



MEMORANDUM

TO: Rem Scherzinger
General Manager
Marina Coast Water District

DATE: November 10, 2022

SUBJECT: Response to Supply and Demand Assumptions in the California Coastal Commission Staff Report, Appeal No: A-3-MRA-19-0034

Introduction

This memorandum expands upon information and analysis contained in WaterDM's Fifth Supplemental Export Report, responds to supply and demand assumptions in the California Coastal Commission Staff Report, Appeal No: A-3-MRA-19-0034, and projects the volume of excess supply available with and without California American Water Company's Monterey Peninsula Water Supply Project desalination project.

Water Demand Forecast

The necessity for Cal-Am's desalination project hinges upon its updated water demand forecast.¹ The California Coastal Commission Staff Report recommending approval with conditions for Cal-Am's desalination project asserts that the California Public Utilities Commission (CPUC) will ultimately decide if the project is necessary and "whether additional water supplies will be needed beyond what the Pure Water Monterey Expansion will provide."²

But while appearing to leave the final decision on the necessity of the project to the CPUC, the Coastal Commission Staff nevertheless accepts that, "updated water demand and supply estimates and projections reasonably demonstrate that Cal-Am's (desalination) Project is likely to be needed at some point during the current 20-year planning period for future demand and supplies." This conclusion about Cal-Am's need for the desalination project in turn enables the Coastal Commission Staff to set aside numerous environmental and environmental justice concerns and recommend approval with conditions.

The problem is that Cal-Am's long-term demand forecast of 14,593 AF in 2050 is inflated and the need for Cal-Am's desalination project is overstated. In Cal-Am's updated forecast, per capita water use is assumed to increase by 14% by 2050 – exactly the opposite to what has been happening and what the State of California has legislated. These inflations and other problems with the forecast are noted in WaterDM's Fifth Supplemental Export Report.³

¹ Phase 2 Direct Testimony of Ian C. Crooks. Public Utilities Commission of the State of California. Application 21-11-024. July 25, 2022, (Table 5, p.24).

² California Coastal Commission. Staff Report. 11/4/2022. Application 9-20-0603 / Appeal A-3-MRA-19-0034 (California American Water Co.)

³ WaterDM. 2022. Fifth Supplemental Expert Report and Recommendations of Peter Mayer, P.E. Regarding Water Supply and Demand in the California American Water Company's Monterey Main System

Cal-Am has a poor track record with recent demand forecasts.⁴ Cal-Am's 2017 demand forecast provided to the CPUC as part of the application for the proposed desalination plant predicted water use in 2020 would be 12,350 AF. Cal-Am's water use in 2020 was in fact just 9,412 AF. Thus, Cal-Am's demand forecast was 31.2% higher than actual use, just three years after it was submitted. Errors of this magnitude are expensive for rate payers. Infrastructure projects sized based on an overstated demand forecast would almost certainly be sized larger than needed, imposing a costly and unnecessary burden on rate payers for years to come. Cal-Am's 2022 updated demand forecast repeats the same error of starting from an unrealistically high demand rather than the actual demand.

Independent forecasts of demand prepared by the Public Advocates Office of the CPUC (Cal Advocates)⁵ and WaterDM⁶ closely agree and show that a more realistic future forecast for Cal-Am in 2050 is between 11,073 AF (Cal Advocates) – 11,160 AF (WaterDM). WaterDM's forecast, which incorporates all anticipated future growth, is shown in Figure 1.⁷

Storage Build-Up

The Coastal Commission staff report neglects Cal-Am's ability to store and bank water in the Seaside Basin in the coming years. This buffer supply will enable Cal-Am to provide reliable supply to 2050 and beyond without the desalination project. Cal-Am is allocated 28,777 AF of total storage in the Seaside Groundwater Basin.⁸ Careful management of the Seaside Groundwater Basin and optimizing the storage opportunities it provides will help ensure a long-term reliable supply for the Cal-Am Monterey service area.

Cal-AM participates in an aquifer storage and recovery (ASR) project that allows for the capture of excess Carmel River winter flows through wells along the river. This river water is then transferred through existing conveyance facilities, including the new Monterey Pipeline and Pump Station, and stored in the Seaside Groundwater Basin for later extraction.⁹ There are two water rights totaling 5,326 AF that support the ASR system,¹⁰ but in reality Cal-Am is only be able to divert, inject, and store the maximum permitted volume in the wettest of years. Based on long-term historical precipitation and streamflow data, the ASR system is designed to allow an average of 1,920 AF per year to be recovered.

With the addition of the Pure Water Monterey Expansion, Cal-Am will have further opportunities to inject and store a portion of its Carmel River supply in the Seaside Groundwater Basin which will allow for recovery if additional supply is needed.

⁴ WaterDM 2022.

⁵ Public Advocates Office of the CPUC. 8/19/22. Report and Recommendations Application 21-11-024 Phase 2 San Francisco, California

⁶ WaterDM 2022.

⁷ WaterDM's continued efficiency forecast is based on Cal-Am's current stated service area population and on AMBAG's anticipated population growth through 2050 including population additions from the RHNA. With these additions, the total population of the Cal-Am service is forecast to be 117,948 in year 2050.

⁸ Seaside Basin Watermaster Annual Report – 2019, December 5, 2019

⁹ California-American Water Company. 2019. (U-210-W) Update to General Rate Case Application, A.19-07-004. Direct Testimony of Christopher Cook. (p.7)

¹⁰ MPWMD Report (p.3)

Excess Supply

As shown in Figure 1 and Table 1, starting in 2024 when the Pure Water Monterey Expansion supply comes online, there is excess supply volume in every year out to 2050. Some of this excess supply could be banked. The excess supply is shown as the volume above the dotted line (WaterDM's continued efficiency forecast) in Figure 1.

Without the desalination facility, Cal-Am will have a cumulative total excess supply of 27,874 AF by 2050 – enough to fill its storage allocation in the Seaside Basin. If Cal-Am's desalination project comes online in 2026¹¹, there will be more than 6,500 AF of excess supply per year and more than 144,000 AF of cumulative excess by 2050, far exceeding Cal-Am's storage capacity in the Seaside Basin.

Summary

The necessity for Cal-Am's desalination project and the Coastal Commission staff report conclusions hinge upon an inflated water demand forecast. Accepting Cal-Am's need for the desalination project in turn enables the Coastal Commission Staff to set aside numerous environmental and environmental justice concerns and recommend approval with conditions.

WaterDM's more realistic water demand forecast shows that with the addition of the Pure Water Monterey Expansion, Cal-Am will have excess available supplies which increases the potential for banking water in the Seaside Basin.

Without the desalination project, Cal-Am will have a cumulative total excess supply of 27,874 AF by 2050. With the desalination project, Cal-Am will have more than 144,000 AF of cumulative excess by 2050, far exceeding Cal-Am's storage capacity in the Seaside Basin.

¹¹ Assumes Phase 1 of Cal-Am desalination produces 5,376 AF/year and 695 AF/year are delivered to Castroville.

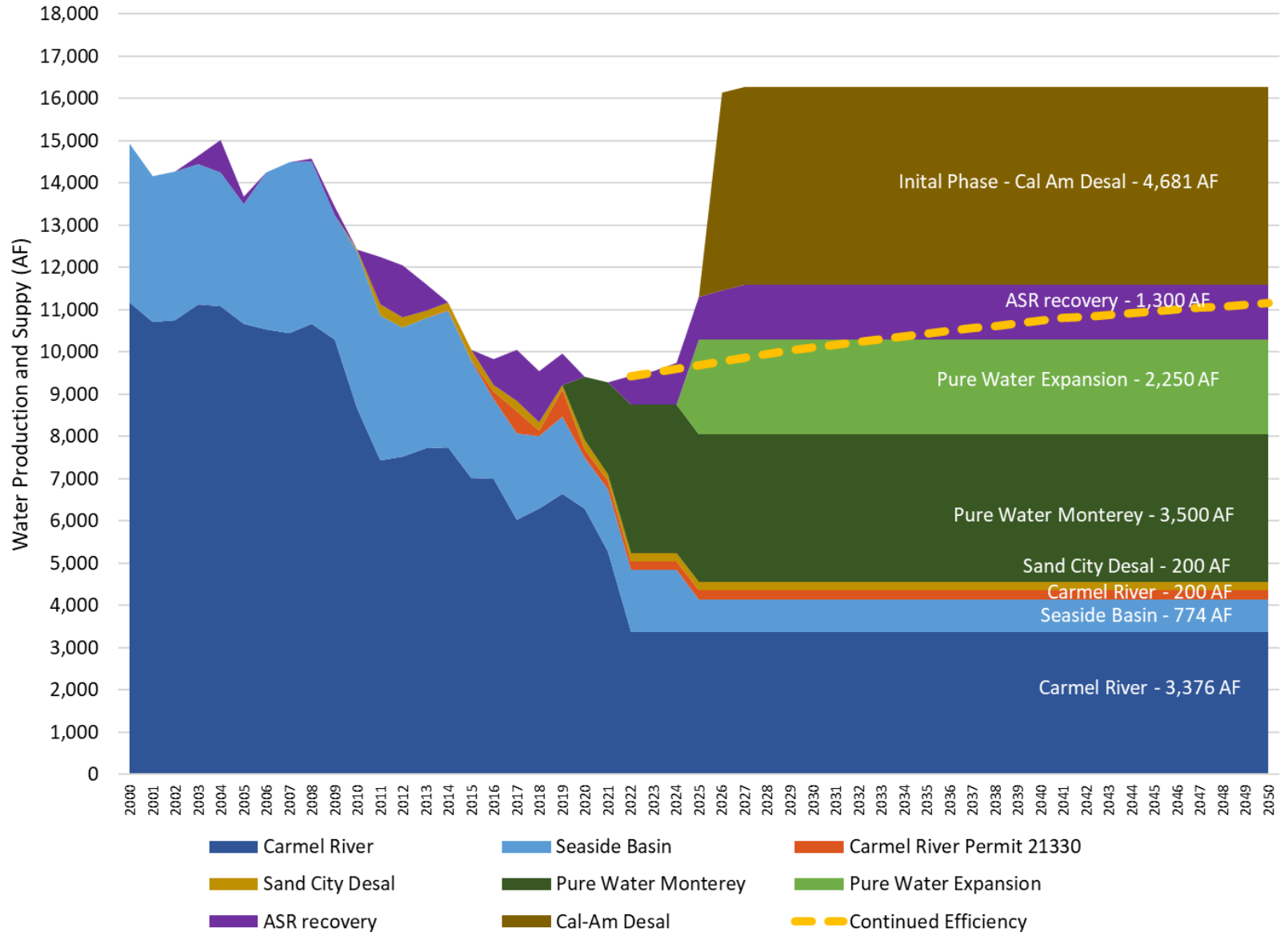


Figure 1: Cal-Am supply and demand 2000 – 2021, forecasted supply and demand 2022 - 2050

Table 1: Forecasted Cal-Am water supplies and demand 2022 - 2050

Year	Carmel River	Carmel River Permit 21330	Seaside Basin ¹²	ASR recovery	Sand City Desal	Pure Water Monterey	Pure Water Monterey Expansion	First Phase of Cal-Am Desal. ¹³	Total Cal-Am Supply	WaterDM Continued Efficiency Forecast	Excess supply without Desal.	Excess supply with Desal.	Cumulative Excess without Desal.	Cumulative Excess with Desal
2022	3,376	200	1,474	679	200	3,500	-	-	9,429	9,429	-	-	-	-
2023	3,376	200	1,474	800	200	3,500	-	-	9,550	9,517	33	33	33	33
2024	3,376	200	1,474	1,000	200	3,500	-	-	9,750	9,604	146	146	179	179
2025	3,376	200	774	1,300	200	3,500	2,250	-	11,600	9,691	1,909	1,909	2,088	2,088
2026	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	9,777	1,823	6,504	3,910	8,591
2027	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	9,863	1,737	6,418	5,647	15,009
2028	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	9,949	1,651	6,332	7,298	21,341
2029	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,034	1,566	6,247	8,864	27,588
2030	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,118	1,482	6,163	10,346	33,751
2031	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,182	1,418	6,099	11,764	39,850
2032	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,246	1,354	6,035	13,118	45,885
2033	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,309	1,291	5,972	14,409	51,857
2034	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,372	1,228	5,909	15,637	57,766
2035	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,435	1,165	5,846	16,802	63,612
2036	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,497	1,103	5,784	17,905	69,396
2037	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,559	1,041	5,722	18,946	75,118
2038	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,620	980	5,661	19,925	80,778
2039	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,681	919	5,600	20,844	86,378
2040	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,742	858	5,539	21,702	91,917
2041	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,803	797	5,478	22,499	97,395
2042	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,843	757	5,438	23,256	102,833
2043	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,884	716	5,397	23,972	108,230
2044	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,924	676	5,357	24,648	113,587
2045	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	10,964	636	5,317	25,284	118,904
2046	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	11,004	596	5,277	25,880	124,181
2047	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	11,043	557	5,238	26,437	129,419
2048	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	11,082	518	5,199	26,955	134,618
2049	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	11,121	479	5,160	27,434	139,778
2050	3,376	200	774	1,300	200	3,500	2,250	4,681	16,281	11,160	440	5,121	27,874	144,899

¹² Assumes 25-year payback of 700 AF per year to the Seaside Basin begins when the Pure Water Monterey Expansion comes online in 2025.

¹³ Assumes Phase 1 of Cal-Am desalination produces 5,376 AF/year and 695 AF/year are delivered to Castroville.