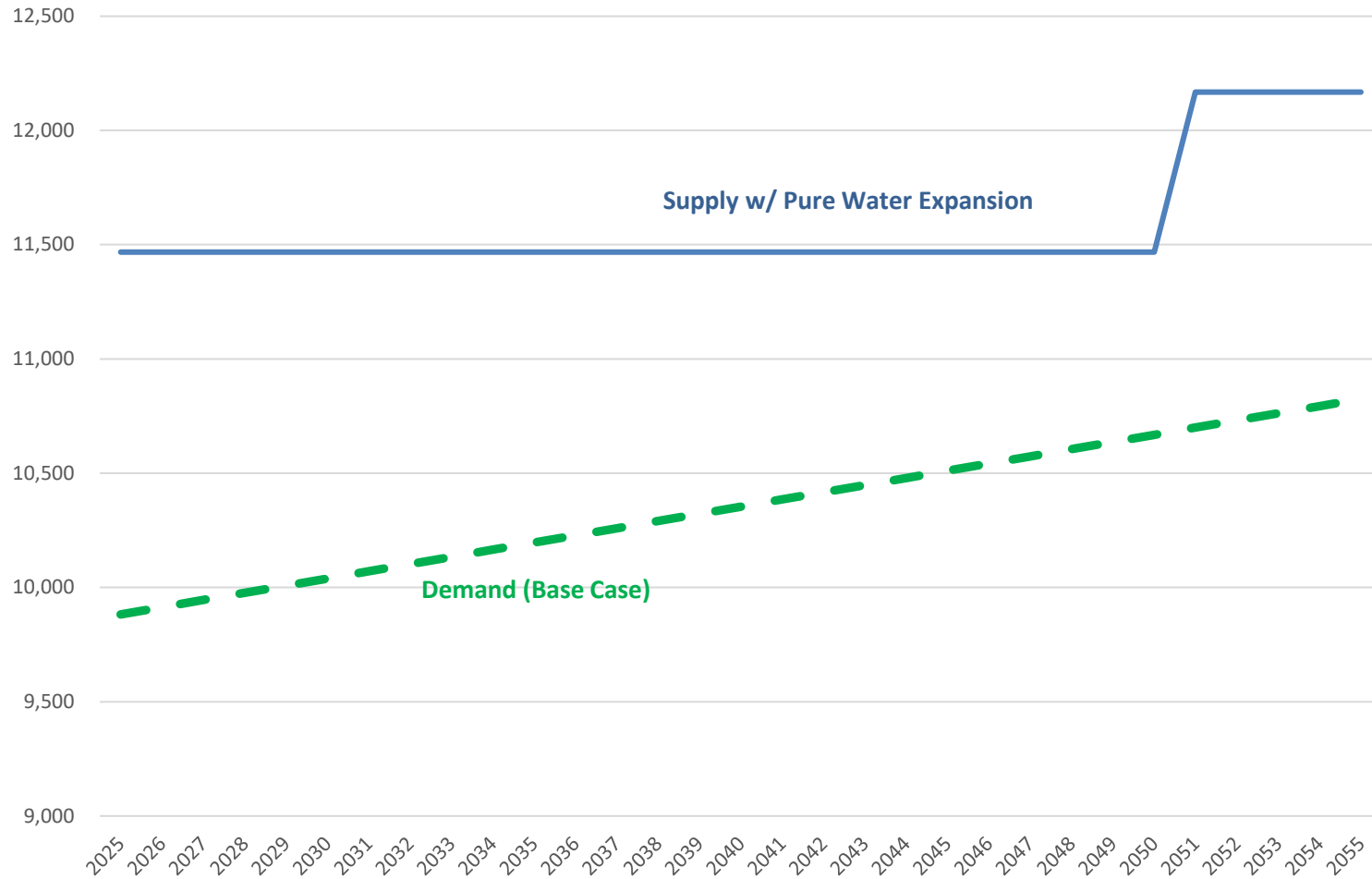
## Supply Available

Supply Source	Today	w/ PWM Expansion
Pure Water Monterey	3,500	3,500
PWM Expansion		2,250
Carmel River	3,376	3,376
Seaside Basin	1,474	774
Aquifer Storage & Recovery (ASR)	1,300	1,300
Sand City Desalination Plant	210	210
Table 13 Water Rights	0	0
Malpaso Water Rights	58	58
<b>Total Available Supply</b>	<b>9,918</b>	<b>11,468</b>

## Demand Forecast

	2020	2025	2030	2035	2040	2045	2050	2055
Water Demand - AF	9,725	9,882	10,039	10,196	10,353	10,511	10,668	10,825

# Supply v Demand



# But Wait... Doesn't Cal-Am Say we Need Desal?

## Cal-Am's Demand Forecast

	BASELINE (2017-2021) <sup>1</sup>	2025	2030	2035	2040	2045	2050 <sup>2</sup>
<b>Demographics</b>							
Service Area Population	91,717	93,577	95,437	97,297	99,157	101,017	102,877
Annual Population Growth Rate		0.41%	0.40%	0.39%	0.38%	0.38%	0.37%
Service Area Employment	64,307	67,020	69,732	72,445	75,157	77,870	80,583
<b>Residential Demand</b>							
Residential Demand Indoor/Outdoor	47	48	52.8	52.8	52.8	52.8	52.8
Residential Demand (AF)	4,857	5,031	5,644	5,754	5,864	5,974	6,084
<b>Non-Residential Demand</b>							
Non-Residential Demand (AF) <sup>3</sup>	4,686	4,834	5,019	5,204	5,389	5,574	5,759
Fire Service Demand (AF) <sup>3</sup>	Included as non-revenue water in the non-residential demand category						
<b>Other Future Demand</b>							
Pebble Beach Entitlements (AF)		0	65	130	195	260	325
Tourism Rebound (AF)		250	500	500	500	500	500
Legal Lots of Record (AF)		0	300	520	740	960	1,180
Residential (Single)		0	59	103	147	190	234
Residential (Multi)		0	35	60	86	111	137
Commercial		0	158	274	389	505	621
Residential Remodels		0	27	47	66	86	106
Commercial Remodels		0	21	36	51	67	82
RHNA Demands		0	370	745	745	745	745
Losses <sup>3</sup>	Included as non-revenue water in the non-residential demand category						
<b>Average Annual Demand (AFY, rounded to tenth)</b>		<b>10,110</b>	<b>11,900</b>	<b>12,850</b>	<b>13,430</b>	<b>14,010</b>	<b>14,590</b>

11,843

# But Wait... Doesn't Cal-Am Say we Need Desal?

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## Cal-Am's Supply Available

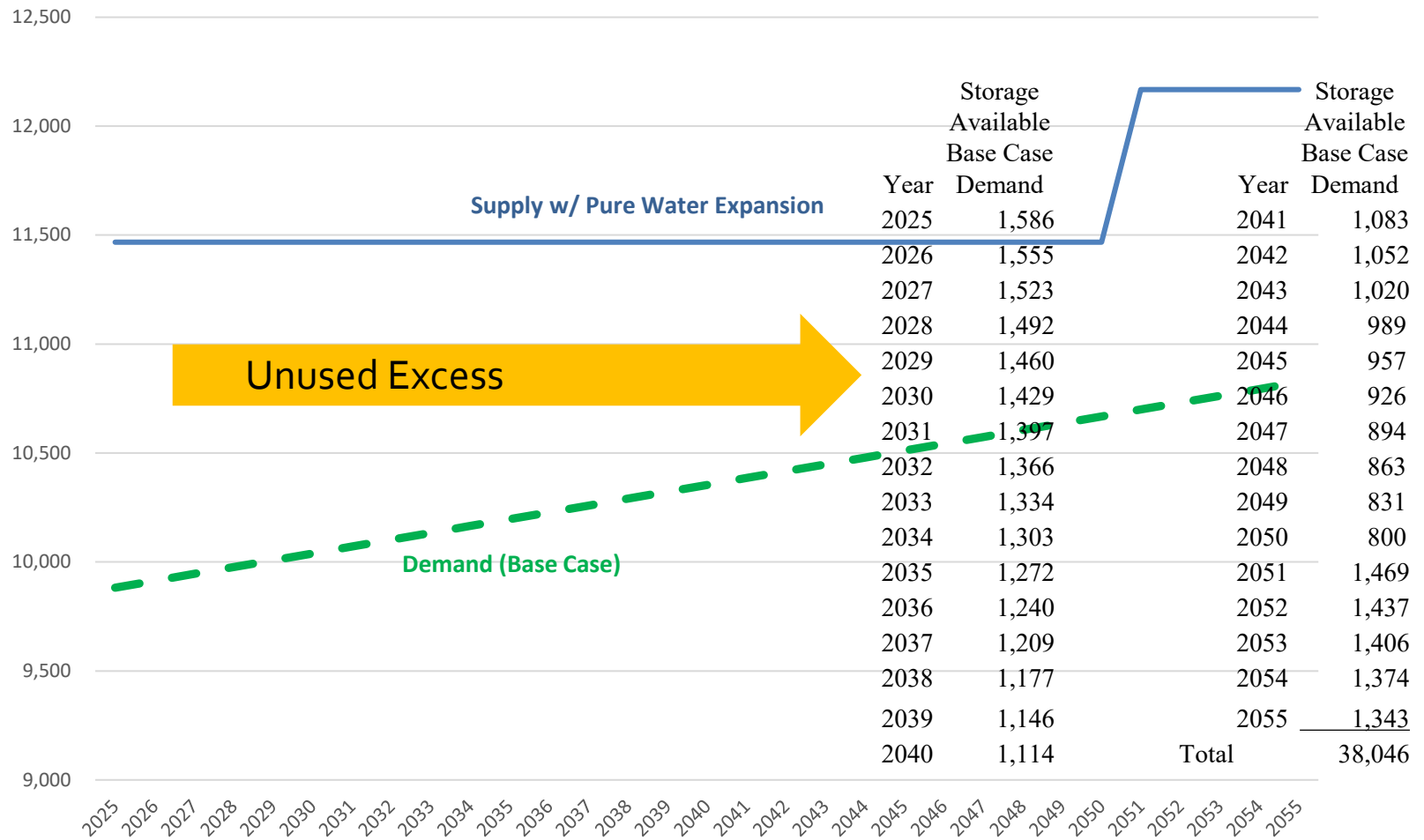
Supply Source	w/ PWM Expansion
Pure Water Monterey	3,500
PWM Expansion	1,910
Carmel River	3,376
Seaside Basin	774
Aquifer Storage & Recovery (ASR)	470
Sand City Desalination Plant	94
Table 13 Water Rights	0
Malpaso Water Rights	0
<b>Total Available Supply</b>	<b>10,124 AFY</b>
<b>At 90% Availability</b>	<b>9,112 AFY</b>

Demand Forecast = 14,590 AFY

A deficit of 5,478 AFY

Desal = 6,252 AFY

# What About Peak Days, Drought, and Contingency?



# What's the Difference?

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# Questions?

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MS PowerPoint distributed to the MPWMD Board of Directors, General Manager and District Counsel on 09/19/2022