MARINA COAST WATER DISTRICT

PUBLIC REVIEW DRAFT

2020 URBAN WATER MANAGEMENT PLAN

APPENDICES

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LIST OF APPENDICES:

Appendix A: Resolution Adopting the 2020 Urban Water Management Plan

Appendix B: References

Akel Engineering Group:

Marina Coast Water District, Water Master Plan, May 29, 2020

Marina Coast Water District, Recycled Water Master Plan, May 29, 2020

Association of Monterey Bay Area Governments, 2022 Regional Growth Forecast, November 18, 2020

Brown & Caldwell, State of the Salinas River Groundwater Basin, January 2015.

Byron Buck & Associates, Marina Coast Water District 2005 Urban Water Management Plan, December 2005.

California American Water Company:

Coastal Water Project, Final Environmental Impact Report, prepared for the California Public Utilities Commission, October 2009

Monterey Peninsula Water Supply Project, Final Environmental Impact Report, prepared for the California Public utilities Commission, March 2018

California Department of Finance website, www.dof.ca.gov, population estimate tables:

Report E-1 Population Estimates for Cities, Counties and the State, January 1, 2019 and 2020

Report E-4 Population Estimates for Cities, Counties and the State, 2011-2020, with 2010 Benchmark

Report P-2A, Total Estimated and Projected Population for California and Counties: July 1, 2010 to 2060, published March 2021

California Department of Water Resources:

20x2020 Water Conservation Plan, February 2010.

California Irrigation Management Information System (CIMIS) website

2020 Urban Water Management Plan, Guidebook for Urban Water Suppliers, March 2021.

Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, October 1, 2010.

Model Water Efficient Landscape Ordinance, September 10, 2009

Water Audit Manual, February 2016

California State University, Monterey Bay

Master Plan, December 2007

Draft Comprehensive Master Plan, June 2017

California Urban Water Conservation Council.

BMP Costs and Savings Study. 2003.

Memorandum of Understanding Regarding Urban Water Conservation in California, As Amended June 9, 2010

City of Del Rey Oaks:

Redevelopment Plan, Former Fort Ord Redevelopment Area, 2001

Housing Element, December 2019

City of Marina:

2000 General Plan, Adopted October 21, 2000, Amended through August 2010.

Midterm Review of the 2015-2023 Housing Element, December 2019

City of Seaside:

Midterm Review of the 2015-2023 Housing Element, October 2019

Redevelopment Agency of the City of Seaside, Implementation Plan, 2007 – 2012, Seaside-Fort Ord Redevelopment Project Area, January 17, 2008

County of Monterey:

2010 Monterey County General Plan, October 26, 2010

2015-2023 Housing Element, adopted November 2015

Monterey County Multi-Jurisdictional Hazard Mitigation Plan, June 2015

Denise Duffy & Associates in association with RBF Consulting. Draft Environmental Impact Report Regional Urban Water Augmentation Project. June 2004.

Denise Duffy & Associates in association with RBF Consulting. Final Environmental Impact Report Regional Urban Water Augmentation Project. September, 2004, with amendments in 2006, 2007 and 2016.

Denise Duff & Associates, et. al. Final Draft Groundwater Inventory and Status Report. March 18, 2004.

EKI Environmental and Water, Inc, Water Augmentation Alternatives Study, Former Fort Ord Area, Monterey County, CA, June 2020.

Engeo Incorporated, Assessment of Erosion Rates, MCWD Regional Water augmentation Desalination Plant, October 30, 2006

Fort Ord Reuse Authority:

Capital Improvement Program, FY 2019/20 through FY 2028/2029, May 2019, including annual development projection update for 2019/20

Fort Ord Reuse Plan, 1996.

Reuse Plan EIR, 1997.

Assignment of Easements on the Former Fort Ord and Ord Military Community, County of Monterey, and Quitclaim Deed for Water and Wastewater Systems, between Fort Ord Reuse Authority (Grantor) and Marina Coast Water District (Grantee), October 24, 2001

Geoscience Support Services, Inc

Monterey Peninsula Water Supply Project, Groundwater Modeling and Analysis, prepared for California American Water, April 2015

Monterey Peninsula Water Supply Project, Hydrogeologic Investigation, Technical Memorandum (TM-1) Summary of Results - Exploratory Boreholes, prepared for California American Water, July 2014

Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monitoring Reports, prepared for California American Water, May 2015 thru May 2016

Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monthly Monitoring Reports, prepared for California American Water, May 2015 thru May 2016

Technical Memorandum - Monterey Peninsula Water Supply Project, Baseline Water And Total Dissolved Solids Levels Test Slant Well Area, Submitted To The Hydrogeologic Working Group, prepared for California American Water, April 2015

GRC Redevelopment Consultants, Implementation Plan 2007-2012 for the Seaside – Fort Ord Redevelopment Project Area, prepared for the Redevelopment Agency of the City of Seaside, January 17, 2008.

Hopkins Groundwater Consultants, Inc., Technical Memorandum: North Marina Area Groundwater Data and Conditions, prepared for Marina Coast Water District, May 2016

Keyser Marston Associates, Inc., Implementation Plan for the Fort Ord Redevelopment Project Area, prepared for the Redevelopment Agency of Monterey County, March 2007

LAFCO of Monterey County, 2019 Municipal Services Review and Sphere of Influence Study: Marina Coast Water District, April 2019

Mactec Engineering and Consulting Inc. Former Fort Ord Environmental Cleanup. Fortordcleanup.com. 2005.

Marina Coast Water District:

2020 Consumer Confidence Report for Central Marina and Ord Community, April 2021

Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2020, approved December 14, 2020

Water Supply Assessment and Written Verification of Supply for the Marina Heights Specific Plan, prepared with Byron Buck & Associates, December 15, 2003.

Water Supply Assessment and Written Verification of Supply for the Proposed East Garrison Specific Plan Development, prepared with Byron Buck & Associates, June 3, 2004.

Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project, prepared with Byron Buck & Associates, January 26, 2005.

Water Supply Assessment and Written Verification of Supply for the Proposed Marina Station Project, prepared with Byron Buck & Associates, January 4, 2006.

Water Supply Assessment and Written Verification of Supply for the Proposed Cypress Knolls Residential Project, prepared with Byron Buck & Associates, March 22, 2006.

Water Supply Assessment and Written Verification of Supply for the Proposed Resort at Del Rey Oaks, prepared with Byron Buck & Associates, December 2007.

Water Supply Assessment and Written Verification of Supply for the City of Seaside Amended Main Gate Specific Plan, prepared with Schaaf & Wheeler, December 2018.

Water Supply Assessment and Written Verification of Supply for the City of Seaside Campus Town Specific Plan, prepared with Schaaf & Wheeler, June 2018.

Water Supply Assessment for the City of Marina Downtown Vitalization Specific Plan, prepared with Schaaf & Wheeler, April 2020.

Water Supply Assessment and Written Verification of Supply for the Marina Municipal Airport Business and Industrial Park/UC MBEST Center Specific Plan, prepared with Schaaf & Wheeler, April 2020.

Well 34 Basis of Design Report, Martin B. Feeney, Consulting Hydrogeologist, September 21, 2009

Quarterly Water Consumption Report, period ending: December 31, 2020.

Monterey County Water Resources Agency:

Agreement between the United States of America and the Monterey County Water Resources Agency concerning Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency, Agreement No. A-06404, September 21, 1993.

Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands (1996). Document recorded in the Office of the Monterey County Recorder on August 7, 1996, at Reel 3404 Page 749.

Environmental Impact Report/Environmental Impact Statement for the Salinas Valley Water Project. June 2001.

Final Report, Hydrogeologic Investigation of the Salinas Valley Basin in the Vicinity of Fort Ord and Marina, Salinas Valley, California, prepared by Harding ESE, April 2001

Groundwater Extraction Summary Reports for years 2010 through 2019.

Monterey County Groundwater Management Plan, May 2006

Salinas Valley Integrated Regional Water Management Functionally Equivalent Plan, prepared by RMC Water and Environment, May 2006

Salinas Valley Water Project Engineer's Report, prepared by RMC Water and Environment, January 2003

Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, October 2017

Well Locations Report, December 2020

Marina Coast Water District Groundwater Sustainability Agency

Draft Salinas Valley Groundwater Basin, Monterey Subbasin Groundwater Sustainability Plan, prepared jointly with the Salinas Valley Groundwater Sustainability Agency, January 2021

Monterey One Water (formerly Monterey Regional Water Pollution Control Agency)

Consolidated Final Environmental Impact Report for the Pure Water Monterey Groundwater Replenishment Project, prepared by Denise Duffy & Associates, adopted October 2015

Pure Water Delivery and Supply Agreement between MRWPCA and MCWD, April 2016

Monterey Peninsula Water Management District, Monterey Peninsula, Carmel Bay, and South Monterey Bay Integrated Regional Water Management Plan Update, September 2019

RBF Consulting. Water Conservation Feasibility Study Draft. September 2003.

RBF Consulting. Regional Urban Recycled Water Distribution Project. 2003.

RMC Water and Environment, MCWD Recycled Water Project Basis of Design Report, 2006

Regional Water Management Group, Integrated Regional Water Management Plan for the Greater Monterey County Area, updated September 2018

Salinas Valley Groundwater Sustainability Agency

Salinas Valley Groundwater Basin, 180/400-Foot Aquifer Subbasin Groundwater Sustainability Plan, prepared by Montgomery & Associates, January 2020

Schaaf & Wheeler, Consulting Civil Engineers

Marina Coast Water District 2010 Urban Water Management Plan, June 2011.

Marina Coast Water District 2015 Urban Water Management Plan, June 2016.

WRIME. Deep Aquifer Investigative Study. May, 2003.

United States Census Bureau, American FactFinder website, www.census.gov

2010 Decennial Census Redistricting Data, Table GCT-PL2: California Population and Housing Occupancy Status - County - Census Tract

2020 Census - Census Tract Reference Map: Monterey County, CA

Appendix C: Land Use Forecast and Water Demand Projections by Jurisdiction

The following tables present the water demand projects for the Marina Coast Water District, based upon the development and redevelopment projections provided by the various jurisdictions. Water demands are estimated as a function of the size (acreage/square footage) or number of units of a development, depending on the type of land use, and a water demand unit factor that corresponds to that use. For each type of land use, Demand = Size x Unit Factor.

- Existing demands are from estimated from MCWD's 2020 water usage records for each jurisdictional area.
- For developments that have approved Specific Plans, the water demand factors and total water demand estimates have been taken from the respective Water Supply Assessments (WSAs) for these Specific Plan areas.
- For in-fill development under approved General Plans or Master Plans (e.g., the City of Marina, CSUMB), MCWD's standard water demand factors have been used with the in-fill land use projections provided by the jurisdiction.
- For the Ord Community, the initial development forecast was based upon the Fort Ord Reuse Authority's latest annual growth forecast, which is developed for CIP planning. The projected developments, generally by square footage or units, are then multiplied by the appropriate unit demand factors.
- The in-fill rate for Central Marina reflects the updated projection by the City Planning Department included in the WSA for the Marina Downtown Vitalization Specific Plan.

Based upon the housing projections in the water demand tables, population projections were then developed. In-fill development was assumed to have the same number of persons per dwelling unit as the existing area. For new development, if the specific plan, the water supply assessment or the associated Environmental Impact Report projected a number of persons per housing unit, that factor was used. If a persons-per-dwelling-unit estimate did not exist, the new development was assumed to have the same occupancy as the city average.

Tables:

Table C1: 2020 Water Demand by Jurisdiction (AFY)

	Jurisdiction	2020	2025	2030	2035	2040	Notes	Allocation
Ord	U.S. Army	409	461	471	471	471		1,562
	CSUMB	318	421	616	821	977	1	1,035
	Del Rey Oaks	0	31	224	238	238		243
	City of Monterey	0	0	130	130	130		65
	County of Monterey	227	436	436	522	522		720
	UCMBEST	1	116	335	377	408		230
	City of Seaside	339	839	1,032	1,435	1,698		1,012
	State Parks and Rec.	0	7	9	9	9		45
	Marina Ord Comm.	446	1,125	1,638	1,757	1,809		1,340
	Assumed Line Loss	190	348	348	348	348		348
Marina	Armstrong Ranch	0	550	680	680	680		920
	Cemex	0	0	0	0	0	2	500
	Marina Central	1,438	1,656	1,874	2,081	2,284		3,020

Subtotal - Ord	1,929	3,784	5,239	6,108	6,610	6,600
Subtotal - Marina	1,438	2,207	2,553	2,761	2,964	4,440
Total	3,367	5,991	7,792	8,869	9,574	11,040

1. CSUMB Campus closed for most of 2020 due to COVID-19 restrictions, so the 2018 campus usage is assumed as the baseline demand.
2. The CEMEX property is outside the Marina Urban Growth Boundary, which was extended through the year 2040.

Table C2: 2015 UWMP Water Demand by Jurisdiction (AFY)

	Jurisdiction	2015	2020	2025	2030	2035		Allocation
Ord	U.S. Army	633	663	825	825	825		1,577
	CSUMB	404	442	632	755	779		1,035
	Del Rey Oaks	0	186	551	551	551		243
	City of Monterey	0	0	130	130	130		65
	County of Monterey	52	377	539	539	539		720
	UCMBEST	3	94	299	515	515		230
	City of Seaside	657	992	1,183	1,497	1,960	2,3	1,012
	State Parks and Rec.	0	12	18	20	25		45
	Marina Ord Comm.	285	901	1,572	1,702	1,704	4	1,325
	Assumed Line Loss	348	348	348	348	348		348
Marina	Armstrong Ranch	0	0	680	680	680		920
	Cemex	0	0	0	0	500		500
	Marina Central	1,419	1,600	1,896	2,196	2,488	5	3,020

Subtotal - Ord	2,382	4,016	6,098	6,882	7,376	6,600
Subtotal - Marina	1,419	1,600	2,576	2,876	3,668	4,440
Total	3,801	5,616	8,674	9,758	11,044	11,040

2. Includes Seaside Resort Golf Course use in 2015 (temporary use).
3. Values revised to remove Monterey Downs project per the Campus Town WSA (2018).
4. Revised allocation to reflect groundwater only. Supply from pilot desal plant removed.
5. Projection revised per the Marina Downtown Vitalization Specific Plan WSA.

Marina Ord	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
New Residential																							
Sea Haven																							
Townhome	MAR	Dwelling Units	12	13	13	13	13	13	13	12													
Cluster Market/Bridge	MAR	Dwelling Units	47	19	19	19	19	19	19	18													
Market A	MAR	Dwelling Units	39	29	29	29	29	29	29	33													
Market B	MAR	Dwelling Units	-	34	34	34	34	34	34	33													
Estates	MAR	Dwelling Units	-	13	12	12	12	12	12	12	-												
Landscaping (Turf)	MAR	Acres	0.7	0.3	0.3	0.3	0.3	0.3	0.3	0.3													
Landscaping (Non-Turf)	MAR	Acres	0.5	0.2	0.2	0.2	0.1	0.1	0.1	0.1													
Cypress Knolls Specific Plan Area																							
SF Home / Townhome	MAR	Dwelling Units								255	200		141										
Apartments	MAR	Dwelling Units								85			31										
Assisted Living	MAR	Dwelling Units											60										
Open Space	MAR	Acres								28.57													
Parklands	MAR	Acres								2.17													
Right of Way	MAR	Acres								27.79			5.51										
Dunes on Monterey Bay																							
Alley (small lot)	MAR	Dwelling Units	44	54	59	37																	
Carriage	MAR	Dwelling Units		18	30	47																	
Standard	MAR	Dwelling Units		44	6																		
Standard (small lot)	MAR	Dwelling Units		48	23																		
Duets	MAR	Dwelling Units		62	88	40	60	4															
Townhome (live-work)	MAR	Dwelling Units		50	50	39																	
Townhome (mixed use)	MAR	Dwelling Units		8	8	8																	
Apartments (completed)	MAR	Dwelling Units																					
Landscaping (MCP)	MAR	Acres		5.00	5.00	4.20																	
Landscaping (other)	MAR	Acres		4.00	2.10																		
VTC Supportive Housing	MAR	Dwelling Units		71																			
Non Residential																							
SVMHS Development	MAR	Square Feet								10,000	15,000	15,000	16,000										
TAMC TOD (office/public facilities)	MAR	Square Feet															20,000	20,000					
Airport Specific Plan - Commercial/Mixed Use	MAR	Square Feet		2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2,290	2290
Airport Specific Plan - Business Aviation	MAR	Square Feet		12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12,030	12030
Airport Specific Plan - Business Park	MAR	Square Feet		28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28,640	28640
Airport Specific Plan - Landscape	MAR	Acres		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Cypress Knolls Community Center	MAR	Square Feet																		16,525			
Cypress Knolls Support Services	MAR	Square Feet																		6,300			
TAMC TOD (retail)	MAR	Square Feet															37,500	37,500					
Marina Airport Hotel/Golf	MAR	Rooms																					
Marina High School Theater	MAR	Square Feet								16,000													
Imjin Office Park (completed)	MAR	Square Feet																					
Monterey Peninsula College	MAR	Square Feet																					
UV - Planning Area A	MAR	Square Feet			20,000	16,000																	
UV - Planning Area J	MAR	Square Feet						3,000	55,000	8,000	17,000												
UV - Planning Area B1	MAR	Square Feet		25,000					114,000	15,000	10,000	35,000	10,000										
UV - Planning Area V	MAR	Square Feet								12,000	5,000	2,000	5,500										
UV - Planning Area OP (1-5)	MAR	Square Feet		150,000							300,000	253,000	82,000	170,000	95,000								
UV - Planning Area T	MAR	Rooms		108																			
UV - Planning Area Z	MAR	Square Feet											8,500	5,000	5,000	1,500							

UV = University Villages, now Dunes on Monterey Bay

Marina Coast Water District, 2020 Urban Water Management Plan
Table C3: Water Demand Projection Details

Land Use Type	Land Use	Total	Units	Multiplier	Notes	Jurisdiction	Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
Sea Haven														
Townhome	Residential (8-15 units / acre)	102	Dwelling Units	0.25			19.25	6.25	0.00	0.00	19.25	25.50	25.50	25.50
Cluster Market/Bridge	Residential (8-15 units / acre)	179	Dwelling Units	0.25			35.50	9.25	0.00	0.00	35.50	44.75	44.75	44.75
Market A	SF Residential (5-8 units / acre)	246	Dwelling Units	0.33			60.72	20.46	0.00	0.00	60.72	81.18	81.18	81.18
Market B	SF Residential (5-8 units / acre)	237	Dwelling Units	0.33			56.10	22.11	0.00	0.00	56.10	78.21	78.21	78.21
Estates	SF Residential (< 5 units / acre)	85	Dwelling Units	0.5			30.50	12.00	0.00	0.00	30.50	42.50	42.50	42.50
Landscaping (Turf)	Landscape (turf)	2.8	Acres	2.5			5.50	1.50	0.00	0.00	5.50	7.00	7.00	7.00
Landscaping (Non-Turf)	Landscape (non-turf)	1.5	Acres	1.5	1		1.95	0.30	0.00	0.00	1.95	2.25	2.25	2.25
						Marina Ord Comm.	209.52	71.87	0.00	0.00	209.52	281.39	281.39	281.39
Cypress Knolls														
SF Home / Townhome	SF Residential (5-8 units / acre)	596	Dwelling Units	0.1319	1		0.00	78.62	0.00	0.00	0.00	78.62	78.62	78.62
Apartments	Multi family (> 15 units / acre)	116	Dwelling Units	0.1507	1		0.00	17.48	0.00	0.00	0.00	17.48	17.48	17.48
Assisted Living	Multi family (> 15 units / acre)	60	Dwelling Units	0.1672	1		0.00	10.03	0.00	0.00	0.00	10.03	10.03	10.03
Open Space	Landscape (non-turf)	28.57	Acres	0.5849	1		0.00	16.71	0.00	0.00	0.00	16.71	16.71	16.71
Parklands	Landscape (turf)	2.17	Acres	1.1244	1		0.00	2.44	0.00	0.00	0.00	2.44	2.44	2.44
Right of Way	Landscape (non-turf)	33.3	Acres	0.4586	1		0.00	15.27	0.00	0.00	0.00	15.27	15.27	15.27
						Marina Ord Comm.	0.00	140.55	0.00	0.00	0.00	140.55	140.55	140.55
Dunes on Monterey Bay														
Alley (small lot)	Residential (8-15 units / acre)	194	Dwelling Units	0.20572165	1		39.91	0.00	0.00	0.00	39.91	39.91	39.91	39.91
Carriage	Residential (8-15 units / acre)	95	Dwelling Units	0.34094737	1		32.39	0.00	0.00	0.00	32.39	32.39	32.39	32.39
Standard	SF Residential (5-8 units / acre)	50	Dwelling Units	0.687	1		34.35	0.00	0.00	0.00	34.35	34.35	34.35	34.35
Standard (small lot)	Residential (8-15 units / acre)	71	Dwelling Units	0.44056338	1		31.28	0.00	0.00	0.00	31.28	31.28	31.28	31.28
Duets	SF Residential (5-8 units / acre)	254	Dwelling Units	0.17173228	1		43.62	0.00	0.00	0.00	43.62	43.62	43.62	43.62
Townhome (live-work)	Residential (8-15 units / acre)	139	Dwelling Units	0.12791367	1		17.78	0.00	0.00	0.00	17.78	17.78	17.78	17.78
Townhome (mixed use)	Residential (8-15 units / acre)	24	Dwelling Units	0.16375	1		3.93	0.00	0.00	0.00	3.93	3.93	3.93	3.93
Apartments (completed)	Multi family (> 15 units / acre)		Dwelling Units	0.12185185	1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping (MCP)	Landscape (non-turf)	14.2	Acres	1.66197183	1		23.60	0.00	0.00	0.00	23.60	23.60	23.60	23.60
Landscaping (other)	Landscape (non-turf)	6.1	Acres	1.47540984	1		9.00	0.00	0.00	0.00	9.00	9.00	9.00	9.00
						Marina Ord Comm.	235.86	0.00	0.00	0.00	235.86	235.86	235.86	235.86
VTC Supportive Housing	Residential (8-15 units / acre)	71	Dwelling Units	0.25		Marina Ord Comm.	17.75	0.00	0.00	0.00	17.75	17.75	17.75	17.75
Non Residential														
SVMHS Development	Office / R&D	56000	Square Feet	0.000135		Marina Ord Comm.	0.00	7.56	0.00	0.00	0.00	7.56	7.56	7.56
TAMC TOD (office/public facilities)	Office / R&D	40000	Square Feet	0.000135		Marina Ord Comm.	0.00	0.00	5.40	0.00	0.00	0.00	5.40	5.40
Airport Specific Plan - Commercial/Mixed Use	Other Commercial	45800	Square Feet	0.0003		Marina Ord Comm.	3.44	3.44	3.44	3.44	3.44	6.87	10.31	13.74
Airport Specific Plan - Business Aviation	Light Industrial	240600	Square Feet	0.00015		Marina Ord Comm.	9.02	9.02	9.02	9.02	9.02	18.05	27.07	36.09
Airport Specific Plan - Business Park	Office / R&D	572800	Square Feet	0.000135		Marina Ord Comm.	19.33	19.33	19.33	19.33	19.33	38.66	58.00	77.33
Airport Specific Plan - Landscape	Landscape (non-turf)	8.6	Acres	2.1		Marina Ord Comm.	4.52	4.52	4.52	4.52	4.52	9.03	13.55	18.06
Cypress Knolls Community Center	Various	16525	Square Feet	0.001	1	Marina Ord Comm.	0.00	0.00	0.00	9.22	0.00	0.00	0.00	9.22
Cypress Knolls Support Services	Office / R&D	6300	Square Feet	0.001	1	Marina Ord Comm.	0.00	0.00	0.00	6.31	0.00	0.00	0.00	6.31
TAMC TOD	Retail	75000	Square Feet	0.00021		Marina Ord Comm.	0.00	0.00	15.75	0.00	0.00	0.00	15.75	15.75
Marina Airport Hotel/Golf	Hotel, Motel and Timeshares		Rooms	0.11	1	Marina Ord Comm.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marina High School Theater	Schools (K-12)	16000	Square Feet	0.0003		Marina Ord Comm.	0.00	4.80	0.00	0.00	0.00	4.80	4.80	4.80
Imjin Office Park (completed)	Office / R&D		Square Feet	0.000135		Marina Ord Comm.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monterey Peninsula College	Higher Education		Square Feet	0.00002		Marina Ord Comm.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UV - Planning Area A	Various	36000	Square Feet	0.00298361	1	Marina Ord Comm.	107.41	0.00	0.00	0.00	107.41	107.41	107.41	107.41
UV - Planning Area J	Various	83000	Square Feet	0.00040458	1	Marina Ord Comm.	1.21	32.37	0.00	0.00	1.21	33.58	33.58	33.58
UV - Planning Area B1	Various	209000	Square Feet	0.00037813	1	Marina Ord Comm.	9.45	69.58	0.00	0.00	9.45	79.03	79.03	79.03
UV - Planning Area V	Various	24500	Square Feet	0.00067102	1	Marina Ord Comm.	0.00	16.44	0.00	0.00	0.00	16.44	16.44	16.44
UV - Planning Area OP (1-5)	Various	1050000	Square Feet	0.00020227	1	Marina Ord Comm.	30.34	128.44	53.60	0.00	30.34	158.78	212.38	212.38
UV - Planning Area T	Various	108	Rooms	0.28703704	1	Marina Ord Comm.	31.00	0.00	0.00	0.00	31.00	31.00	31.00	31.00
UV - Planning Area Z	Various	20000	Square Feet	0.000683	1	Marina Ord Comm.	0.00	5.81	7.85	0.00	0.00	5.81	13.66	13.66

Armstrong Ranch	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
New Residential																							
Marina Station																							
Single Family Homes (15,000)	MAR	Dwelling Units				23	87	37															
Single Family Homes (6,500)	MAR	Dwelling Units				100	250	220	99														
Apartments	MAR	Dwelling Units				100	250	220	78														
Irrigated parkland	MAR	Acres				6.0	6.5																
Open Space (turf)	MAR	Acres				4.3																	
Non Residential																							
Marina Station																							
Mixed Use Retail	MAR	Square Feet					15,000	30,000	15,000														
Office Uses	MAR	Square Feet					40,000	60,000	43,808														
Light Industrial	MAR	Square Feet						300,000	351,624														
Landscape (15% of indoor consumption)	MAR	Square Feet																					
System Loss (5%)	MAR	Square Feet																					

CEMEX	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
Non Residential																							
CEMEX (restricted through the year 2040)	MAR	Square Feet																					

Marina Central	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
New Residential																							
In-Fill Development MF	MAR	Dwelling Units						50					50					50					39
In-Fill Development SF	MAR	Dwelling Units		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Downtown Specific Plan (over 30 years)	MAR	Dwelling Units		97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97
Non Residential																							
Hotel / Motel	MAR	Rooms						90					90										
RV Park	MAR	Spaces	24																				
Other Commercial	MAR	Square Feet						34650					34650					34650					34571
Institutional	MAR	Square Feet																					
Schools	MAR	Square Feet																					
Landscape (non-turf)	MAR	Acres						1					1					1					0.53
Downtown Specific Plan - Office	MAR	Square Feet		17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020	17020
Downtown Specific Plan - Retail / Comemrcial	MAR	Square Feet		29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160	29160

Monterey County	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
New Residential																							
East Garrison I																							
Market Rate	MCO	Dwelling Units	143	125	177	79	77																
Affordable	MCO	Dwelling Units																					
Non Residential																							
Monterey County Office																							
Intergarrison Rd Office Park	MCO	Square Feet												127,200	127,200	127,200	127,200	127,000					
East Garrison I Office Development	MCO	Square Feet		24,000	24,000	20,000																	
Monterey County Light Ind.																							
Monterey County Retail																							
East Garrison I Retail	MCO	Square Feet		20,000	14,000																		
Monterey County Landscaping																							
East Garrison Landscaping	MCO	Acres			5																		

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
Marina Station														
Single Family Homes (15,000)	SF Residential (< 5 units / acre)	147	Dwelling Units	0.5			73.50	0.00	0.00	0.00	73.50	73.50	73.50	73.50
Single Family Homes (6,500)	SF Residential (5-8 units / acre)	669	Dwelling Units	0.33			188.10	32.67	0.00	0.00	188.10	220.77	220.77	220.77
Apartments	Multi family (> 15 units / acre)	648	Dwelling Units	0.25			142.50	19.50	0.00	0.00	142.50	162.00	162.00	162.00
Irrigated parkland	Landscape (turf)	12.5	Acres	2.5			31.25	0.00	0.00	0.00	31.25	31.25	31.25	31.25
Open Space (turf)	Landscape (turf)	4.3	Acres	2.5			10.75	0.00	0.00	0.00	10.75	10.75	10.75	10.75
						Armstrong Ranch	446.10	52.17	0.00	0.00	446.10	498.27	498.27	498.27
Non Residential														
Marina Station														
Mixed Use Retail	Retail	60000	Square Feet	0.00021		Armstrong Ranch	9.45	3.15	0.00	0.00	9.45	12.60	12.60	12.60
Office Uses	Office / R&D	143808	Square Feet	0.000135		Armstrong Ranch	13.50	5.91	0.00	0.00	13.50	19.41	19.41	19.41
Light Industrial	Light Industrial	651624	Square Feet	0.00015		Armstrong Ranch	45.00	52.74	0.00	0.00	45.00	97.74	97.74	97.74
Landscape (15% of indoor consumption)	Landscape (non-turf)		Square Feet	2.1		Armstrong Ranch	10.19	9.27	0.00	0.00	10.19	19.46	19.46	19.46
System Loss (5%)			Square Feet		1	Armstrong Ranch	26.21	6.16	0.00	0.00	26.21	32.37	32.37	32.37

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
Non Residential														
RMC Lonestar (added to FORA table)	Light Industrial		Square Feet	0.00015		CEMEX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
In-Fill Development MF	Multi family (> 15 units / acre)	189	Dwelling Units	0.25		Marina Central	12.50	12.50	12.50	9.75	12.50	25.00	37.50	47.25
In-Fill Development SF	Residential (8-15 units / acre)	200	Dwelling Units	0.25		Marina Central	12.50	12.50	12.50	12.50	12.50	25.00	37.50	50.00
Downtown Specific Plan	Multi family (> 15 units / acre)	1940	Dwelling Units	0.25	2	Marina Central	121.25	121.25	121.25	121.25	121.25	242.50	363.75	485.00
Non Residential														
Hotel / Motel	Hotel, Motel and Timeshares	180	Rooms	0.11		Marina Central	9.90	9.90	0.00	0.00	9.90	19.80	19.80	19.80
RV Park	Other	24	Spaces	0.065		Marina Central	1.56	0.00	0.00	0.00	1.56	1.56	1.56	1.56
Other Commercial	Other Commercial	138521	Square Feet	0.0003		Marina Central	10.40	10.40	10.40	10.37	10.40	20.79	31.19	41.56
Institutional	Institutional		Square Feet	0.0003		Marina Central	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Schools	Schools (K-12)		Square Feet	0.0003		Marina Central	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape (turf)	Landscape (non-turf)	3.53	Acres	2.1		Marina Central	2.10	2.10	2.10	1.11	2.10	4.20	6.30	7.41
Downtown Specific Plan - Office	Office / R&D	340400	Square Feet	0.000135	2	Marina Central	11.49	11.49	11.49	11.49	11.49	22.98	34.47	45.95
Downtown Specific Plan - Retail / Comemrcial	Other Commercial	583200	Square Feet	0.0002538	2	Marina Central	37.00	37.00	37.00	37.00	37.00	74.01	111.01	148.02

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
East Garrison														
Market rate	SF Residential (< 5 units / acre)	601	Dwelling Units	0.3	1		180.30	0.00	0.00	0.00	180.30	180.30	180.30	180.30
Affordable	SF Residential (5-8 units / acre)		Dwelling Units	0.186	1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						County of Monterey	180.30	0.00	0.00	0.00	180.30	180.30	180.30	180.30
Non Residential														
Monterey County Office														
Intergarrison Rd Office Park	Office / R&D	635800	Square Feet	0.000135		County of Monterey	0.00	0.00	85.83	0.00	0.00	0.00	85.83	85.83
East Garrison I Office Development	Office / R&D	68000	Square Feet	0.000135		County of Monterey	9.18	0.00	0.00	0.00	9.18	9.18	9.18	9.18
Monterey County Light Ind.														
	Light Industrial			0.00015		County of Monterey	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monterey County Retail														
East Garrison I Retail	Retail	34000	Square Feet	0.00021		County of Monterey	7.14	0.00	0.00	0.00	7.14	7.14	7.14	7.14
						County of Monterey	0.00							
Monterey County Landscaping						County of Monterey								
East Garrison Landscaping	Landscape (turf)	5	Acres	2.5		County of Monterey	12.50	0.00	0.00	0.00	12.50	12.50	12.50	12.50

CSUMB	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
New Residential																							
CSUMB Housing (CSU Corporation)	CSUMB	Dwelling Units							70	70	70	70	70	70	70	70	70	70	70	70	70	70	45
Student Housing Phase 2B	CSUMB	Beds				400																	
Student Housing Phase 3	CSUMB	Beds						600															
Student Housing Phase 4	CSUMB	Beds								600													
Student Housing Phase 5	CSUMB	Beds										600											
Student Housing Phase 6	CSUMB	Beds												600									
Student Housing Phase 7	CSUMB	Beds														600							
Student Housing Phase 8	CSUMB	Beds																600					
Student Housing Phase 9	CSUMB	Beds																		600			
Student Housing Phase 10	CSUMB	Beds																				600	
Student Housign Landscape 2B	CSUMB	Square Feet				160,000																	
Student Housign Landscape 3	CSUMB	Square Feet						240000															
Student Housign Landscape 4	CSUMB	Square Feet								200,000													
Student Housign Landscape 5	CSUMB	Square Feet										200000											
Student Housign Landscape 6	CSUMB	Square Feet												200,000									
Student Housign Landscape 7	CSUMB	Square Feet														200,000							
Student Housign Landscape 8	CSUMB	Square Feet																200,000					
Student Housign Landscape 9	CSUMB	Square Feet																		200,000			
Student Housign Landscape 10	CSUMB	Square Feet																				200000	
Non Residential																							
Student Union (Phase I)	CSUMB	Square Feet		70,360																			
Academic III	CSUMB	Square Feet		48,032																			
Storage Faciltiy	CSUMB	Square Feet			50,000																		
Panetta Institute	CSUMB	Square Feet				63,695																	
Academic IV	CSUMB	Square Feet				72,200																	
Demolish bldgs 13, 21, 23 & 902	CSUMB	Square Feet				(29,247)																	
Student Rec Center	CSUMB	Square Feet						70,000															
Student Life (Phase I)	CSUMB	Square Feet						72,737															
Administration Building	CSUMB	Square Feet								77,454													
Student Union (Phase II)	CSUMB	Square Feet								20,000													
Childcare Center	CSUMB	Square Feet								23,000													
Academic V	CSUMB	Square Feet										76,704											
Demolish bldgs 1, 2, 3, 42 & 91	CSUMB	Square Feet										(24,232)											
Wellness Center	CSUMB	Square Feet										30,769											
Student Life (Phase II)	CSUMB	Square Feet												72,736									
Facilities Building	CSUMB	Square Feet												23,590									
Academic VI	CSUMB	Square Feet															76,704						
Demolish bldgs 14 & 16	CSUMB	Square Feet															(21,271)						
Campus Arts & Auditorium	CSUMB	Square Feet															82,291						
Recreation Center Addition	CSUMB	Square Feet															64,574						
Academic VII	CSUMB	Square Feet																		76,704			
Demolish bldgs 44, 45, 46, 58 & 59	CSUMB	Square Feet																		(26,254)			
Academic VIII	CSUMB	Square Feet																				76,704	
Demolish bldgs 70 & 95	CSUMB	Square Feet																				(5,341)	
Dining additions (in various buildings)	CSUMB	Square Feet		5,144		4,003		4,841		4,018		5,797		1,221			2,143			521		399	
Stadium House	CSUMB	Square Feet					40,177																
Field House & Otter Retail	CSUMB	Square Feet							12,502														
Aquatic Center	CSUMB	Square Feet										7,000											
Stadium Field and Track (replaces existing stadium)	CSUMB	Acres				0.1																	
Multi-Purpose Field	CSUMB	Acres						3.0															
Soccer Field	CSUMB	Acres								1.9													
Olympic Pools (2)	CSUMB	Square Feet												27,000									
Tennis Court Landscaping	CSUMB	Acres														2.2							
MB Charter School	CSUMB	Square Feet									31,800												
MB Charter School Landscape	CSUMB	Acres									5.3												
Greenhouses	CSUMB	Square Feet			1,344.00																		

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY)				Cumulative Demand (AFY)			
							2025	2030	2035	2040	2025	2030	2035	2040
New Residential														
CSUMB Housing (CSU Corporation)	Multi family (> 15 units / acre)	1025	Dwelling Units	0.25		CSUMB	0.00	87.50	87.50	81.25	0.00	87.50	175.00	256.25
Student Housing Phase 2B	Other	400	Beds	0.036	C1	CSUMB	14.40	0.00	0.00	0.00	14.40	14.40	14.40	14.40
Student Housing Phase 3	Other	600	Beds	0.036		CSUMB	21.60	0.00	0.00	0.00	21.60	21.60	21.60	21.60
Student Housing Phase 4	Other	600	Beds	0.036		CSUMB	0.00	21.60	0.00	0.00	0.00	21.60	21.60	21.60
Student Housing Phase 5	Other	600	Beds	0.036		CSUMB	0.00	21.60	0.00	0.00	0.00	21.60	21.60	21.60
Student Housing Phase 6	Other	600	Beds	0.036		CSUMB	0.00	0.00	21.60	0.00	0.00	0.00	21.60	21.60
Student Housing Phase 7	Other	600	Beds	0.036		CSUMB	0.00	0.00	21.60	0.00	0.00	0.00	21.60	21.60
Student Housing Phase 8	Other	600	Beds	0.036		CSUMB	0.00	0.00	21.60	0.00	0.00	0.00	21.60	21.60
Student Housing Phase 9	Other	600	Beds	0.036		CSUMB	0.00	0.00	0.00	21.60	0.00	0.00	0.00	21.60
Student Housing Phase 10	Other	600	Beds	0.036		CSUMB	0.00	0.00	0.00	21.60	0.00	0.00	0.00	21.60
Student Housign Landscape 2B	Landscape (non-turf)	160000	Square Feet	0.000051	C2	CSUMB	8.16	0.00	0.00	0.00	8.16	8.16	8.16	8.16
Student Housign Landscape 3	Landscape (non-turf)	240000	Square Feet	0.000051		CSUMB	12.24	0.00	0.00	0.00	12.24	12.24	12.24	12.24
Student Housign Landscape 4	Landscape (non-turf)	200000	Square Feet	0.000051		CSUMB	0.00	10.20	0.00	0.00	0.00	10.20	10.20	10.20
Student Housign Landscape 5	Landscape (non-turf)	200000	Square Feet	0.000051		CSUMB	0.00	10.20	0.00	0.00	0.00	10.20	10.20	10.20
Student Housign Landscape 6	Landscape (non-turf)	200000	Square Feet	0.000051		CSUMB	0.00	0.00	10.20	0.00	0.00	0.00	10.20	10.20
Student Housign Landscape 7	Landscape (non-turf)	200000	Square Feet	0.000051		CSUMB	0.00	0.00	10.20	0.00	0.00	0.00	10.20	10.20
Student Housign Landscape 8	Landscape (non-turf)	200000	Square Feet	0.000051		CSUMB	0.00	0.00	10.20	0.00	0.00	0.00	10.20	10.20
Student Housign Landscape 9	Landscape (non-turf)	200000	Square Feet	0.000051		CSUMB	0.00	0.00	0.00	10.20	0.00	0.00	0.00	10.20
Student Housign Landscape 10	Landscape (non-turf)	200000	Square Feet	0.000051		CSUMB	0.00	0.00	0.00	10.20	0.00	0.00	0.00	10.20
Non Residential														
Student Union (Phase I)	Higher Education	70360	Square Feet	0.000072	C3	CSUMB	5.07	0.00	0.00	0.00	5.07	5.07	5.07	5.07
Academic III	Higher Education	48032	Square Feet	0.000072		CSUMB	3.46	0.00	0.00	0.00	3.46	3.46	3.46	3.46
Storage Faciltiy	Higher Education	50000	Square Feet	0.000072		CSUMB	3.60	0.00	0.00	0.00	3.60	3.60	3.60	3.60
Panetta Institute	Higher Education	63695	Square Feet	0.000072		CSUMB	4.59	0.00	0.00	0.00	4.59	4.59	4.59	4.59
Academic IV	Higher Education	72200	Square Feet	0.000072		CSUMB	5.20	0.00	0.00	0.00	5.20	5.20	5.20	5.20
Demolish bldgs 13, 21, 23 & 902	Other	-29247	Square Feet	0.000018		CSUMB	-0.53	0.00	0.00	0.00	-0.53	-0.53	-0.53	-0.53
Student Rec Center	Higher Education	70000	Square Feet	0.000072		CSUMB	5.04	0.00	0.00	0.00	5.04	5.04	5.04	5.04
Student Life (Phase I)	Higher Education	72737	Square Feet	0.000072		CSUMB	5.24	0.00	0.00	0.00	5.24	5.24	5.24	5.24
Administration Building	Higher Education	77454	Square Feet	0.000072		CSUMB	0.00	5.58	0.00	0.00	0.00	5.58	5.58	5.58
Student Union (Phase II)	Higher Education	20000	Square Feet	0.000072		CSUMB	0.00	1.44	0.00	0.00	0.00	1.44	1.44	1.44
Childcare Center	Other	23000	Square Feet	0.0001	C4	CSUMB	0.00	2.30	0.00	0.00	0.00	2.30	2.30	2.30
Academic V	Higher Education	76704	Square Feet	0.000072		CSUMB	0.00	5.52	0.00	0.00	0.00	5.52	5.52	5.52
Demolish bldgs 1, 2, 3, 42 & 91	Higher Education	-24232	Square Feet	0.000072		CSUMB	0.00	-1.74	0.00	0.00	0.00	-1.74	-1.74	-1.74
Wellness Center	Higher Education	30769	Square Feet	0.000072		CSUMB	0.00	2.22	0.00	0.00	0.00	2.22	2.22	2.22
Student Life (Phase II)	Higher Education	72736	Square Feet	0.000072		CSUMB	0.00	0.00	5.24	0.00	0.00	0.00	5.24	5.24
Facilities Building	Higher Education	23590	Square Feet	0.000072		CSUMB	0.00	0.00	1.70	0.00	0.00	0.00	1.70	1.70
Academic VI	Higher Education	76704	Square Feet	0.000072		CSUMB	0.00	0.00	5.52	0.00	0.00	0.00	5.52	5.52
Demolish bldgs 14 & 16	Other	-21271	Square Feet	0.000508		CSUMB	0.00	0.00	-10.80	0.00	0.00	0.00	-10.80	-10.80
Campus Arts & Auditorium	Higher Education	82291	Square Feet	0.000072		CSUMB	0.00	0.00	5.92	0.00	0.00	0.00	5.92	5.92
Recreation Center Addition	Higher Education	64574	Square Feet	0.000072		CSUMB	0.00	0.00	4.65	0.00	0.00	0.00	4.65	4.65
Academic VII	Higher Education	76704	Square Feet	0.000072		CSUMB	0.00	0.00	0.00	5.52	0.00	0.00	0.00	5.52
Demolish bldgs 44, 45, 46, 58 & 59	Other	-26254	Square Feet	0.000017		CSUMB	0.00	0.00	0.00	-0.44	0.00	0.00	0.00	-0.44
Academic VIII	Higher Education	76704	Square Feet	0.000072		CSUMB	0.00	0.00	0.00	5.52	0.00	0.00	0.00	5.52
Demolish bldgs 70 & 95	Other	-5341	Square Feet	0		CSUMB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dining additions (in various buildings)	Other	28087	Square Feet	0.00012		CSUMB	1.68	1.18	0.40	0.11	1.68	2.86	3.26	3.37
Stadium House	Higher Education	40177	Square Feet	0.000072		CSUMB	2.89	0.00	0.00	0.00	2.89	2.89	2.89	2.89
Field House & Otter Retail	Higher Education	12502	Square Feet	0.000072		CSUMB	0.00	0.90	0.00	0.00	0.00	0.90	0.90	0.90
Aquatic Center	Higher Education	7000	Square Feet	0.000072		CSUMB	0.00	0.50	0.00	0.00	0.00	0.50	0.50	0.50
Stadium Field and Track	Landscape (turf)	0.1	Acres	2.5		CSUMB	0.25	0.00	0.00	0.00	0.25	0.25	0.25	0.25
Multi-Purpose Field	Landscape (turf)	2.9843893	Acres	2.5		CSUMB	7.46	0.00	0.00	0.00	7.46	7.46	7.46	7.46
Soccer Field	Landscape (turf)	1.8778696	Acres	2.5		CSUMB	0.00	4.69	0.00	0.00	0.00	4.69	4.69	4.69
Olympic Pools (2)	Other	27000	Square Feet	0.0002		CSUMB	0.00	0.00	5.40	0.00	0.00	0.00	5.40	5.40
Tennis Court Landscaping	Landscape (non-turf)	2.17	Acres	2.1		CSUMB	0.00	0.00	4.56	0.00	0.00	0.00	4.56	4.56
MB Charter School	Schools (K-12)	31800	Square Feet	0.0003		CSUMB	0.00	9.54	0.00	0.00	0.00	9.54	9.54	9.54
MB Charter School Landscape	Landscape (non-turf)	5.3	Acres	2.1		CSUMB	0.00	11.13	0.00	0.00	0.00	11.13	11.13	11.13
CSUMB Landscaping	Landscape (non-turf)	1344	Square Feet	0.00223		CSUMB	3.00	0.00	0.00	0.00	3.00	3.00	3.00	3.00

UCMBEST	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
New Residential																							
UC 8th Street	UC/MCO	Dwelling Units												30	30	35	35	35	35	30	30	30	
UC East Campus - SF	UC/MCO	Dwelling Units								110	110	20											
UC East Campus - MF	UC/MCO	Dwelling Units																					
Non Residential																							
UC Central North - R&D	UC/MCO	Square Feet				60,000	80,000	100,000	100,000	100,000	72,000												
UC Central North - Commercial	UC/MAR	Square Feet				62,500	82,500	82,500	20,500														
UC Central North - Landscape	UC/MAR	Square Feet					2	2	2	2	2												
UC West & Central South - Office	UC/MAR	Square Feet										68,000	100,000										
UC West & Central South - Industrial	UC/MAR	Square Feet					20,000	20,000	20,000	20,000	20,000												
UC West & Central South - Retail	UC/MAR	Square Feet							10,000														
UC East Campus - Retail	UC/MAR	Square Feet									26,000	26,000											

Seaside	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
Residential																							
Seaside Resort Housing	SEA	Dwelling Units				25	25	25	25	22													
Seaside East	SEA	Dwelling Units												100	100	100	100	100	100	100	100	100	100
Nurses Barracks	SEA	Dwelling Units			40																		
Seaside Senior Living	SEA	Dwelling Units				88	43	13															
Main Gate																							
Single Family Homes	SEA	Dwelling Units				10	70	60															
Apartments	SEA	Dwelling Units					310	140	30														
Campus Town	SEA	Dwelling Units																					
Single Family Homes	SEA	Dwelling Units					100	84	60					70	70	70	70	70	70	70	70	70	11
Apartments	SEA	Dwelling Units												100	100	100	100	100	100				
Non Residential																							
Main Gate																							
Retail	SEA	Square Feet						95,000															
Gas Station	SEA	Pumps						16															
Restaurants	SEA	Square Feet						13,000															
Landscaping	SEA	Acres						7.35															
Hotel	SEA	Rooms						250															
Seaside Resort																							
Seaside Resort Golf Buildings	SEA	Square Feet		10,000																			
Seaside Resort Golf Clubhouse	SEA	Square Feet						16,300															
Seaside Golf Course Hotel	SEA	Rooms						330															
Seaside Golf Course Timeshares	SEA	Rooms							120	50													
Campus Town																							
Commercial	SEA	Square Feet							50,000	50,000	50,000												
Office	SEA	Square Feet												50,000									
Hotel	SEA	Rooms						250							75								
Parks - Turf	SEA	Acres												1.5	1.5								
Landscape	SEA	Acres						1	0.5	0.5	0.5			0.5	0.5	0.5	0.3						
Seaside Senior Living																							
Dining Hall/Kitchen	SEA	Square Feet				2,000	1,000																
Clinic	SEA	Square Feet				5,000																	
Offices	SEA	Square Feet				5,000	2,000																
Beauty Shop (4 seats)	SEA	Stations				4																	
Day Spa	SEA	Square Feet					2,000																
Landscape	SEA	Acres				0.93																	
Veterans' Cemeterey	SEA	Square Feet			9,000	7,500		11,200															
Monterey Peninsula Trade & Conf Cntr	SEA	Square Feet							250,000														
Seaside Corp Yard	SEA	Square Feet						25,000	27,200														
Conference Facility	SEA	Square Feet						27,000															
Seaside East - Office	SEA	Square Feet				50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000										
Seaside Est - Industrial	SEA	Square Feet				10,000	20,000	20,000	20,000	20,000	10,000												
Auto Center (1st & Light Fighter)	SEA	Square Feet																					

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
UC 8th Street	Multi family (> 15 units / acre)	290	Dwelling Units	0.25		UCMBEST	0.00	0.00	41.25	31.25	0.00	0.00	41.25	72.50
UC East Campus - SF	SF Residential (< 5 units / acre)	240	Dwelling Units	0.5		UCMBEST	0.00	120.00	0.00	0.00	0.00	120.00	120.00	120.00
UC East Campus - MF	Multi family (> 15 units / acre)		Dwelling Units	0.25		UCMBEST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UC Central North - R&D	Office / R&D	512000	Square Feet	0.000135		UCMBEST	32.40	36.72	0.00	0.00	32.40	69.12	69.12	69.12
UC Central North - Commercial	Other Commercial	248000	Square Feet	0.0003		UCMBEST	68.25	6.15	0.00	0.00	68.25	74.40	74.40	74.40
UC Central North - Landscape	Landscape (non-turf)	9.71	Square Feet	2.1		UCMBEST	8.40	11.99	0.00	0.00	8.40	20.39	20.39	20.39
UC West & Central South - Office	Office / R&D	168000	Square Feet	0.000135		UCMBEST	0.00	22.68	0.00	0.00	0.00	22.68	22.68	22.68
UC West & Central South - Industrial	Light Industrial	100000	Square Feet	0.00015		UCMBEST	6.00	9.00	0.00	0.00	6.00	15.00	15.00	15.00
UC West & Central South - Retail	Retail	10000	Square Feet	0.00021		UCMBEST	0.00	2.10	0.00	0.00	0.00	2.10	2.10	2.10
UC East Campus - Retail	Retail	52000	Square Feet	0.00021		UCMBEST	0.00	10.92	0.00	0.00	0.00	10.92	10.92	10.92

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
Residential														
Seaside Resort Housing	SF Residential (< 5 units / acre)	122	Dwelling Units	0.5		City of Seaside	37.50	23.50	0.00	0.00	37.50	61.00	61.00	61.00
Seaside East	SF Residential (5-8 units / acre)	1000	Dwelling Units	0.33		City of Seaside	0.00	0.00	165.00	165.00	0.00	0.00	165.00	330.00
Nurses Barracks	Multi family (> 15 units / acre)	40	Dwelling Units	0.25		City of Seaside	10.00	0.00	0.00	0.00	10.00	10.00	10.00	10.00
Seaside Senior Living	Multi family (> 15 units / acre)	144	Dwelling Units	0.25		City of Seaside	36.00	0.00	0.00	0.00	36.00	36.00	36.00	36.00
Main Gate														
Single Family Homes	Residential (8-15 units / acre)	140	Dwelling Units	0.25		City of Seaside	35.00	0.00	0.00	0.00	35.00	35.00	35.00	35.00
Apartments	Multi family (> 15 units / acre)	480	Dwelling Units	0.25		City of Seaside	112.50	7.50	0.00	0.00	112.50	120.00	120.00	120.00
Campus Town														
Single Family Homes	Residential (8-15 units / acre)	885	Dwelling Units	0.25		City of Seaside	46.00	15.00	87.50	72.75	46.00	61.00	148.50	221.25
Apartments	Multi family (> 15 units / acre)	600	Dwelling Units	0.25		City of Seaside	0.00	0.00	125.00	25.00	0.00	0.00	125.00	150.00
Non Residential														
Main Gate														
Retail	Retail	95000	Square Feet	0.00021		City of Seaside	19.95	0.00	0.00	0.00	19.95	19.95	19.95	19.95
Gas Station	Other	16	Pumps	0.1051		City of Seaside	1.68	0.00	0.00	0.00	1.68	1.68	1.68	1.68
Restaurants	Restaurant	13000	Square Feet	0.00145		City of Seaside	18.85	0.00	0.00	0.00	18.85	18.85	18.85	18.85
Landscaping	Landscape (non-turf)	7.35	Acres	2.1		City of Seaside	15.44	0.00	0.00	0.00	15.44	15.44	15.44	15.44
Hotel	Hotel, Motel and Timeshares	250	Rooms	0.11		City of Seaside	27.50	0.00	0.00	0.00	27.50	27.50	27.50	27.50
Seaside Resort														
Seaside Resort Golf Buildings	Office / R&D	10000	Square Feet	0.000135		City of Seaside	1.35	0.00	0.00	0.00	1.35	1.35	1.35	1.35
Seaside Resort Golf Clubhouse	Restaurant	16300	Square Feet	0.00145		City of Seaside	23.64	0.00	0.00	0.00	23.64	23.64	23.64	23.64
Seaside Golf Course Hotel	Hotel, Motel and Timeshares	330	Rooms	0.11		City of Seaside	36.30	0.00	0.00	0.00	36.30	36.30	36.30	36.30
Seaside Golf Course Timeshares	Hotel, Motel and Timeshares	170	Rooms	0.11		City of Seaside	0.00	18.70	0.00	0.00	0.00	18.70	18.70	18.70
Campus Town														
Commercial	Other Commercial	150000	Square Feet	0.0003		City of Seaside	0.00	45.00	0.00	0.00	0.00	45.00	45.00	45.00
Office	Office / R&D	50000	Square Feet	0.000135		City of Seaside	0.00	0.00	6.75	0.00	0.00	0.00	6.75	6.75
Hotel	Hotel, Motel and Timeshares	325	Rooms	0.11		City of Seaside	27.50	0.00	8.25	0.00	27.50	27.50	35.75	35.75
Parks - Turf	Landscape (turf)	3	Acres	2.5		City of Seaside	0.00	0.00	7.50	0.00	0.00	0.00	7.50	7.50
Landscape	Landscape (non-turf)	4.3	Acres	2.1		City of Seaside	2.10	3.15	3.78	0.00	2.10	5.25	9.03	9.03
Seaside Senior Living														
Dining Hall/Kitchen	Restaurant	3000	Square Feet	0.00145		City of Seaside	4.35	0.00	0.00	0.00	4.35	4.35	4.35	4.35
Clinic	Other	5000	Square Feet	0.00018		City of Seaside	0.90	0.00	0.00	0.00	0.90	0.90	0.90	0.90
Offices	Other	7000	Square Feet	0.00012		City of Seaside	0.84	0.00	0.00	0.00	0.84	0.84	0.84	0.84
Beauty Shop (4 seats)	Other	4	Stations	0.059		City of Seaside	0.24	0.00	0.00	0.00	0.24	0.24	0.24	0.24
Day Spa	Other	2000	Square Feet	0.00018		City of Seaside	0.36	0.00	0.00	0.00	0.36	0.36	0.36	0.36
Landscape	Landscape (non-turf)	0.93	Acres	2.1		City of Seaside	1.95	0.00	0.00	0.00	1.95	1.95	1.95	1.95
Veterans' Cemeterey	Various	27700	Square Feet	0.000141		City of Seaside	3.90	0.00	0.00	0.00	3.90	3.90	3.90	3.90
Monterey Peninsula Trade & Conf Cntr	Office / R&D	250000	Square Feet	0.000135		City of Seaside	0.00	33.75	0.00	0.00	0.00	33.75	33.75	33.75
Seaside Corp Yard	Various	52200	Square Feet	0.00015709		City of Seaside	3.93	4.27	0.00	0.00	3.93	8.20	8.20	8.20
Conference Facility	Office / R&D	27000	Square Feet	0.0002		City of Seaside	5.40	0.00	0.00	0.00	5.40	5.40	5.40	5.40
Seaside East - Office	Office / R&D	400000	Square Feet	0.000135		City of Seaside	20.25	33.75	0.00	0.00	20.25	54.00	54.00	54.00
Seaside Est - Industrial	Light Industrial	100000	Square Feet	0.00015		City of Seaside	7.50	7.50	0.00	0.00	7.50	15.00	15.00	15.00
						City of Seaside	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Del Rey Oaks	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
New Residential																							
Del Rey Oaks																							
Residential	DRO	Dwelling Units							50	50	50	50	50	25									
Golf Villas	DRO	Dwelling Units																					
Patio Homes	DRO	Dwelling Units																					
Condos	DRO	Dwelling Units																					
Workforce	DRO	Dwelling Units																					
Townhomes/Senior Casitas	DRO	Dwelling Units																					
RV Resort (Manager)	DRO	Dwelling Units					1																
Non Residential																							
Del Rey Oaks Office	DRO	Square Feet				100,000	100,000																
Del Rey Oaks Retail	DRO	Square Feet								25,000													
Del Rey Oaks Hotel	DRO	Rooms								250													
Del Rey Oaks Industrial	DRO	Square Feet							100,000	100,000	100,000	100,000	100,000										
RV Resort	DRO	Spaces					70					40					100						

Monterey City	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
Non Residential																							
Monterey City Office	MRY	Square Feet								721,524													
Industrial -- City Corp. Yard	MRY	Square Feet								100,000													
Industrial -- Public/Private	MRY	Square Feet								116,275													

US Army	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
Residential																							
Lower Stilwell Single Family	ARMY	Dwelling Units				36	42	72															
Lower Stilwell Duplex	ARMY	Dwelling Units																					
Non Residential																							
Recreation Center	ARMY	Square Feet							8,340														
Child Development Center	ARMY	Square Feet								24,000													
Landscaping	ARMY	Acre					1																
Emergency Services Center	ARMY	Square Feet				40,000																	

CA State Parks	Jurisd	Units	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
Residential																							
Staff Housing	SP	Dwelling Units							3														
Non Residential																							
Fort Ord Dunes State Park - Bldgs	SP	Square feet			3,645																		
Fort Ord Dunes State Park - Restrooms	SP	Stalls			16																		
Fort Ord Dunes State Park - RV Park	SP	Spaces						45															
American Youth Hostel (Seaside)	SP	Units			18					12	2												

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
Del Rey Oaks														
Residential	SF Residential (5-8 units / acre)	275	Dwelling Units	0.33			0.00	82.50	8.25	0.00	0.00	82.50	90.75	90.75
Golf Villas	SF Residential (< 5 units / acre)		Dwelling Units	0.5										
Patio Homes	SF Residential (< 5 units / acre)		Dwelling Units	0.5										
Condos	Multi family (> 15 units / acre)		Dwelling Units	0.25										
Workforce	Multi family (> 15 units / acre)		Dwelling Units	0.25										
Townhomes/Senior Casitas	SF Residential (5-8 units / acre)		Dwelling Units	0.33										
RV Resort (Manager)	Residential (8-15 units / acre)	1	Dwelling Units	0.25			0.25	0.00	0.00	0.00	0.25	0.25	0.25	0.25
						Del Rey Oaks	0.25	82.50	8.25	0.00	0.25	82.75	91.00	91.00
Non Residential														
Del Rey Oaks Office	Office / R&D	200000	Square Feet	0.000135		Del Rey Oaks	27.00	0.00	0.00	0.00	27.00	27.00	27.00	27.00
Del Rey Oaks Retail	Retail	25000	Square Feet	0.00021		Del Rey Oaks	0.00	5.25	0.00	0.00	0.00	5.25	5.25	5.25
Del Rey Oaks Hotel	Hotel, Motel and Timeshares	250	Rooms	0.11		Del Rey Oaks	0.00	27.50	0.00	0.00	0.00	27.50	27.50	27.50
Del Rey Oaks Industrial	Light Industrial	500000	Square Feet	0.00015		Del Rey Oaks	0.00	75.00	0.00	0.00	0.00	75.00	75.00	75.00
RV Resort	Other	210	Spaces	0.06	1	Del Rey Oaks	4.20	2.40	6.00	0.00	4.20	6.60	12.60	12.60

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
Monterey City Office	Office / R&D	721524	Square Feet	0.000135		City of Monterey	0.00	97.41	0.00	0.00	0.00	97.41	97.41	97.41
Industrial -- City Corp. Yard	Light Industrial	100000	Square Feet	0.00015		City of Monterey	0.00	15.00	0.00	0.00	0.00	15.00	15.00	15.00
Industrial -- Public/Private	Light Industrial	116275	Square Feet	0.00015		City of Monterey	0.00	17.44	0.00	0.00	0.00	17.44	17.44	17.44

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
Lower Stilwell Single Family	Residential (8-15 units / acre)	150	Dwelling Units	0.25	3	U.S. Army	37.50	0.00	0.00	0.00	37.50	37.50	37.50	37.50
Lower Stilwell Duplex	Residential (8-15 units / acre)		Dwelling Units	0.25	3	U.S. Army	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non Residential														
Recreation Center	Institutional	8340	Square Feet	0.0003		U.S. Army	0.00	2.50	0.00	0.00	0.00	2.50	2.50	2.50
Child Development Center	Institutional	24000	Square Feet	0.0003		U.S. Army	0.00	7.20	0.00	0.00	0.00	7.20	7.20	7.20
Landscaping	Landscape (non-turf)	1	Acre	2.1		U.S. Army	2.10	0.00	0.00	0.00	2.10	2.10	2.10	2.10
Emergency Services Center	Governmental	40000	Square Feet	0.0003		U.S. Army	12.00	0.00	0.00	0.00	12.00	12.00	12.00	12.00

Land Use Type	Land Use	Total	Units	Multiplier	Notes		Incremental Demand (AFY) 2025	2030	2035	2040	Cumulative Demand (AFY) 2025	2030	2035	2040
New Residential														
Staff Housing	SF Residential (5-8 units / acre)	3	Dwelling Units	0.33		State Parks and Rec.	0.00	0.99	0.00	0.00	0.00	0.99	0.99	0.99
New Residential														
Fort Ord Dunes State Park - Bldgs	Institutional	3645	Square feet	0.0003		State Parks and Rec.	1.09	0.00	0.00	0.00	1.09	1.09	1.09	1.09
Fort Ord Dunes State Park - Restrooms	Other	16	Stalls	0.058		State Parks and Rec.	0.93	0.00	0.00	0.00	0.93	0.93	0.93	0.93
Fort Ord Dunes State Park - RV Park	Other	45	Spaces	0.065		State Parks and Rec.	2.93	0.00	0.00	0.00	2.93	2.93	2.93	2.93
American Youth Hostel (Seaside)	Hotel, Motel and Timeshares	32	Units	0.11		State Parks and Rec.	1.98	1.54	0.00	0.00	1.98	3.52	3.52	3.52

NOTES:

1 Unique water demand multiplier based on the quantity of units (square feet, acres, dwelling units) and total expected water demand, from Water Supply Supply Assessment.
2 Marina DVSP projects a 30-year build-out. Annual values reflect 1/30th of total.
3 OMC housing is being rennovated and replaced. Currently there are 150 in transition.
C1 Campus housing factor is 0.031 AFY/bed for dormitory plus 0.005 AFY/bed for dining halls.
C2 Factor is for landscaping around building.
C3 Academic factor is 0.00021 AFY/SF for indoor demand plus 0.00051 AFY/SF for landscaping around building
C4 Child care center factor based upon existing facility in the Ord Community.

Table C4: 2020 Population Growth by Jurisdiction

	Jurisdiction	2020	2025	2030	2035	2040
Ord	U.S. Army		450	450	450	450
	CSUMB		400	2,318	4,836	6,702
	Del Rey Oaks		3	753	828	828
	City of Monterey		0	0	0	0
	County of Monterey		1,233	1,233	1,233	1,233
	UCMBEST		0	624	1,053	1,378
	City of Seaside		2,883	3,294	7,344	10,017
	State Parks and Rec.		0	9	9	9
	Marina Ord Comm.		3,743	5,786	5,786	5,786
Marina	Armstrong Ranch		3,591	4,085	4,085	4,085
	RMC Lonestar		0	0	0	0
	Marina Central		1,633	3,265	4,898	6,500

Subtotal - Ord	22,349	30,611	36,366	43,438	48,302
Subtotal - Marina	14,297	19,520	21,647	23,279	24,881
Total	36,646	50,131	58,012	66,717	73,183

Note: The existing (current) population is aggregated by service area (Ord and Marina) and not shown by jurisdiction.

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Marina Ord	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
New Residential																								
Sea Haven																								
Townhome	MAR	Residential (8-15 units / acre)	Dwelling Units	12	13	13	13	13	13	13	12													
Cluster Market/Bridge	MAR	Residential (8-15 units / acre)	Dwelling Units	47	19	19	19	19	19	19	18													
Market A	MAR	SF Residential (5-8 units / acre)	Dwelling Units	39	29	29	29	29	29	29	33													
Market B	MAR	SF Residential (5-8 units / acre)	Dwelling Units	-	34	34	34	34	34	34	33													
Estates	MAR	SF Residential (< 5 units / acre)	Dwelling Units	-	13	12	12	12	12	12	12	-												
Cypress Knolls Specific Plan Area																								
SF Home / Townhome	MAR	SF Residential (5-8 units / acre)	Dwelling Units								255	200		141										
Apartments	MAR	Multi family (> 15 units / acre)	Dwelling Units								85			31										
Assisted Living	MAR	Multi family (> 15 units / acre)	Dwelling Units											60										
Dunes on Monterey Bay																								
Alley (small lot)	MAR	Residential (8-15 units / acre)	Dwelling Units	44	54	59	37																	
Carriage	MAR	Residential (8-15 units / acre)	Dwelling Units		18	30	47																	
Standard	MAR	SF Residential (5-8 units / acre)	Dwelling Units		44	6																		
Standard (small lot)	MAR	Residential (8-15 units / acre)	Dwelling Units		48	23																		
Duets	MAR	SF Residential (5-8 units / acre)	Dwelling Units		62	88	40	60	4															
Townhome (live-work)	MAR	Residential (8-15 units / acre)	Dwelling Units		50	50	39																	
Townhome (mixed use)	MAR	Residential (8-15 units / acre)	Dwelling Units		8	8	8																	
Apartments (completed)	MAR	Multi family (> 15 units / acre)	Dwelling Units																					
VTC Supportive Housing	MAR	Residential (8-15 units / acre)	Dwelling Units		71																			
Armstrong Ranch	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
New Residential																								
Marina Station																								
Single Family Homes (15,000)	MAR	SF Residential (< 5 units / acre)	Dwelling Units				23	87	37															
Single Family Homes (6,500)	MAR	SF Residential (5-8 units / acre)	Dwelling Units				100	250	220	99														
Apartments	MAR	Multi family (> 15 units / acre)	Dwelling Units				100	250	220	78														
Marina Central	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
New Residential																								
In-Fill Development MF	MAR	Multi family (> 15 units / acre)	Dwelling Units						50					50					50					39
In-Fill Development SF	MAR	Residential (8-15 units / acre)	Dwelling Units		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Downtown Specific Plan (over 30 years)	MAR	Multi family (> 15 units / acre)	Dwelling Units		97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97
Monterey County	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
New Residential																								
East Garrison I																								
Market Rate	MCO	SF Residential (< 5 units / acre)	Dwelling Units	143	125	177	79	77																
Affordable	MCO	SF Residential (5-8 units / acre)	Dwelling Units																					

Marina Ord	**Jurisd**	**Multiplier**	**Incremental Increase (Persons)**					**Cumulative Increase (Persons)**					**Incremental Increase (EDU)**				
New Residential		**Marina Heights**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
Sea Haven		1.5	18	97.5	37.5	0	0	18	116	153	153	153	12	65	25	0	0
Townhome	MAR	3.0	141	285	111	0	0	141	426	537	537	537	47	95	37	0	0
Cluster Market/Bridge	MAR	3.0	117	435	186	0	0	117	552	738	738	738	39	145	62	0	0
Market A	MAR	3.0	0	510	201	0	0	0	510	711	711	711	0	170	67	0	0
Market B	MAR	4.0	0	244	96	0	0	0	244	340	340	340	0	61	24	0	0
Estates	MAR		**276**	**1571.5**	**631.5**	**0**	**0**	**276**	**1848**	**2479**	**2479**	**2479**	**98**	**536**	**215**	**0**	**0**
		Cypress Knolls															
Cypress Knolls Specific Plan Area		1.8	0	0	1072.8	0	0	0	0	1073	1073	1073		0	596	0	0
SF Home / Townhome	MAR	2.4	0	0	278.4	0	0	0	0	278	278	278		0	116	0	0
Apartments	MAR	1.0	0	0	60	0	0	0	0	60	60	60		0	60	0	0
Assisted Living	MAR		**0**	**0**	**1411.2**	**0**	**0**	**0**	**0**	**1411**	**1411**	**1411**	**0**	**0**	**772**	**0**	**0**
		Dunes (UV)															
Dunes on Monterey Bay		2.0	88	300	0	0	0	88	388	388	388	388	44	150	0	0	0
Alley (small lot)	MAR	3.0	0	285	0	0	0	0	285	285	285	285		95	0	0	0
Carriage	MAR	3.0	0	150	0	0	0	0	150	150	150	150		50	0	0	0
Standard	MAR	3.0	0	213	0	0	0	0	213	213	213	213		71	0	0	0
Standard (small lot)	MAR	1.5	0	381	0	0	0	0	381	381	381	381		254	0	0	0
Duets	MAR	1.5	0	208.5	0	0	0	0	209	209	209	209		139	0	0	0
Townhome (live-work)	MAR	1.5	0	36	0	0	0	0	36	36	36	36		24	0	0	0
Townhome (mixed use)	MAR	2.0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Apartments (completed)	MAR		**88**	**1573.5**	**0**	**0**	**0**	**88**	**1662**	**1662**	**1662**	**1662**	**44**	**783**	**0**	**0**	**0**
		3.3	0	234.3	0	0	0	0	234	234	234	234		71	0	0	0
VTC Supportive Housing	MAR																
Armstrong Ranch	**Jurisd**																
New Residential																	
Marina Station		**Marina Station**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
Single Family Homes (15,000)	MAR	2.8	0	410	0	0	0	0	410	410	410	410		147	0	0	0
Single Family Homes (6,500)	MAR	2.8	0	1590	276	0	0	0	1590	1867	1867	1867		570	99	0	0
Apartments	MAR	2.8	0	1590	218	0	0	0	1590	1808	1808	1808		570	78	0	0
			0	3591	494	0	0	0	3591	4085	4085	4085	0	1287	177	0	0
Marina Central	**Jurisd**																
New Residential		**Marina Central**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
In-Fill Development MF	MAR	2.8	0	140	140	140	109	0	140	279	419	527		50	50	50	39
In-Fill Development SF	MAR	2.8	0	140	140	140	140	0	140	280	420	560		50	50	50	50
Downtown Specific Plan (over 30 years)	MAR	2.8	0	1353	1353	1353	1353	0	1353	2706	4059	5413		485	485	485	485
			0	1633	1633	1633	1602	0	1633	3265	4898	6500	0	585	585	585	574
Monterey County	**Jurisd**	**Multiplier**	**Incremental Increase (Persons)**					**Cumulative Increase (Persons)**					**Incremental Increase (EDU)**				
New Residential																	
East Garrison I		**East Garrison**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
Market Rate	MCO	2.1	293	939	0	0	0	293	1233	1233	1233	1233	143	458	0	0	0
Affordable	MCO	2.1	0	0	0	0	0	0	0	0	0	0		0	0	0	0
			293	939	0	0	0	293	1233	1233	1233	1233	143	458	0	0	0

CSUMB	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
New Residential																								
CSUMB Housing (CSU Corporation)	CSUMB	Multi family (> 15 units / acre)	Dwelling Units							70	70	70	70	70	70	70	70	70	70	70	70	70	70	45
Student Housing Phase 3	CSUMB	Other	Beds				400																	
Student Housing Phase 4	CSUMB	Other	Beds								600													
Student Housing Phase 5	CSUMB	Other	Beds										600											
Student Housing Phase 6	CSUMB	Other	Beds												600									
Student Housing Phase 7	CSUMB	Other	Beds														600							
Student Housing Phase 8	CSUMB	Other	Beds																600					
Student Housing Phase 9	CSUMB	Other	Beds																		**600**			
Student Housing Phase 10	CSUMB	Other	Beds																				600	
UCMBEST	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
New Residential																								
UC 8th Street	UC/MCO	Multi family (> 15 units / acre)	Dwelling Units												30	30	35	35	35	35	30	30	30	
UC East Campus - SF	UC/MCO	SF Residential (< 5 units / acre)	Dwelling Units								110	110	20											
UC East Campus - MF	UC/MCO	Multi family (> 15 units / acre)	Dwelling Units																					
Seaside	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
Residential																								
Seaside Resort Housing	SEA	SF Residential (< 5 units / acre)	Dwelling Units				25	25	25	25	22													
Seaside East	SEA	SF Residential (5-8 units / acre)	Dwelling Units												100	100	100	100	100	100	100	100	100	100
Nurses Barracks	SEA	Multi family (> 15 units / acre)	Dwelling Units			40																		
Seaside Senior Living	SEA	Multi family (> 15 units / acre)	Dwelling Units				88	43	13															
Main Gate																								
Single Family Homes	SEA	Residential (8-15 units / acre)	Dwelling Units				10	70	60															
Apartments	SEA	Multi family (> 15 units / acre)	Dwelling Units					310	140	30														
Campus Town	SEA		Dwelling Units																					
Single Family Homes	SEA	Residential (8-15 units / acre)	Dwelling Units					100	84	60					70	70	70	70	70	70	70	70	70	11
Apartments	SEA	Multi family (> 15 units / acre)	Dwelling Units												100	100	100	100	100	100				
Del Rey Oaks	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
New Residential																								
Del Rey Oaks																								
Residential	DRO	SF Residential (5-8 units / acre)	Dwelling Units							50	50	50	50	50	25									
Golf Villas	DRO	SF Residential (< 5 units / acre)	Dwelling Units																					
Patio Homes	DRO	SF Residential (< 5 units / acre)	Dwelling Units																					
Condos	DRO	Multi family (> 15 units / acre)	Dwelling Units																					
Workforce	DRO	Multi family (> 15 units / acre)	Dwelling Units																					
Townhomes/Senior Casitas	DRO	SF Residential (5-8 units / acre)	Dwelling Units																					
RV Resort (Manager)	DRO	Residential (8-15 units / acre)	Dwelling Units					1																
US Army	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
Residential																								
Lower Stilwell Single Family	ARMY	Residential (8-15 units / acre)	Dwelling Units				36	42	72															
Lower Stilwell Duplex	ARMY	Residential (8-15 units / acre)	Dwelling Units																					
CA State Parks	**Jurisd**	**Land Use**	**Units**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**	**2033-34**	**2034-35**	**2035-36**	**2036-37**	**2037-38**	**2038-39**	**2039-40**
Residential																								
Staff Housing	SP	SF Residential (5-8 units / acre)	Dwelling Units							3														

CSUMB	**Jurisd**	**CSUMB**		**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
New Residential																		
CSUMB Housing (CSU Corporation)	CSUMB	2.1		0	0	718	718	667	0	0	718	1436	2102		0	350	350	325
Student Housing Phase 3	CSUMB	1		0	400	0	0	0	0	400	400	400	400		400	0	0	0
Student Housing Phase 4	CSUMB	1		0	0	600	0	0	0	0	600	600	600		0	600	0	0
Student Housing Phase 5	CSUMB	1		0	0	600	0	0	0	0	600	600	600		0	600	0	0
Student Housing Phase 6	CSUMB	1		0	0	0	600	0	0	0	0	600	600		0	0	600	0
Student Housing Phase 7	CSUMB	1		0	0	0	600	0	0	0	0	600	600		0	0	600	0
Student Housing Phase 8	CSUMB	1		0	0	0	600	0	0	0	0	600	600		0	0	600	0
Student Housing Phase 9	CSUMB	1		0	0	0	0	600	0	0	0	0	600		0	0	0	600
Student Housing Phase 10	CSUMB	1		0	0	0	0	600	0	0	0	0	600		0	0	0	600
				0	400	1918	2518	1867	0	400	2318	4836	6702	0	400	1550	2150	1525
UCMBEST	**Jurisd**	**UC MBEST**		**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
New Residential																		
UC 8th Street	UC/MCO	2.6		0	0	0	429	325	0	0	0	429	754		0	0	165	125
UC East Campus - SF	UC/MCO	2.6		0	0	624	0	0	0	0	624	624	624		0	240	0	0
UC East Campus - MF	UC/MCO	2.6		0	0	0	0	0	0	0	0	0	0		0	0	0	0
				0	0	624	429	325	0	0	624	1053	1378	0	0	240	165	125
Seaside	**Jurisd**	**Seaside**		**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
Residential																		
Seaside Resort Housing	SEA	3.0		0	225	141	0	0	0	225	366	366	366		75	47	0	0
Seaside East	SEA	3.0		0	0	0	1500	1500	0	0	0	1500	3000		0	0	500	500
Nurses Barracks	SEA	3.0		0	120	0	0	0	0	120	120	120	120		40	0	0	0
Seaside Senior Living	SEA	1.5		0	216	0	0	0	0	216	216	216	216		144	0	0	0
Main Gate				0	0	0	0	0	0	0	0	0	0		0	0	0	0
Single Family Homes	SEA	3.0		0	420	0	0	0	0	420	420	420	420		140	0	0	0
Apartments	SEA	3.0		0	1350	90	0	0	0	1350	1440	1440	1440		450	30	0	0
Campus Town	SEA			0	0	0	0	0	0	0	0	0	0		0	0	0	0
Single Family Homes	SEA	3.0		0	552	180	1050	873	0	552	732	1782	2655		184	60	350	291
Apartments	SEA	3.0		0	0	0	1500	300	0	0	0	1500	1800		0	0	500	100
				0	2883	411	4050	2673	0	2883	3294	7344	10017	0	1033	137	1350	891
Del Rey Oaks	**Jurisd**	**Del Rey Oaks**		**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
New Residential																		
Del Rey Oaks																		
Residential	DRO	3.0		0	0	750	75	0	0	0	750	825	825		0	250	25	0
Golf Villas	DRO	3.5		0	0	0	0	0	0	0	0	0	0		0	0	0	0
Patio Homes	DRO	3.0		0	0	0	0	0	0	0	0	0	0		0	0	0	0
Condos	DRO	1.8		0	0	0	0	0	0	0	0	0	0		0	0	0	0
Workforce	DRO	2.5		0	0	0	0	0	0	0	0	0	0		0	0	0	0
Townhomes/Senior Casitas	DRO	2.0		0	0	0	0	0	0	0	0	0	0		0	0	0	0
RV Resort (Manager)	DRO	3.0		0	3	0	0	0	0	3	3	3	3		1	0	0	0
				0	3	750	75	0	0	3	753	828	828	0	1	250	25	0
US Army	**Jurisd**	**Army**		**2015**	**2020**	**2025**	**2030**	**2035**	**2015**	**2020**	**2025**	**2030**	**2035**	**2015**	**2020**	**2025**	**2030**	**2035**
Residential																		
Lower Stilwell Single Family	ARMY	3.0		0	450	0	0	0	0	450	450	450	450		150	0	0	0
Lower Stilwell Duplex	ARMY	3.0		0	0	0	0	0	0	0	0	0	0		0	0	0	0
				0	450	0	0	0	0	450	450	450	450	0	150	0	0	0
CA State Parks	**Jurisd**	**Army**		**2015**	**2020**	**2025**	**2030**	**2035**	**2015**	**2020**	**2025**	**2030**	**2035**	**2015**	**2020**	**2025**	**2030**	**2035**
Residential																		
Staff Housing	SP	3.0		0	0	9	0	0	0	0	9	9	9		0	3	0	0

Table C6: Projected Demands by Source, with Planned Recycled Use (AFY)

	Total Demands by Jurisdiction	2020	2025	2030	2035	2040	SVGB Allocation	RW Allocation
Ord	U.S. Army	409	461	471	471	471	1,562	
Ord	CSUMB	318	421	616	821	977	1,035	87
Ord	Del Rey Oaks	0	31	224	238	238	243	280
Ord	City of Monterey	0	0	130	130	130	65	
Ord	County of Monterey	227	436	436	522	522	710	134
Ord	UCMBEST	1	116	335	377	408	230	60
Ord	City of Seaside	339	839	1,032	1,435	1,698	1,012	453
Ord	State Parks and Rec.	0	7	9	9	9	45	
Ord	Marina Ord Comm.	446	1,125	1,638	1,757	1,809	1,340	345
Ord	Assumed Line Loss	190	348	348	348	348	348	68
Marina	Armstrong Ranch	0	550	680	680	680	920	
Marina	RMC Lonestar	0	0	0	0	0	500	
Marina	Marina Central	1,438	1,656	1,874	2,081	2,284	3,020	
	Subtotal - Ord	1,929	3,784	5,239	6,108	6,610	6,600	1,427
	Subtotal - Marina	1,438	2,207	2,553	2,761	2,964	4,440	0
	Total	3,367	5,991	7,792	8,869	9,574	11,040	1,427

Recycled Water Demand (1,2)						RW Phasing Tier 1	Tier 2	Tier 3
U.S. Army	0	0	0	0	0			47
CSUMB	0	70	110	150	190	70		241
Del Rey Oaks	0	0	10	10	10			
City of Monterey	0	0	0	0	0			
County of Monterey	0	30	39	39	39		39	
UCMBEST	0	0	60	60	60			59
City of Seaside	0	490	559	590	620	502	57	158
State Parks and Rec.	0	0	0	0	0			
Marina Ord Comm.	0	10	110	175	235	17	93	125
Assumed Line Loss								
Armstrong Ranch	0	0	40	40	40			40
RMC Lonestar	0	0	0	0	0			
Marina Central	0	0	26	77	77	26		51

Groundwater Demand (3)						Remaining GW
U.S. Army	409	461	471	471	471	1,091
CSUMB	318	352	506	671	787	248
Del Rey Oaks	0	31	214	228	228	15
City of Monterey	0	0	65	65	65	0
County of Monterey	227	406	397	483	483	227
UCMBEST	1	116	230	230	230	0
City of Seaside	339	349	473	845	1,012	0
State Parks and Rec.	0	7	9	9	9	36
Marina Ord Comm.	446	1,115	1,340	1,340	1,340	0
Assumed Line Loss	190	348	348	348	348	0
Armstrong Ranch	0	550	640	640	640	280
RMC Lonestar	0	0	0	0	0	500
Marina Central	1,438	1,656	1,848	2,004	2,207	813

3,209 total unused

Demand by Source	2020	2025	2030	2035	2040
Groundwater	3,367	5,391	6,540	7,335	7,821
Recycled Water	0	600	953	1,140	1,270
Desalinated Water(4,5)	0	0	299	394	483

Notes:

1 2025 value = Tier 1&2 Demand
2 Total capped at 600 AFY Phase 1 proejct
3 Maximum of projected potable demand or SVGB allocation
4 Desalinated demand is total minus groundwater and recycled
5 Or other potable supply

Appendix D: Notices and Letters to Public Agencies

The following notices and mailings were prepared during the development of this Urban Water Management Plan, and are included in this appendix.

1. 60-day Notice to Cities and Agencies, dated January 4, 2021 (sample letter)

2. Demand Projection Review to Cities, dated March 8, 2021 (sample letter)

3. Mailing list for notices and reviews

Items to be added in final adopted version:

4. Notice of plan availability for review, MCWD Website, www.mcwd.org

5. Newspaper Notices for Public Hearing, dated May 28 and June 6, 2021

6. Transmittal of Draft Plan to Cities and Agencies, dated May 20, 2021 (sample letter, same mailing list as item 3)

7. MCWD Board Agenda and Staff Report for Public Hearing, June 21, 20201 meeting

8. Transmittal of Adopted Plan to Cities and Agencies, dated July _, 2021(sample letter, same mailing list as item 3)

MARINA COAST WATER DISTRICT

11 RESERVATION ROAD, MARINA, CA 93933-2099
Home Page: www.mcwd.org
TEL: (831) 384-6131 FAX: (831) 883-5995

January 4, 2021

Mr. Layne Long, City Manager
City of Marina
211 Hillcrest Ave
Marina, CA 93933

Dear Mr. Long:

The Marina Coast Water District (MCWD) is preparing an updated Urban Water Management Plan (UWMP) for submittal to the California Department of Water Resources, pursuant to the Urban Water Management Planning Act, as codified in the California Water Code Sections 10610-10656. The last UWMP was adopted in 2016.

The updated plan is currently being drafted. Your will be contacted by our planning consultant for review and input on the development and water demand projections for the planning period, which runs to the year 2040. Our anticipated schedule for public review and plan adoption is:

April 22,2021	Publish public review draft of the UWMP
May 17, 2021	Conduct public hearing at the regularly scheduled MCWD Board meeting
May 31, 2021	Comment period closes
June 21, 2021	Adopt final UWMP at the regularly scheduled MCWD Board meeting

We will provide you a copy of the public review draft plan in April. We invite your input and comments on the UWMP. Please provide input to our consultant, Schaaf & Wheeler Consulting Civil Engineers, Attn: Andy Sterbenz, 3 Quail Run Circle, Suite 101, Salinas, CA, 93907. Andy may be contacted by phone at (831) 883-4848, or by e-mail at asterbenz@swsv.com. You may contact me by direct phone at (831) 883-5951, or e-mail pbreen@mcwd.org.

Sincerely,

Patrick J. Breen
Water Resources Manager

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS
3 Quail Run Circle, Suite 101
Salinas, CA 93907
831-883-4848
FAX 831-758-6328

March 8, 2021

Mr. Layne Long
City Manager
City of Marina
211 Hillcrest Ave
Marina, CA 93933

Subject: Marina Coast Water District, 2020 Urban Water Management Plan

Dear Mr. Long:

Schaaf & Wheeler is preparing the 2020 Urban Water Management Plan (UWMP) for the Marina Coast Water District. These plans are prepared by water suppliers every five years. Existing and projected water demands are compared to existing and planned water supplies to ensure there is sufficient supply available. A preliminary task in this effort is to coordinate with the District's customer jurisdictions to determine projected population and water demands. The 2020 UWMP will need to account for existing and forecasted water demands by five-year increments through the year 2040.

Water demands are generally a function of the size (acreage/square footage) or number of units in a development, depending on the type of land use, and a water demand unit factor that corresponds to that use. For each type of land use, Demand = Size x Unit Factor. Using this concept, Schaaf & Wheeler has prepared a preliminary estimate of water demands by land use type and by jurisdiction through 2035 as follows:

- Existing demands from the District's 2020 water usage records for each jurisdictional area.
- For developments that have approved Specific Plans, the water demand factors and total water demand estimates have been taken from the respective Water Supply Assessments (WSAs) for these Specific Plan areas.
- For in-fill development under approved General Plans or Master Plans (e.g., the City of Marina, CSUMB), the District's standard water demand factors have been used with the in-fill land use projections provided by the jurisdiction. (The District's standard water demand factors are attached as Table 1 to this letter.)
- For most of the future development within the District's planning area, including planned Fort Ord redevelopment though 2030, we have incorporated the Fort Ord Reuse Authority's (FORA) final development forecast form their FY 2019-20 CIP. The projected developments, generally by square footage or units, are then multiplied by the appropriate unit demand factors.

- For areas not reflected in the Fort Ord Reuse Authority forecast (Central Marina, Army Housing and State Parks), the projections build on the 2015 UWMP, adding data from any more recent studies or projects.

You will find attached to this letter several tables detailing the estimates of existing and projected water usage. The 2020 summary table (C.1) categorizes demand estimates by jurisdiction. The 2015 demand summary (C.2) is provided for reference. The more detailed table (C.3) shows the projected development over the next 20-years, by component parts. The

Please have the appropriate staff member(s) review the projected development for your jurisdiction and report any updates or discrepancies to us. Please note the following updates since 2015:

- The projections reflect the Water Supply Assessments (WSA) prepared for the Downtown Vitalization Specific Plan (DVSP) and the Airport Specific Plan
- In-fill development projection is reduced per the revisions made in the DVSP WSA
- Several older projects have been zeroed out (Airport Golf Course project, MPC Campus expansion)

The 2020 UWMP is projected to be completed in June 2021. We would appreciate your prompt review of and feedback on the projected water use figures. Even if no discrepancies are noted, please respond within thirty (30) days so that the UWMP preparation can proceed as scheduled.

Feel free to contact me at 831-883-4848, email asterbenz@swsv.com, with any questions regarding this matter. Thank you for your cooperation.

Sincerely,
Schaaf & Wheeler

Andrew A. Sterbenz, PE
Senior Project Manager

Attachments

Mailing List for Notices and Reviews

City of Marina	Mr. Layne Long, City Manager City of Marina 211 Hillcrest Ave. Marina, CA 93933
City of Seaside	Mr. Craig Malin, City Manager City of Seaside 440 Harcourt Ave. Seaside, CA 93955
City of Del Rey Oaks	Mr. Jeffrey Hoyne, Acting City Manager City of Del Rey Oaks 650 Canyon Del Rey Road Del Rey Oaks, CA 93940 Phone: 831-394-8511 Fax: 831-394-6421
City of Monterey	Mr. Hans Uslar, City Manager City of Monterey 580 Pacific Street Monterey, CA 93940
County of Monterey	Mr. Carl P. Holm, AICP County of Monterey, Director, Resource Management Agency 1441 Schilling Place, 2nd Floor-South Salinas, CA 93901
MCWRA	Mr. Brent Buche, General Manager Monterey County Water Resources Agency 1441 Schilling Place, North Bldg Salinas, CA 93901
M1W	Mr. Paul Sciuto, General Manager Monterey One Water 5 Harris Court, Bldg D Monterey, CA 93940

CSUMB	Mr. Marcel Forte CSUMB, Associate Vice President for Facilities Management 100 Campus Center, CSU Monterey Bay Seaside CA 93955-8001 (831) 582-4796 mforte@csumb.edu Alternate POC: Anya Spear, aspear@csumb.edu, 582-5098
UCMBEST	Mr. Stephen Matarazzo Planning Director, UC MBEST Center 3180 Imjin Road, Suite 104 Marina. CA 93933 Phone: 831.521.7273 smataraz@ucsc.edu
US Army	Mr. Oscar Ordonez Presidio of Monterey, Directorate of Public Works IMPM-PW-H Attn: Oscar Ordonez 4463 Gigling Road, Rm 304 Seaside, CA 93955
State Parks	Ms. Brent Marshall, Superintendent California State Parks, Monterey District 2211Garden Road Monterey, CA 93940
CalAm	Mr. Chris Cook General Manager, Monterey District California American Water 511 Forest Lodge Road, Suite 100 Pacific Grove, CA 93950
MPWMD	Mr. David J Stoldt Monterey Peninsula Water Management District 5 Harris Court, Bldg G Monterey, CA 93940

Appendix E: Technical Memoranda

The following technical memoranda were prepared as interim reports during the development of this Urban Water Management Plan, and are included in this appendix.

1. District Population Estimate, dated 4/26/2021
2. Water Allocations by Jurisdiction, dated 4/30/2021
3. MCWRA Zones of Benefit and Assessment, dated 4/30/2021
4. MCWD Seismic Risk Assessment, 5/14/2021

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

3 Quail Run Circle, Suite 101
Salinas, CA 93907
t. 831-883-4848
asterbenz@swsv.com

MEMORANDUM

TO:	Patrick Breen and Paul Lord Marina Coast Water District	DATE:	April 26, 2021
FROM:	Andrew Sterbenz, PE	JOB#:	MCWD.46.17:010
SUBJECT:	2020 Population Estimate for the Urban Water Management Plan Update		

The purpose of this memorandum is to summarize the methodology and source data used to develop the year 2020 population by service area for the Marina Coast Water District (MCWD) 2020 Urban Water Management Plan (UWMP).

2020 Population

MCWD serves the City of Marina and the former Fort Ord, which includes portions of Seaside, Del Rey Oaks, City of Monterey and unincorporated Monterey County. Results from the 2020 Federal Census have not yet been published, so the population estimate for the year 2020 was derived from the estimates published by the California Department of Finance, Demographic Research Unit.

In February 2020, the Demographic Research Unit published a Special District Population Estimate for MCWD, covering the years 2010 to 2019 (attached). The estimated population within the MCWD service area on 1/1/2019 was 36,661 persons. In May 2020, the Demographic Research Unit published the Population Estimates Cities, Counties and State, 2011-2020 (Table 1). Both Monterey County and the City of Marina were shown to have a slight population decrease from 1/1/2019 to 1/1/2020. The County decreased from 441,304 to 441,143, a change of -161 persons or -0.04%. The City of Marina decreased from 22,688 to 22,321, a change of -347 persons or -1.6%.

The percentage change within the MCWD service area is assumed to match the County average, since new homes were being added within the Ord Community. The estimated population is calculated as

0.9996 x 36,661 = 36,646 persons total
- 22,321 persons in Marina
14,325 persons in Seaside and unincorporated Monterey County

Due to the way the Demographic Research Unit estimate is prepared, a split between the Central Marina and Ord Community Service Areas cannot be made (Central Marina and Marina-Ord are combined in a single value).

The 2020 U.S. Census results were due to be published in April 2021, but the release of detailed data has been delayed. If the 2020 census results are published before the UWMP is adopted, the 2020 population can easily be updated. The MCWD service area is the occupied portion of nine Census Tracts, as listed in Table 2 and shown in Figure 1. The population for Central Marina is the sum of Census Tracts 124.01, 142.02, 143.01 and 143.02. The Ord Community population is the sum of Census Tracts 141.02, 141.04, 141.05, 141.08 and 141.09. Note that the Census Tracts do not always align with city limits, so calculating jurisdictional populations requires aggregating data at the census block level. A small portion of the former Fort Ord (south of South Boundary Road) is within Census Tract 132, but that area is currently undeveloped so it may be omitted.

Population Growth Projection

The population growth projection method used for the UWMP is persons per dwelling unit times the number of dwelling units projected to be added. This method has been used for the two previous UWMP cycles and is consistent with the water demand estimation method. It produces a higher estimate than the regional estimates produced by the Association of Monterey Bay Area Governments (AMBAG) or the Demographic Research Unit, because the redevelopment projection used are optimistic. The AMBAG and Demographic Research Unit population projections are attached for information.

Attachments:

Letter from California Department of Finance, Demographic Research Unit, Special District Population Estimate, Marina Coast Water District, dated 2/12/2020
Table 1: Excerpt from DOF Table E-4, Population
Table 2: 2020 U.S. Census Tracts within MCWD Service Area
Figure 1: Excerpt from U.S. Census Tract Reference Map
Table 3: Excerpt from AMBAG 2022 Regional Growth Forecast
Table 4: Excerpt from CA Dept of Finance Report P-2A

References:

Association of Monterey Bay Area Governments, Final 2022 Regional Growth Forecast, dated 11/18/2020

California Department of Finance, Demographic Research Unit:

Table E-4, Population Estimate for Cities, Counties and State, 2011-2020, published May 1, 2020

Report P-2A, Total Estimated and Projected Population for California and Counties: July 1, 2010 to 2060, published March 2021

Marina Coast Water District 2010 Urban Water Management Plan, prepared by Schaaf & Wheeler, July 2011

Marina Coast Water District 2015 Urban Water Management Plan, prepared by Schaaf & Wheeler, July 2016

U.S Dept. of Commerce, U.S. Census Bureau, 2020 Census - Census Tract Reference Map: Monterey County, CA

DEPARTMENT OF FINANCE
GAVIN NEWSOM - GOVERNOR
915 L STREET ■ SACRAMENTO CA ■ 95814-3706 ■ WWW.DOF.CA.GOV

February 12, 2020

Mr. Keith Van Der Maaten
General Manager
Marina Coast Water District
11 Reservation Rd.
Marina, CA 93933-2099

Subject: **Special District Population Estimate, Marina Coast Water District**

Dear Mr. Van Der Maaten:

The California Department of Finance (Finance) has prepared the special district population estimate requested by the Marina Coast Water District as of January 1, 2019. Pursuant to Article XIIIB of the California Constitution, the District's population and housing information is as follows:

Marina City + Fort Ord Community

	Total Population	Household Population	Group Quarters Population	Housing Units	Households	Vacant Units	Vacancy Rate	Persons Per Household	Population Percent Change
4/1/2010 Census	31,160	28,456	2,704	11,736	10,769	967	8.24%	2.642	
Change 4/1/2010-12/31/2010	166	205	0	1	-9	10			
1/1/2011 Estimate	31,326	28,661	2,665	11,737	10,760	977	8.33%	2.664	0.533
Change 1/1/2011-12/31/2011	416	309	0	1	-6	7			
1/1/2012 Estimate	31,742	28,970	2,772	11,738	10,753	985	8.39%	2.694	1.328
Change 1/1/2012-12/31/2012	242	226	0	0	-25	25			
1/1/2013 Estimate	31,984	29,196	2,788	11,738	10,728	1,010	8.60%	2.721	0.762
Change 1/1/2013-12/31/2013	329	337	0	81	89	-8			
1/1/2014 Estimate	32,313	29,533	2,780	11,819	10,817	1,002	8.48%	2.730	1.029
Change 1/1/2014-12/31/2014	1,081	771	310	228	222	6			
1/1/2015 Estimate	33,394	30,304	3,090	12,047	11,039	1,008	8.37%	2.745	3.345
Change 1/1/2015-12/31/2015	903	534	369	145	104	41			
1/1/2016 Estimate	34,297	30,838	3,459	12,192	11,143	1,049	8.60%	2.767	2.704
Change 1/1/2016-12/31/2016	660	414	246	48	94	-46			
1/1/2017 Estimate	34,957	31,252	3,705	12,240	11,237	1,003	8.20%	2.781	1.924
Change 1/1/2017-12/31/2017	716	683	33	291	261	30			
1/1/2018 Estimate	35,673	31,935	3,738	12,531	11,497	1,034	8.25%	2.778	2.048
Change 1/1/2018-12/31/2018	988	1,098	-110	390	353	37			
1/1/2019 Estimate	36,661	33,033	3,628	12,921	11,850	1,071	8.29%	2.788	2.770

Enclosed is an invoice in the amount of $1,000.00 for the cost of preparing the 2010 Census benchmark and 2019 special district population estimate for your jurisdiction.

If you require further information regarding this special district population estimate, please contact Doug Kuczynski at (916) 323-4086.

Sincerely,

Doug Kuczynski
Research Program Specialist
Demographic Research Unit

Enclosure

Table 1: Excerpt from Table E-4 Population Estimates for Cities, Counties, and State 2011-2020 with 2010 Benchmark

COUNTY/CITY	4/1/2010	1/1/2011	1/1/2012	1/1/2013	1/1/2014	1/1/2015	1/1/2016	1/1/2017	1/1/2018	1/1/2019	1/1/2020
California											
Incorporated Total	30,764,188	31,086,714	31,506,091	31,858,521	32,110,077	32,385,073	32,628,187	32,870,570	33,051,381	33,163,325	33,256,246
Balance Of State Total	6,489,768	6,474,910	6,418,570	6,411,343	6,446,654	6,485,077	6,503,120	6,528,132	6,535,265	6,532,051	6,526,624
State Total	37,253,956	37,561,624	37,924,661	38,269,864	38,556,731	38,870,150	39,131,307	39,398,702	39,586,646	39,695,376	39,782,870
Monterey County											
Carmel-By-The-Sea	3,722	3,726	3,752	3,790	3,807	3,854	3,896	3,915	3,920	3,939	3,949
Del Rey Oaks	1,624	1,631	1,647	1,652	1,657	1,663	1,672	1,678	1,671	1,674	1,662
Gonzales	8,187	8,226	8,308	8,376	8,408	8,441	8,513	8,551	8,535	8,566	8,506
Greenfield	16,330	16,413	16,612	16,997	17,095	17,172	17,650	18,013	18,023	18,109	18,284
King City	12,874	12,958	13,122	13,343	13,421	13,736	14,001	14,214	14,327	14,540	14,797
Marina	19,718	19,771	20,084	20,247	20,313	21,057	21,589	22,051	22,303	22,688	22,321
Monterey	27,810	28,027	28,522	28,237	28,149	28,086	28,181	28,234	28,016	27,992	28,170
Pacific Grove	15,041	15,107	15,224	15,398	15,411	15,460	15,457	15,489	15,355	15,360	15,265
Salinas	150,441	151,167	153,445	156,084	157,332	158,059	160,220	161,124	161,446	162,353	162,222
Sand City	334	335	337	338	341	361	364	365	380	383	385
Seaside	33,025	32,826	33,287	33,512	33,500	33,815	33,781	33,703	33,705	33,047	33,537
Soledad	25,738	26,293	26,295	25,500	24,945	24,597	25,311	25,726	25,593	25,745	25,301
Balance Of County	100,213	100,796	101,986	102,494	103,354	104,009	104,765	105,660	105,919	106,908	106,744
Incorporated	314,844	316,480	320,635	323,474	324,379	326,301	330,635	333,063	333,274	334,396	334,399
County Total	415,057	417,276	422,621	425,968	427,733	430,310	435,400	438,723	439,193	441,304	441,143

Source: California Department of Finance, Demographic Research Unit, released May 1, 2020

Table 2: 2020 U.S. Census Tracts within MCWD Service Area				
Census Tract	**Service Area**	**Jurisidction**	**Subdivision**	**Description**
141.02	Ord Community	Marina	Dunes, Sea Haven, Abrams, Preston, Airport	Marina-Ord minus CSUMB
141.04	Ord Community	Marina, Seaside, County	CSUMB	CSUMB Campus
141.05	Ord Community	County	CSUMB, East Garrison	County N. of Inter-Garrison
141.08	Ord Community	Seaside	POM Hayes & Stilwell, Seaside Highlands, FODSP	Seaside-Ord W. of GJMB
141.09	Ord Community	Seaside, County	POM Fitch & Marshall, East Garrison	Ord W of GJMB, S. of Inter-Garrison
142.01	Central Marina	Marina	Central Marina	South of Carmel Ave
142.02	Central Marina	Marina	Central Marina	Btwn Carmel and Reservaton
143.01	Central Marina	Marina	Central Marina	West of Del Monte
143.02	Central Marina	Marina	Central Marina	E. of Del Monte, N. of Reservation

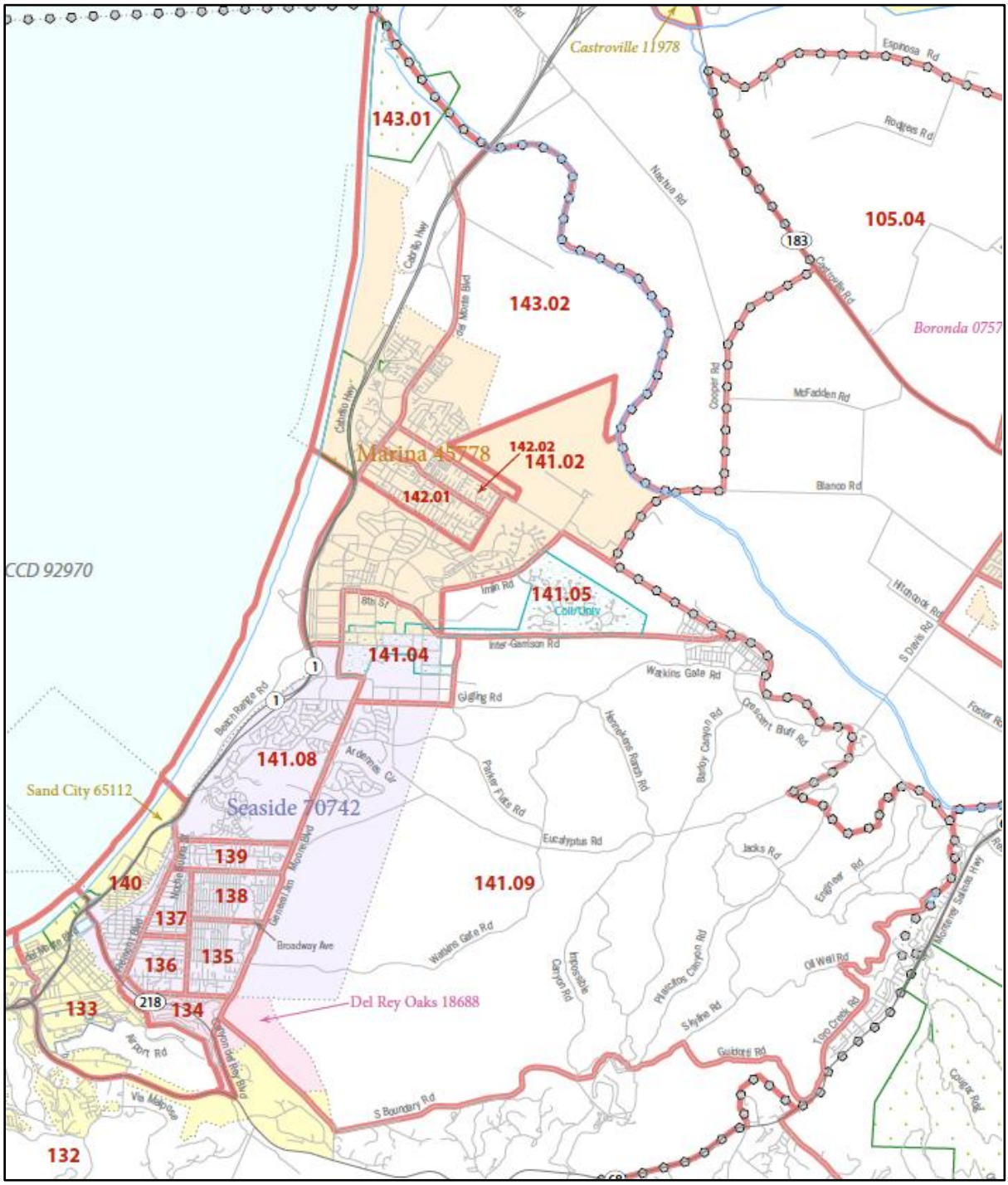

Figure 1: Excerpt from 2020 Census - Census Tract Reference Map: Monterey County, CA

Table 3: Excerpt from AMBAG 2022 Subregional Growth Forecast

	POPULATION								Change 2015-2045	
	2010	2015	2020	2025	2030	2035	2040	2045	Numeric	%
AMBAG Region	732,708	762,241	774,729	800,726	824,992	842,189	857,828	869,776	107,535	14%
Monterey County	**415,057**	**430,310**	**441,143**	**452,761**	**467,068**	**476,028**	**483,884**	**491,443**	**61,133**	**14%**
Carmel-By-The-Sea	3,722	3,854	3,949	3,946	3,954	3,964	3,974	3,984	130	3%
Del Rey Oaks	1,624	1,663	1,662	1,693	1,734	1,859	2,330	2,650	987	59%
Gonzales	8,187	8,441	8,506	9,650	13,492	14,630	15,398	15,711	7,270	86%
Greenfield	16,330	17,172	18,284	19,342	19,734	19,961	20,202	20,433	3,261	19%
King City	12,874	13,736	14,797	15,376	16,101	16,689	16,881	17,064	3,328	24%
Marina	19,718	21,057	22,321	23,723	25,126	26,713	28,433	30,044	8,987	43%
Marina balance	19,084	20,037	21,371	22,293	22,841	23,238	23,768	24,237	4,200	21%
CSUMB	634	1,020	950	1,430	2,285	3,475	4,665	5,807	4,787	469%
Monterey	27,810	28,086	28,170	28,044	28,650	29,032	29,342	29,639	1,553	6%
Monterey balance	23,583	24,095	24,749	24,623	25,229	25,611	25,921	26,218	2,123	9%
DLI & Naval	4,227	3,991	3,421	3,421	3,421	3,421	3,421	3,421	-570	-14%
Pacific Grove	15,041	15,460	15,265	15,290	15,395	15,530	15,676	15,817	357	2%
Salinas	150,441	158,059	162,222	166,226	170,459	173,393	175,358	177,128	19,069	12%
Sand City	334	361	385	430	516	756	1,012	1,198	837	232%
Seaside	33,025	33,815	33,537	34,497	35,107	35,634	36,582	38,316	4,501	13%
Seaside balance	26,836	25,835	26,345	27,285	27,850	28,317	29,205	30,881	5,046	20%
Fort Ord	4,473	4,163	3,083	3,083	3,083	3,083	3,083	3,083	-1,080	-26%
CSUMB	1,716	3,817	4,109	4,129	4,174	4,234	4,294	4,352	535	14%
Soledad	25,738	24,597	25,301	26,112	26,824	27,697	28,419	29,133	4,536	18%
Soledad balance	15,690	16,298	17,190	18,001	18,713	19,586	20,308	21,022	4,724	29%
SVSP & CTF	10,048	8,299	8,111	8,111	8,111	8,111	8,111	8,111	-188	-2%
Balance Of County	100,213	104,009	106,744	108,432	109,976	110,170	110,277	110,326	6,317	6%
San Benito County	**55,269**	**58,138**	**62,353**	**69,324**	**73,778**	**77,638**	**80,788**	**83,366**	**25,228**	**43%**
Hollister	34,928	37,314	40,646	42,604	43,327	44,421	45,345	45,599	8,285	22%
San Juan Bautista	1,862	1,945	2,112	2,269	2,315	2,374	2,410	2,436	491	25%
Balance Of County	18,479	18,879	19,595	24,451	28,136	30,843	33,033	35,331	16,452	87%
Santa Cruz County	**262,382**	**273,793**	**271,233**	**278,641**	**284,146**	**288,523**	**293,156**	**294,967**	**21,174**	**8%**
Capitola	9,918	10,224	10,108	10,485	10,794	10,957	11,049	11,126	902	9%
Santa Cruz	59,946	64,223	64,424	68,845	72,218	75,257	78,828	79,534	15,311	24%
Santa Cruz balance	43,614	46,947	45,324	47,845	49,118	49,957	50,828	51,534	4,587	10%
UCSC	16,332	17,276	19,100	21,000	23,100	25,300	28,000	28,000	10,724	62%
Scotts Valley	11,580	11,946	11,693	11,718	11,837	11,867	11,868	12,010	64	1%
Watsonville	51,199	52,410	51,515	52,918	54,270	55,138	55,786	56,344	3,934	8%
Balance Of County	129,739	134,990	133,493	134,675	135,027	135,304	135,625	135,953	963	1%

Source: Association of Monterey Bay Area Governments, Final 2022 Regional Growth Forecast, 11/18/2020

Table 4: Excerpt from Report P-2A, Total Estimated and Projected Population for California and Counties: July 1, 2010 to 2060

	Estimates			Projections							
Geography	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
California	37,366,938	39,007,121	39,782,419	40,808,001	41,860,549	42,718,403	43,353,414	43,785,947	44,049,015	44,176,739	44,228,057
Alameda County	1,516,721	1,622,375	1,671,855	1,725,911	1,785,496	1,836,364	1,877,766	1,909,308	1,933,085	1,948,730	1,959,165
Alpine County	1,175	1,154	1,115	1,153	1,185	1,171	1,135	1,115	1,047	1,020	1,006
Amador County	37,678	36,168	37,577	38,679	39,394	39,756	39,743	39,539	39,360	39,281	39,465
Butte County	220,359	224,023	206,362	230,691	236,874	242,240	246,453	249,457	252,567	255,389	258,144
Calaveras County	45,542	44,907	44,286	44,443	44,919	45,087	44,860	44,368	43,966	43,874	44,106
Colusa County	21,330	21,612	22,075	23,163	23,670	24,164	24,471	24,653	24,635	24,604	24,652
Contra Costa County	1,052,554	1,118,662	1,149,800	1,197,341	1,244,173	1,283,681	1,312,536	1,331,431	1,342,620	1,347,877	1,351,284
Del Norte County	28,409	26,847	27,193	26,754	26,750	26,610	26,498	26,226	25,975	25,747	25,720
El Dorado County	181,151	182,583	192,012	193,540	200,004	205,978	210,196	213,236	215,511	217,995	222,219
Fresno County	933,249	979,625	1,026,358	1,053,955	1,096,638	1,135,837	1,170,525	1,200,150	1,226,158	1,249,858	1,272,559
Glenn County	28,233	28,286	29,507	29,510	30,068	30,562	30,769	30,890	30,881	30,801	30,708
Humboldt County	135,102	134,596	132,706	134,057	133,738	132,602	130,791	128,450	126,261	124,054	121,972
Imperial County	175,401	184,460	188,090	197,859	206,486	214,817	222,307	229,206	235,339	240,918	246,235
Inyo County	18,547	18,635	18,429	18,055	18,020	17,864	17,552	17,204	16,671	16,112	15,653
Kern County	842,069	881,129	912,975	961,629	1,019,221	1,075,952	1,127,781	1,174,771	1,217,086	1,256,599	1,295,502
Kings County	152,398	149,455	154,745	159,733	165,752	171,517	176,940	181,726	185,868	189,652	192,955
Lake County	65,056	64,690	63,771	64,259	64,764	65,237	65,505	65,769	66,151	66,737	67,561
Lassen County	34,789	30,200	28,872	29,526	28,894	28,106	27,293	26,400	25,569	24,818	24,082
Los Angeles County	9,845,931	10,155,982	10,171,593	10,258,572	10,322,678	10,331,803	10,286,350	10,193,978	10,061,774	9,891,603	9,697,634
Madera County	150,182	154,166	158,794	168,293	178,070	187,842	197,025	205,517	213,456	220,790	228,393
Marin County	252,655	262,041	258,956	257,394	257,024	256,131	253,549	249,270	243,838	237,458	231,338
Mariposa County	18,245	18,086	17,778	17,574	17,631	17,636	17,490	17,332	17,199	17,060	17,073
Mendocino County	87,755	88,091	87,491	88,746	89,232	89,106	88,205	86,956	85,573	84,360	83,305
Merced County	256,785	268,843	284,761	298,184	314,690	330,805	346,085	359,888	372,461	384,691	396,956
Modoc County	9,688	9,542	9,416	9,320	9,134	8,896	8,567	8,307	8,028	7,803	7,587
Mono County	14,020	13,744	13,447	13,985	14,118	14,130	14,009	13,726	13,367	12,871	12,422
Monterey County	416,005	434,604	441,290	453,956	464,124	471,901	477,265	480,694	481,305	479,785	476,734
Napa County	136,587	141,390	138,711	140,748	143,223	145,444	146,602	146,641	146,050	144,968	144,261
Nevada County	98,709	97,836	97,439	99,131	101,004	102,479	103,193	103,639	103,775	104,905	106,944
Orange County	3,016,796	3,154,363	3,190,832	3,249,431	3,291,863	3,314,115	3,315,726	3,299,179	3,268,048	3,222,492	3,166,309
Placer County	350,664	371,896	397,469	414,544	437,655	458,999	476,434	490,609	501,591	512,040	522,567
Plumas County	19,969	18,225	18,246	18,864	18,493	17,974	17,289	16,534	15,924	15,496	15,277
Riverside County	2,198,479	2,327,112	2,449,299	2,593,906	2,728,068	2,840,775	2,933,038	3,004,816	3,059,095	3,099,770	3,129,833
Sacramento County	1,422,960	1,488,917	1,562,242	1,615,713	1,687,220	1,751,463	1,808,307	1,857,394	1,901,507	1,941,201	1,979,204
San Benito County	55,527	58,464	62,789	63,604	66,355	68,908	70,866	72,395	73,558	74,607	75,620
San Bernardino County	2,044,890	2,118,684	2,184,112	2,273,291	2,368,002	2,456,262	2,536,592	2,611,160	2,681,796	2,750,180	2,818,707
San Diego County	3,104,732	3,275,036	3,352,145	3,398,922	3,461,883	3,508,919	3,543,663	3,567,892	3,583,006	3,587,294	3,583,085
San Francisco County	810,504	869,403	899,891	913,369	936,862	956,232	972,787	988,709	1,004,943	1,022,329	1,039,403
San Joaquin County	688,464	727,038	776,068	810,495	853,661	891,642	923,341	948,975	968,662	984,240	996,241
San Luis Obispo County	269,450	276,584	276,151	281,643	284,729	285,918	284,346	280,262	274,677	268,911	263,650
San Mateo County	721,354	765,820	775,132	787,161	800,006	808,253	813,098	815,187	814,643	811,379	805,479
Santa Barbara County	424,109	443,640	451,329	460,973	469,717	476,193	479,622	480,831	479,532	476,750	473,067
Santa Clara County	1,791,215	1,924,097	1,962,251	2,030,957	2,105,066	2,175,951	2,241,634	2,298,147	2,343,610	2,378,827	2,408,169
Santa Cruz County	262,813	274,514	270,067	279,617	284,670	288,195	289,843	290,001	289,138	288,190	287,606
Shasta County	177,376	178,496	177,692	178,006	180,498	182,530	183,482	183,672	184,110	184,511	185,208
Sierra County	3,233	3,152	3,117	3,037	2,903	2,862	2,757	2,673	2,591	2,491	2,456
Siskiyou County	44,855	44,540	43,792	42,979	42,707	42,195	41,434	40,605	39,874	39,471	39,395
Solano County	412,862	428,906	440,198	460,736	479,372	496,286	510,412	521,832	530,874	538,355	545,126
Sonoma County	484,055	501,512	491,134	509,995	521,303	529,766	533,600	533,191	529,338	524,423	519,518
Stanislaus County	516,583	536,530	555,955	581,308	606,128	627,883	645,069	658,448	668,224	675,118	680,311
Sutter County	94,888	96,796	101,160	101,757	105,245	108,595	111,246	113,752	115,895	118,068	120,143
Tehama County	63,380	63,396	65,266	64,566	65,570	66,502	66,922	67,274	67,634	68,039	68,705
Trinity County	13,798	13,556	13,291	13,041	12,890	12,661	12,387	12,235	12,180	12,286	12,470
Tulare County	442,517	463,671	480,788	496,657	516,810	535,463	551,563	565,075	575,525	584,163	591,539
Tuolumne County	55,240	53,531	52,353	51,538	51,530	51,319	50,807	50,015	49,356	48,982	48,911
Ventura County	824,935	848,687	841,439	859,528	872,856	882,506	885,628	882,363	873,594	861,671	849,091
Yolo County	202,619	212,374	221,718	235,943	248,815	261,579	273,739	285,462	296,338	306,651	316,740
Yuba County	72,346	74,449	79,089	80,259	82,698	84,739	86,321	87,412	88,176	88,444	88,592

Projections Prepared by Demographic Research Unit, California Department of Finance, March 2021

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MEMORANDUM

TO:	File	DATE:	April 30, 2021
FROM:	Andrew Sterbenz, PE	JOB#:	MCWD.46.17:010
SUBJECT:	Jurisdictional Water Allocations within the Ord Community		

The purpose of this memorandum is to summarize the potable water allocations within the Marina Coast Water District Ord Community service area, both from the Fort Ord Reuse Authority (FORA) to the respective jurisdictions and from the jurisdictions to specific projects. This is an update to the summary memorandum dated 5/18/2016 prepared for the MCWD 2015 Urban Water Management Plan.

Groundwater Supply

Potable water supply for the former Fort Ord (MCWD Ord Community service area) comes from the Monterey Subbasin of the Salinas Valley Groundwater Basin (SVGB). The Monterey Subbasin is managed by the Marina Coast Water District Groundwater Sustainability Agency, and the larger SVGB is managed by the Salinas Valley Basin Groundwater Sustainability Agency. Prior to the Sustainable Groundwater Management Act the SVGB was managed by the Monterey County Water Resources Agency (MCWRA). MCWRA operates two reservoirs which capture winter runoff and maintain year-round flow in the Salinas River, which recharges the groundwater basin. MCWRA established Zones 2 and 2A as benefit assessment zones to finance the construction and operation of Lakes Nacimiento and San Antonio, respectively. Under the "Agreement between the United States of America and the Monterey County Water Resources Agency concerning Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency, Agreement No. A-06404", dated September 21, 1993, the U.S. Army may withdraw up to 6,600 acre-feet per year from the Salinas Valley Groundwater Basin for use on the former Fort Ord, including those portions of the former Fort Ord that overly the Seaside Groundwater Basin. The MCWD Central Marina service area was similarly annexed into Zones 2/2A in 1996.

On October 24, 2001, the United States quitclaimed the water and sewer infrastructure on the former Fort Ord, including the SVGB groundwater allocation, through FORA to the Marina Coast Water District. The U.S. retained 1,729 AFY for use in the Presidio of Monterey Annex (military housing and facilities within the Ord Community) and the Bureau of Land Management. Under agreements between the U.S. Army and FORA (2000), and between MCWD and FORA (1998), the FORA Board allocated the remaining water supply among the land use jurisdictions in the Ord Community. MCWD owns and operates the water system and the underlying groundwater extraction rights, except for the rights reserved to the U.S. Army. MCWD provides water and sewer service to the Presidio of Monterey Annex under direct contract with the U.S. Army.

Allocations to Land Use Jurisdictions

The original and current allocations of potable water supply among the Ord Community Land Use Jurisdictions is shown in Table 1, below. FORA initially allocated supply among the jurisdictions on April 12, 1996, under the Development and Reuse Management Plan, adopted as part of the Base Reuse Plan. At that time, FORA held out a strategic reserve of 785 AFY. On August 14, 1998, the allocations were adjusted, and the strategic reserve reduced to 755 AFY. In 2001, the U.S. Army allocated 38 AFY to Brostram Park in Seaside, reducing the retained total to 1,691 AFY. In 2005, the U.S. Army allocated 114 AFY to Seaside as part of a real estate exchange between the Army and the City, reducing the retained total to 1,577 AFY. In 2018, the U.S. Army transferred 15 AFY to the City of Marina for the Veterans Transition Center housing expansion, reducing the retained total to 1,562 AFY. As the jurisdictions developed specific plans for the redevelopment of Ord Community, FORA made several "loans" from the strategic reserve to jurisdictions. On January 12, 2007, FORA made these loans permanent. FORA ceased to exist on July 1, 2020, so future transfers between jurisdictions must be tracked by MCWD.

Table 1. Salinas Valley Groundwater Allocations

Jurisdiction	Original Allocation (1996) Acre-feet/year	Current Allocation (2007)[2] Acre-feet/year
U.S. Army (retained)[1,2]	1,410	1,562
City of Seaside	710	1,012
City of Del Rey Oaks	75	242.5
City of Monterey	65	65
City of Marina[2]	1,185	1,340
Monterey County	545	710
CSUMB	1,055	1,035
UCMBEST	165	230
State Parks	45	45
County/Marina Sphere (Polygon 8a)	50	10
Line Loss	530	348.5
FORA Strategic Reserve[3]	785	0

Notes:

1. The U.S. Army retained 1,729 AFY of groundwater rights for the POM Annex, but it is accounted for in the original allocation table as 1,410 AFY for POM Annex use, 160 AFY as a portion of the strategic reserve, and 159 AFY (10%) as a portion of the line loss allowance.
2. The current total reflects a 15 AFY transfer made in 2018 from the US Army to the City of Marina.
3. The original strategic reserve included 160 AFY for the POM Annex, 125 AFY for CSUMB, 230 AFY for Seaside and 270 AFY of unencumbered supply.

The County/Marina Sphere of influence area (included in the table above) is defined as County Planning Area 8a in the Base Reuse Plan. This area is bounded by Imjin Parkway on the north, Inter-Garrison Road on the south, the Marina City Limit on the west (7th Avenue alignment) and the CSUMB property on the east (includes a short portion of Abrams Drive). This is generally the landfill parcel, but it includes the Ord Market (former shoppette) at the corner of Imjin Parkway and Abrams Drive. This area is included in the Monterey County total in the UWMP and in Table 2.

The existing Bayonet/Black Horse Golf Courses on the former Fort Ord uses up to 540 AFY for landscape irrigation. This water is supplied from existing wells in the Seaside Groundwater Basin. The Base Reuse Plan assumed that supply from these wells would continue indefinitely, or until it could be replaced with recycled water. In 2005 the Seaside Groundwater Basin was adjudicated, which increased the urgency to convert the system to recycled water.

The assumed line loss of 348.5 AFY represents 5.3% of the total water allocation, which is an ambitious target. Actual water losses over the last five years have ranged from 6% to 10%. Losses include unmetered uses such as line flushing and hydrant flow testing.

Sub-Allocations by Land Use Jurisdictions

MCWD maintains a listing of water sub-allocations made by land use jurisdictions to specific projects. When publishing a water supply assessment report, the list is updated for the affected jurisdiction(s) and included in the report. The current sub-allocation table is attached.

Some of the water uses within the Ord Community were on-going at the time of the Base Closure (such as the public schools) or transitioned to new uses without formal allocations (such as the conversion of Preston Park military housing to affordable public housing). The values for existing uses that do not have formal allocations reflect the peak demand years.

Two jurisdictions, the City of Del Rey Oaks and the City of Monterey, have not yet formally approved development in the Ord Community, and therefore have not made any sub-allocations. Several other jurisdictions (CSUMB, UCMBEST, U.S. Army and State Parks) retain all of their property under single ownership and have not needed to sub-allocate water supply to internal projects. In 2007, State Parks allocated 5.5 AFY for the American Youth Hostel project in Seaside. In 2014, the U.S. Army allocated 5 AFY to the California Central Coast Veterans Cemetery Project in Seaside, with an additional 10 AFY for the first two years for landscape establishment. These project allocations are reflected in the summary table.

In the City of Marina, sub-allocations have been made for three specific plan areas: Marina Heights (now called Sea Haven), University Villages (now called Dunes on Monterey Bay) and Cypress Knolls. Project-specific allocations have also been made for the Monterey Peninsula College 12th Street Campus, the Rock Rose Gardens housing project, and the Promontory apartments. The table also includes several projects which are subsets of Specific Plan allocations.

In the City of Seaside, sub-allocations have been made to three specific plan areas: Seaside Highlands, Seaside Main Gate and Campus Town. Project-specific allocations have also been made for the Monterey College of Law, Monterey Peninsula College, Chartwell School, the American Youth Hostel and Seaside Senior Living. The water allocations for Sun Bay Apartments and Bay View Mobile Home Park were established through the MOA between the USA and FORA, as amended in 2001. The Water Supply Assessment for the Amended Seaside Main Gate Project identified a demand range of 250.4 AFY, but the City allocation was only for the initial retail portion of that project.

For the Seaside Campus Town Specific Plan, the City's Ordinance 1080 which approved the Specific Plan allocated 180.6 AFY of SVGB supply to the project, 45.83 AFY of recycled water and an additional 261

AFY of potable supply to be realized by providing recycled water to off-set existing landscape irrigation use within the City. A portion of the off-setting use will occur on the Bayonet/Blackhorse Golf Courses which are irrigated from wells in the Seaside Groundwater Basin. The mechanism for conveying Seaside Basin groundwater to MCWD has not yet been identified.

In Monterey County, a sub-allocation was made for the East Garrison Specific Plan area, and project-specific allocations were made for Monterey Peninsula College and for the Ord Market. The Ord Market is within the Marina Sphere sub-area.

Attachments

Table 2, Sub-Allocations by Jurisdiction

Table 3.11-2, Allocation of Existing Potable Water Supply by Jurisdiction, from the FORA Development and Resource Management Plan

References

Agreement between the United States of America and the Monterey County Water Resources Agency Concerning Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency, Agreement No. A-06404, September 21, 1993.

Fort Ord Reuse Authority, Development and Resource Management Plan portion of the Fort Ord Base Reuse Plan, 1997

Fort Ord Reuse Authority, Board Agenda Packet for January 12, 2007, item 8b: Resolution of the Authority Board changing the 150 AFY loans granted to Del Rey Oaks, Seaside, Marina, and Monterey County in October 1998 to permanent additions to their water allocations

Memorandum of Agreement Between the United States of America, Acting By and Through the Secretary of The Army, United States Department of the Army and the Fort Ord Reuse Authority for the Sale of Portions of the Former Fort Ord, Located in Monterey County, California, June 20, 2000

Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands, 1996

Assignment of Easements on Former Fort Ord and Ord Military Community, County of Monterey, and Quitclaim Deed for Water and Wastewater Systems, between Fort Ord Reuse Authority (Grantor) and Marina Coast Water District (Grantee), October 24, 2001

Table 2. Ord Community Water Sub-Allocations by Jurisdiction

Ord Community Land Use Jurisdiction	SVGB Allocation (AFY)	Suballocations To	Suballocation Amount (AFY)	Resolution No.	Date	Notes:
U.S. Army	1,562					
		Exisitng POM Annex	686			maximum annual use, DPW has not allocated by facility
		Veterans Cemetery	5	MOA	2014	Army to CDVA, 15 AFY for 2 years, 5 AFY permanent
CSUMB	1,035					
		None				Campus has not allocated by facility.
Del Rey Oaks	242.5					
		None				
City of Monterey	65					
		None				
County of Monterey	720		531.2			Includes 10 AFY for Coutny/Marina Sphere (Reuse Plan polygon 8a)
		East Garrison 1	470	05-268	10/4/2005	
		MPC	52.5	A-09217	12/10/2002	Agreement
		Ord Market	1.5	Lease	9/6/2006	Lease Agreement
		Veterans Cemetery	2.2	A-11407	4/28/2009	MOU w/Cemetery
		~~Whispering Oaks~~	0			Allocated 93 AFY, later revoked with the specific plan.
		Ord Market	5		3/27/2008	
UCMBEST	230					
		None				
City of Seaside	1,012.5		1011.8			
		Sunbay Apts (Thorson)	120.0	USA	10/23/2001	Amendment 1 to Agreement dated 6/20/2000 between USA and FORA
		Bay View Park (Brostram)	84.8	USA	10/23/2001	Amendment 1 to Agreement dated 6/20/2000 between USA and FORA
		Other Existing Use	3.0			Streetscape irrigation, other uses at time of base closure
		Seaside Senior Living	40	18-07	2/15/2018	
		Seaside Highlands	168.5	02-07	2002	43.1 AFY to be replaced with RW when available
		Seaside Resort	161.4	05-44	2005	
		Monterey College of Law	2.6	04-20	3/18/2004	
		Chartwell School	6.4	05-26	5/19/2005	
		Amer. Youth Hostel	5.5	07-XX	11/15/2007	Agreement to supply AYH with transferred supply
		Main Gate	149	08-32	5/15/2008	WSA totals 250.4 AFY. City allocated initial retail portion only.
		Monterey Penninsula College	9.0	09-36	7/16/2009	
		MPUSD	81.0	USA		existing at time of base closure
		Campus Town	180.6	Ord. 1080	3/19/2020	Finding 4 in the Ordinance approving the Specific Plan, also 45.83 AFY RW and 261 through wheeling/reallocation.
State Parks and Rec.	44.5					
		None				

Table 2. Ord Community Water Sub-Allocations by Jurisdiction

Ord Community Land Use Jurisdiction	SVGB Allocation (AFY)	Suballocations To	Suballocation Amount (AFY)	Resolution No.	Date	Notes:
City of Marina	1,340		1334.8			
		Existing use	233.1			Preston Park, Abrams Park, Airport, Veterans Housing, etc.
		Marina Heights	292.4	2004-41	3/3/2004	renamed Sea Haven
		University Villages	593.0	2005-129	5/31/2005	renamed Dunes on Monterey Bay
		Cypress Knolls	156.1	2006-289	11/8/2006	
		MPC - 12th St Campus	7.0	2007-xx	2/6/2007	
		Imjin Office Park	0.0			IS-MND projected 11.76 AFY. No formal allcoation made
		CHOMP Wellness Center	0.0			21 AFY, Subset of University Villages
		Rock Rose Gardens	4.9	PC2011-07	6/9/2011	Planning commission, existing demand formalized as allocation
		Promontory Apartments	33.3	2013-86	7/2/2013	
		Veterans Transition Center	15.0	Agreement	1/5/2018	Army transferred supply for VTC in 2018
Assumed Line Loss	348.5					
Total GW:	6,600					

SVGB = Salinas Valley Groundwater Basin
AFY = acre-feet/year
XX = Resolution # not included in meeting minutes
RW = Recycled Water

Transfers/Exchanges

State Parks transfer for AYH	-5.5	07-XX	11/15/2007	Agreement to transfer supply to Seaside for this project
Army-Stilwell Kidney Land Exchange	109	Water Deed	8/28/2008	Agreement to trasnfer water to Seaside as part of a land exchange
Veterans Transition Center	15	Agreement	1/5/2018	Army to FORA to Marina

TABLE 3.11-2
Allocation of Existing Potable Water Supply
By Jurisdiction
(Based on FORA's April 12, 1996 Resolution

JURISDICTION	TOTAL WATER ALLOCATION (AFY)	NOTES
City of Seaside	710	
County/City of Del Rey Oaks	75	Plus reclaimed water for golf course
County/City of Monterey	65	
City of Marina	1,185	
Monterey County	545	
ARMY	1,410	
CSUMB	1,055	Plus reclaimed water for irrigation
UCMBEST	165	Plus reclaimed water for irrigation
County/State Parks and Recreation	45	
County/Marina Sphere Polygon 8a	50	
SUBTOTAL	5,295 AFY	
Line Loss (10%)	530	
FORA Strategic Receive	785	Encumbered Reserve: Army – 160 AFY1 CSUMB – 125 AFY1 Seaside – 230 AFY2 Unencumbered – 270 AFY
TOTAL	6,600 AFY	

ENCUMBRANCES TO FORA'S STRATEGIC RESERVE

1. 160 AFY at the POM Annex and 125 AFY at CSUMB polygon 10 are available upon metering of existing dwelling units.
2. 230 AFY loaned to Seaside is available to Seaside for golf course irrigation until reclaimed replacement water is provided.

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MEMORANDUM

TO:	File	DATE:	April 30, 2021
FROM:	Andrew Sterbenz, PE	JOB#:	MCWD.46.17:010
SUBJECT:	MCWRA Zones of Benefit and Assessment		

The purpose of this memorandum is to summarize the Monterey County Water Resources Agency Zones of Benefit and Assessment. This intended as a reference to understanding earlier agreements which use older Zone designations.

The Monterey County Water Resources Agency (MCWRA) and the Monterey County Board of Supervisors have created certain zones of benefit and assessment for water supply projects within the Salinas River Valley. Each zone has a specific purpose, as listed in Table 1.

Zones 2 and 2A were established to fund the construction and maintenance of Nacimiento and San Antonio Reservoirs, respectively. As can eb seen in the attached figure from 1989, the zone 2/2A boundaries excluded the elevated areas west of the Salinas River, including the former Fort Ord and the City of Marina. Fort Ord was annexed into Zones 2/2A in 1993. MCWD and the City of Marina annexed into Zones 2/2A in 1996. Under that agreement, provisions were made for two properties north of the City, RMC-Lonestar (now Cemex) and the Armstrong Ranch to annex into Zones 2/2A at a later date.

In 1992, Zones 2B, 2Y and 2Z were formed to fund the Castroville Seawater Intrusion Project (CSIP), which reduced groundwater pumping in the Salinas Valley by constructing a tertiary treatment facility at the regional wastewater treatment plant and delivering recycled water for crop irrigation. Zone 2B is the area receiving the irrigation water supply. Zone 2A is the area benefitting from the reduced groundwater pumping. Zone 2Y is made up of Zones 2A and 2B, and funds the CSIP system. Zone 2Z is made up of Zones 2A and 2B, and funds the Salinas Valley Reclamation Plant.

In 2003, Zone 2C was formed to fund the Salinas Valley Water Project, which further reduced groundwater pumping in the Salinas Valley by modifying the reservoir operations to release flows in the summer months, and rediverting those flows from the river near Marina to augment the CSIP water supply. The boundary of Zone 2C is larger than Zone 2A, adding the Prunedale area in northern Monterey County as well as lands around San Antonio Reservoir. The assessments in Zones 2/2A for maintenance of the dams are now assessed under Zone 2C.

The effect of the 2003 change is that fees are no longer assessed for Zones 2 and 2A. The Zone 2A boundary is still used as a means of defining Zones 2Y and 2Z, which will continue to have annual assessments until the CSIP and SVRP are fully paid off.

With respect to the Cemex and Armstrong properties north of Marina, they have been included in Zone 2C since 2003, and are assessed as beneficiaries of the Salinas Valley Water Project and the two reservoirs. Per the most recent data from the County website, they have not annexed into Zones 2A/2Y/2Z and are not assessed as beneficiaries of the CSIP project. It is not clear if those lands must be annexed into Zones 2A/2Y/2Z in order to increase groundwater use as stated in the 1996 agreement.

Table 1. MCWRA Zones

Zone and Purpose	Formed	Approx. Size (acres)	Notes
Zone 2, for the construction and maintenance of Nacimiento Reservoir	circa 1957	290,000	Boundary was the approximate limit of Salinas Valley groundwater basin
Zone 2A, for the construction and maintenance of San Antonio Reservoir	circa 1967	350,000	Boundary was the updated limit of Salinas Valley groundwater basin
Zone 2B, for the operation of the Castroville Irrigation System	1992 Ord. 3635	12,000	Ordinance 3635 establishes collecting assessments in Zones 2A and 2B for the benefit of the Castroville Irrigation System.
Zone 2Y, for the construction and maintenance of the Castroville Seawater Intrusion Project	1992 Ord. 3635	362,000	Ordinance 3635 establishes collecting assessments in Zones 2A and 2B for the benefit of the Castroville Irrigation System.
Zone 2Z, for the construction and maintenance of the Salinas Valley Reclamation Project	1992 Ord. 3636	362,000	Ordinance 3636 establishes collecting assessments in Zones 2A and 2B for the benefit of the Wastewater Reclamation System.
Zone 2C, for the construction and maintenance of the Salinas Valley Water Project	2003 Ord. 4203	432,000	Ordinance 04203 confirms approval of the Salinas Valley Water Project for the benefit of Zone 2C, establishing Zone 2C as the benefit zone for the project, Levying the assessments to fund the project and eliminating the water standby and availability charges in Zones 2/2A.
***Zone 2D,** for improvements to Nacimiento and San Antonio Reservoirs*	*Proposed*	*432,000*	*Would fund needed capital repairs and improvements to the dams. Area would be coincident with Zone 2C*

Table data from MCWRA website, https://www.co.monterey.ca.us/government/government-links/water-resources-agency/home/assessment-review-for-zones-2b-2y-2z-and-water-delivery-service-charges

Attachments

Map of Zones 2 and 2A, attachment to Monterey County Flood Control and Water Conservation District Ordinance 3397, dated 6/20/1989

Map of Zones 2, 2A and 2B, prepared by Monterey County Water Resources Agency, dated 10/24/2014

Map of Zone 2C, prepared by Monterey County Water Resources Agency, dated 10/1/2016

Figure: MCWRA Zones 2A, 2B and 2C in the vicinity of MCWD

References

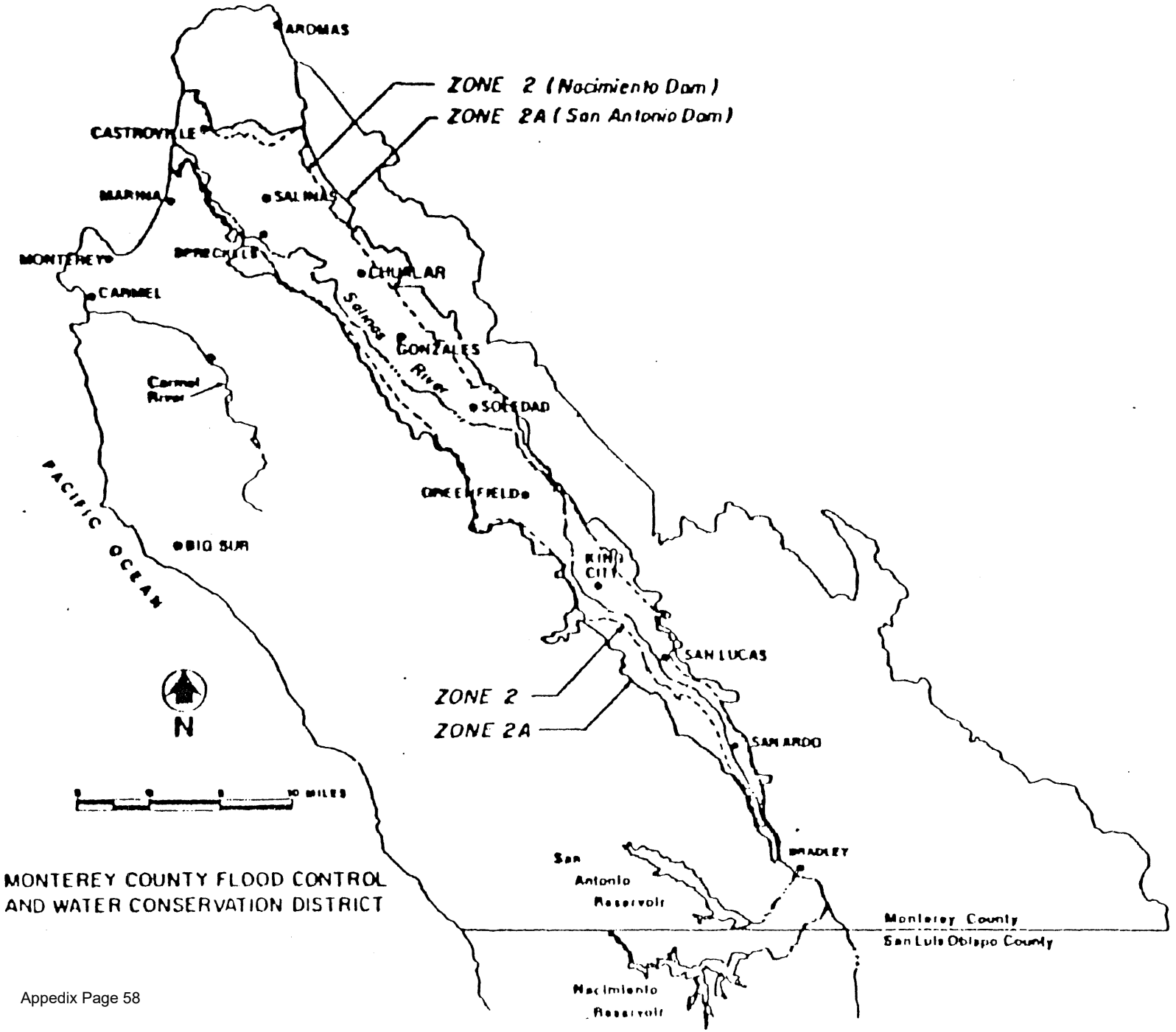
Agreement between the United States of America and the Monterey County Water Resources Agency Concerning Annexation of Fort Ord into Zones 2 and 2A of the Monterey County Water Resources Agency, Agreement No. A-06404, September 21, 1993.

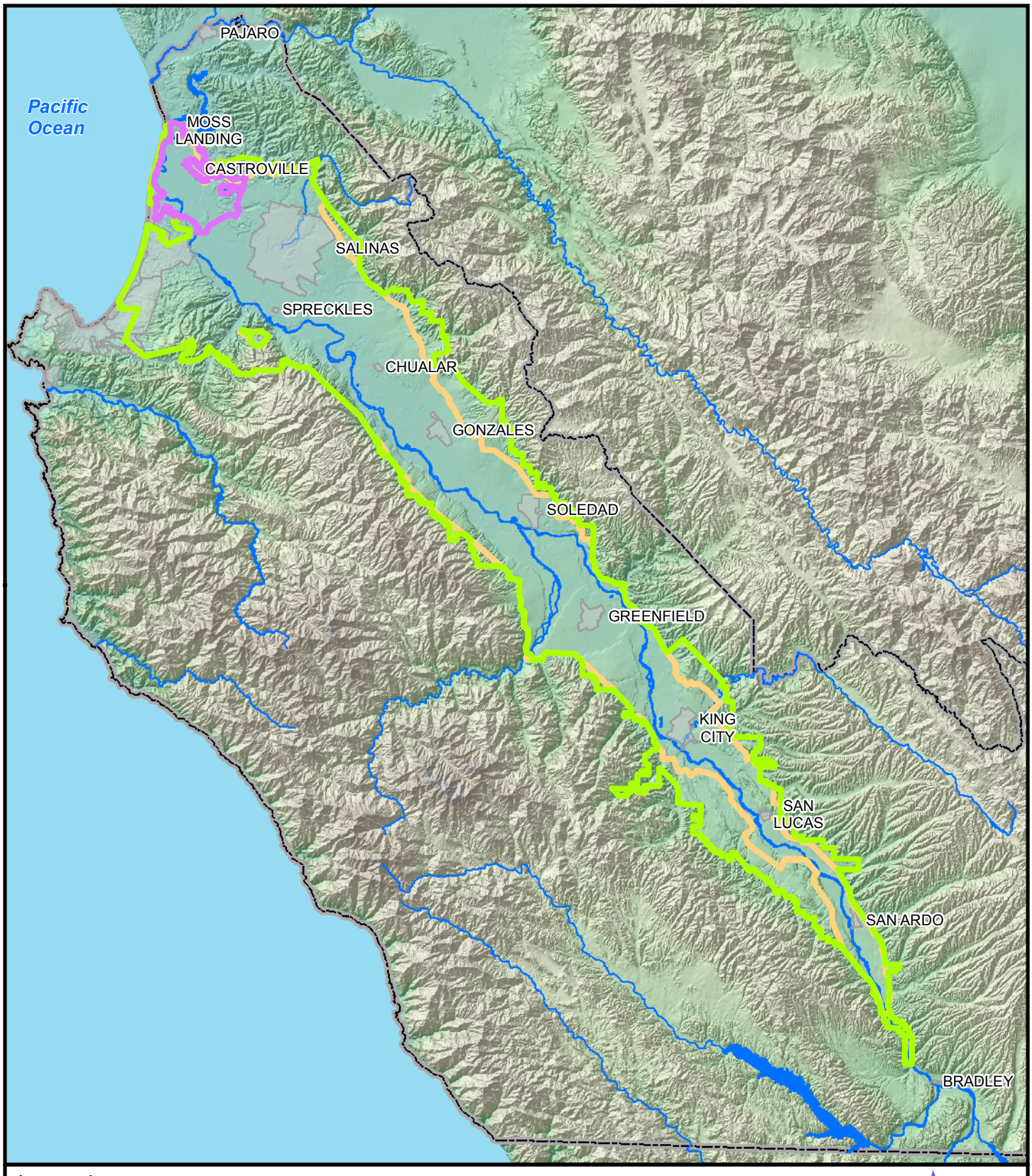
Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands, 1996

Monterey County Water Resources Agency (formerly Monterey County Flood Control and Water Conservation District)

Ordinances 3397, 3635, 3636, 4203

Resolutions 00-172, 03-295


AROMAS
ZONE 2 (Nacimiento Dam)
ZONE 2A (San Antonio Dam)
CASTROVILLE
MARINA
SALINAS
MONTEREY
CHUALAR
CARMEL
Salinas River
GONZALES
Carmel River
SOLEDAD
PACIFIC OCEAN
GREENFIELD
BIG SUR
KING CITY
SAN LUCAS
ZONE 2
ZONE 2A
N
SAN ARDO
10 MILES
BRADLEY
San Antonio Reservoir
Monterey County
San Luis Obispo County
Nacimiento Reservoir
MONTEREY COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT



Legend

- Zone 2
- Zone 2A
- Zone 2B
- Rivers
- Monterey County

Zones 2, 2A and 2B

N
W E
S

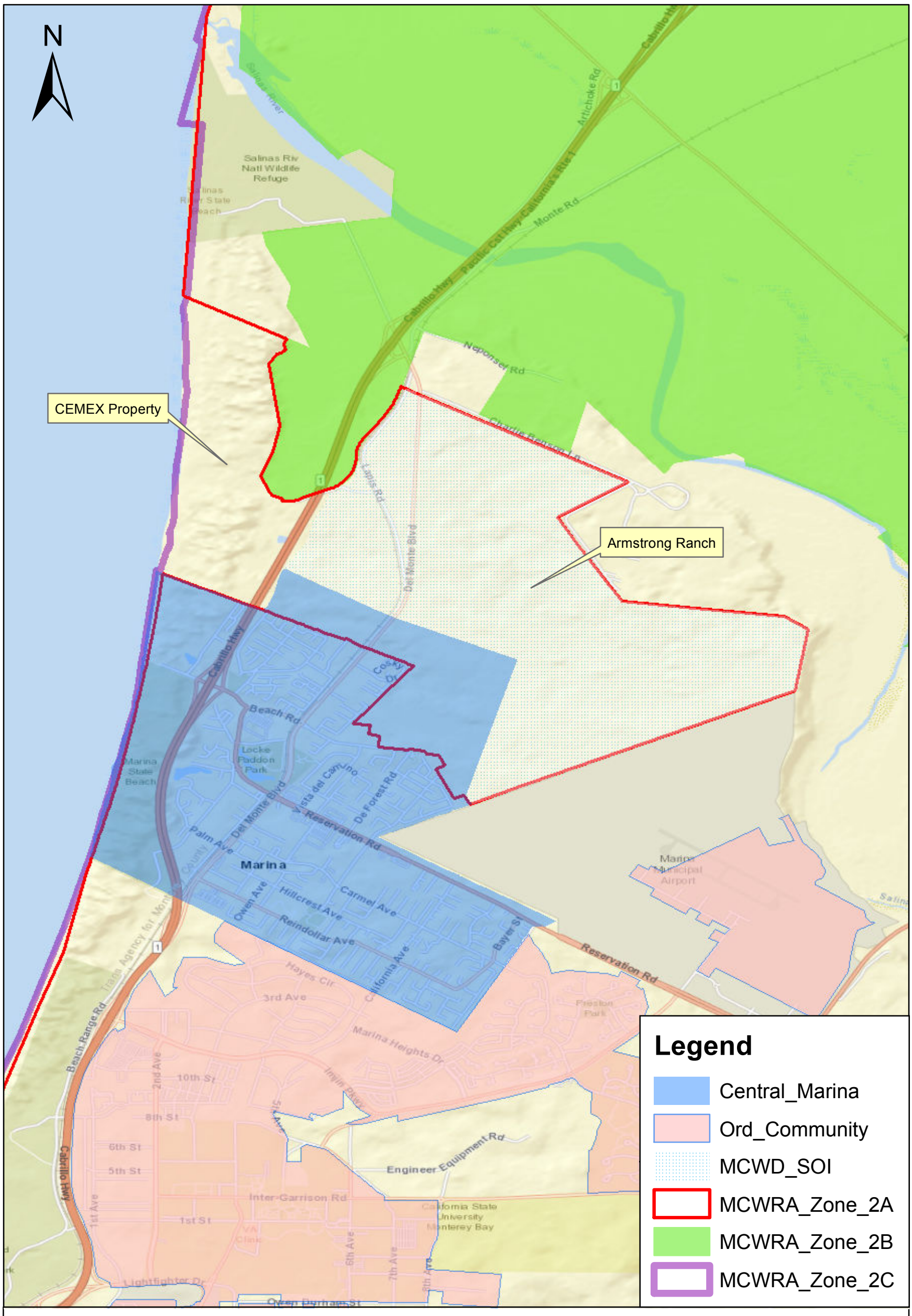
0 5 10 15 20 Miles

MONTEREY COUNTY WATER RESOURCES AGENCY 1947

The scale and configuration of all project boundaries and information shown herein are not intended as a guide for design or survey work.

Map Date: 10/24/2014


Monterey County
Water Resources Agency
Zone Boundaries
Zone 2C
Parcels
Monterey County
N
W
E
S
0 2 4 6 8
Miles
The scale and configuration of all project boundaries and information shown herein are not intended as a guide for design or survey work.
Image Source: ESRI Street Map (2016)
Map Date: 10/11/2016
CASTROVILLE
MARINA
SALINAS
MONTEREY
CHUALAR
GONZALES
SOLEDAD
GREENFIELD
KING CITY
SAN ARDO
Salinas River
Arroyo Seco River
Carmel River
San Antonio River
Nacimiento River



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MEMORANDUM

TO:	File	DATE:	May 14, 2021
FROM:	Andrew Sterbenz, PE	JOB#:	MCWD.46.17:010
SUBJECT:	MCWD Seismic Risk Assessment		

The purpose of this memorandum is to summarize the seismic risks to the Marina Coast Water District's water facilities and supplies, as required for the Urban Water Management Plan.

The Marina Coast Water District (MCWD) serves the City of Marina and the former Fort Ord in northern Monterey County. California is seismically active, and the USGS states that an earthquake of magnitude 6.7 or higher may occur in the San Francisco/Monterey Bay area. Active faults in and near the District's service area include the Reliz-Rinconada, the Monterey Bay-Tularcitos, the San Gregorio and the Zayante-Vergeles (see attached map). The Reliz Fault crosses the former Fort Ord and City of Marina, but the rest of the Salinas Valley Groundwater Basin is contiguous.

The MCWD service area is considered at high risk of ground shaking[1] under a seismic event. The local surficial soils are not prone to liquefaction or lateral spreading[2]. The Reliz fault zone crosses the service area but fault movements have not been identified in the overlying sand soils. The hazards to MCWD are therefore the effects of ground shaking on District facilities and the effect on supporting systems (roads, power and communication). Most affects are immediate, as listed in Table 1. The District maintains a detailed emergency response plan and water shortage contingency plan, which they would execute as needed. They work cooperatively with the public works and public safety staffs of the jurisdictions they serve (City of Marina, City f Seaside, Presidio of Monterey, CSUMB and County of Monterey).

Table 1, Facility Effects

Facility Type	Ground Shaking Effect	Mitigation / Response
Pipelines	Minimal	Inspect for leaks/damage following an event.
Pipelines	Above-grade appurtenances damaged (hydrants, air-vac valves, sampling stations)	Inspect after event.
Pressure Reducing Valves	Appurtenances damaged (air-vac valves, pressure sensors)	Inspect after event.
Wells	Pump Head/Motor displaced from pedestal	Anchor equipment per current building code. Inspect after event.

[1] Monterey County Multi-Jurisdictional Hazard Mitigation Plan, Figure E-6 (attached).
[2] Cornerstone Earth Group, Geotech Investigation for A1/A2 Reservoirs, Section 4.

Facility Type	Ground Shaking Effect	Mitigation / Response
Wells	Above-grade appurtenances damaged (air-vac valves, pressure sensors)	Inspect after event.
Wells	Electrical panel slides/tips over	Anchor equipment per current building code. Inspect after event.
Wells	Electrical building damage	Inspect after event.
Booster Pump Station	Pump/Motor displaced from pedestal	Anchor equipment per current building code. Inspect after event.
Booster Pump Station	Above-grade appurtenances damaged (air-vac valves, pressure sensors)	Inspect after event.
Booster Pump Station	Electrical panel slides/tips over	Anchor equipment per current building code. Inspect after event.
Water Tanks	Water sloshing into roof/rafters	Operate with required freeboard. Sample after event for bacterial contamination.
Water Tanks	Tank shifts off foundation.	Anchor equipment per current building code. Include flexible fittings on inlet/outlet piping. Inspect after event
Water Tanks	Structural damage due to movement.	Design per current building code. Provide redundant water storage. Inspect after event. Drain tank at controlled rate if visibly damaged.
Metered (Customer) Services	Building damage causes broken on-site plumbing	Respond to calls for temporary shut-downs. Check AMR system for water leak alerts. Patrol areas looking for water running out of vacant or damaged buildings.
All facilities	Loss of communications	Inspect after event. Staff the office 24/7 for customer access if phone service is lost. Operate equipment under local PLC control or operate in hand.
All facilities	Loss of Power	Generators installed at key facilities
All facilities	Extended loss of power due to power grid damage or PG&E safety shut-down	Contract for fuel delivery with multiple suppliers.

Facility Type	Ground Shaking Effect	Mitigation / Response
SCADA System	Loss of antenna or repeater station	Anchor equipment per current building code. Inspect after event.
Office/SCADA System	Building damage	Inspect after event. Relocate equipment to alternate office if needed.

Groundwater Supply Risks

The Salinas Valley Groundwater Basin is not crossed by fault zones which may interrupt or change groundwater flow paths if fault movements occur. The aquifer consists of alluvial sand and gravel layers, interbedded with clay aquitards. Ground shaking in a seismic event is not expected to decrease the storage and conveyance capacity of the aquifer. The Monterey County Multi-Jurisdictional Hazard Mitigation Plan does not identify earthquakes as a significant risk to water supply.

Monterey County owns and operates two reservoirs at the upper end of the Salinas River Valley, Nacimiento Reservoir and San Antonio Reservoir. These reservoirs provide both flood protection and water supply storage. They are both earth-fill embankment dams with concrete lined spillways. The Monterey County Multi-Jurisdictional Hazard Mitigation Plan does not identify these dams as being at risk of failure during a seismic event. However, loss of one or both of these reservoirs would have a significant effect on the water supply for the Salians Valley, including MCWD.

Water is released from Nacimiento and San Antonio Reservoirs to provide environmental flows and to facilitate year-round recharge of the Salinas Valley Groundwater Basin. Monterey County Water Resources Agency also rediverts a portion of the released flow in north Marina and provides that water for irrigation within the Castroville Seawater Intrusion Project (CSIP). The CSIP area is 12,000 acres of farmland irrigated with recycled water and the above-mentioned rediverted streamflow to reduce groundwater pumping. Over-pumping of groundwater along the coast had led to seawater intrusion into the 180/400-Ft Aquifer. The Castroville Seawater Intrusion Project has operated for the last 30 years and has slowed but not stopped the advance of seawater into the groundwater basin.

Loss of one or both reservoirs to a seismic event would have the following effects:

1. Immediate term (days): Damage to facilities within the mapped inundation area (see attached map pages). MCWD's only facility at risk is Watkins Gate Well, which is at the edge of the Salinas Valley floodplain. Damage is likely to occur to roads, bridges and power lines near the Salinas River, including portions of Highway 1 and Highway 101.

2. Near term (months). Groundwater use for agriculture may decline due to flood damage to land and equipment. The extent of the flood damage will determine the location and amount of use changes.

3. Short term (1-5 years). Groundwater use for agriculture within the CSIP area will increase due to the loss of the surface water supply, unless pumping limits are imposed by a governmental

agency. Increased pumping in the CSIP area will eventually add to the seawater intrusion. Added pumping in that area will contribute to reduced groundwater levels in adjacent areas.

4. Long Term (5-50 years). If a replacement water supply project is not developed (replacement dam or project of similar size), groundwater levels would be expected to decline throughout the valley. The aquifer connects to the Monterey bay, so water levels along the coast will not decline but additional seawater would be drawn in. MCWD may need to desalinate brackish groundwater or relocate wells further inland if seawater intrusion moves toward their wells.

A project large enough to address the loss of an upper-valley reservoir would be either a replacement reservoir or a seawater (brackish groundwater) treatment plant of sufficient size to offset the lost reservoir yield. Such a project would need Monterey County as the lead agency, with assistance from state or federal funding sources. Such a project would take at least a decade to plan and design.

Recycled Water Supply Risks

Recycled and advanced treated water is produced at the Monterey One Water regional treatment plant north of Marina. The site is not in the dam failure inundation zone. The plant would be subject to the same types of immediate seismic effects as the MCWD systems, including extended power outages. The recycled water systems may be temporarily off-line following a seismic event but a long-term supply impact is not likely.

Attachments

Regional Fault Map, Figure 3 from Cornerstone Earth Group report

Earthquake Hazard Areas, Figure E-6 from Monterey County MJHMP

Nacimiento Inundation Maps, Sheets 29 and 31

References

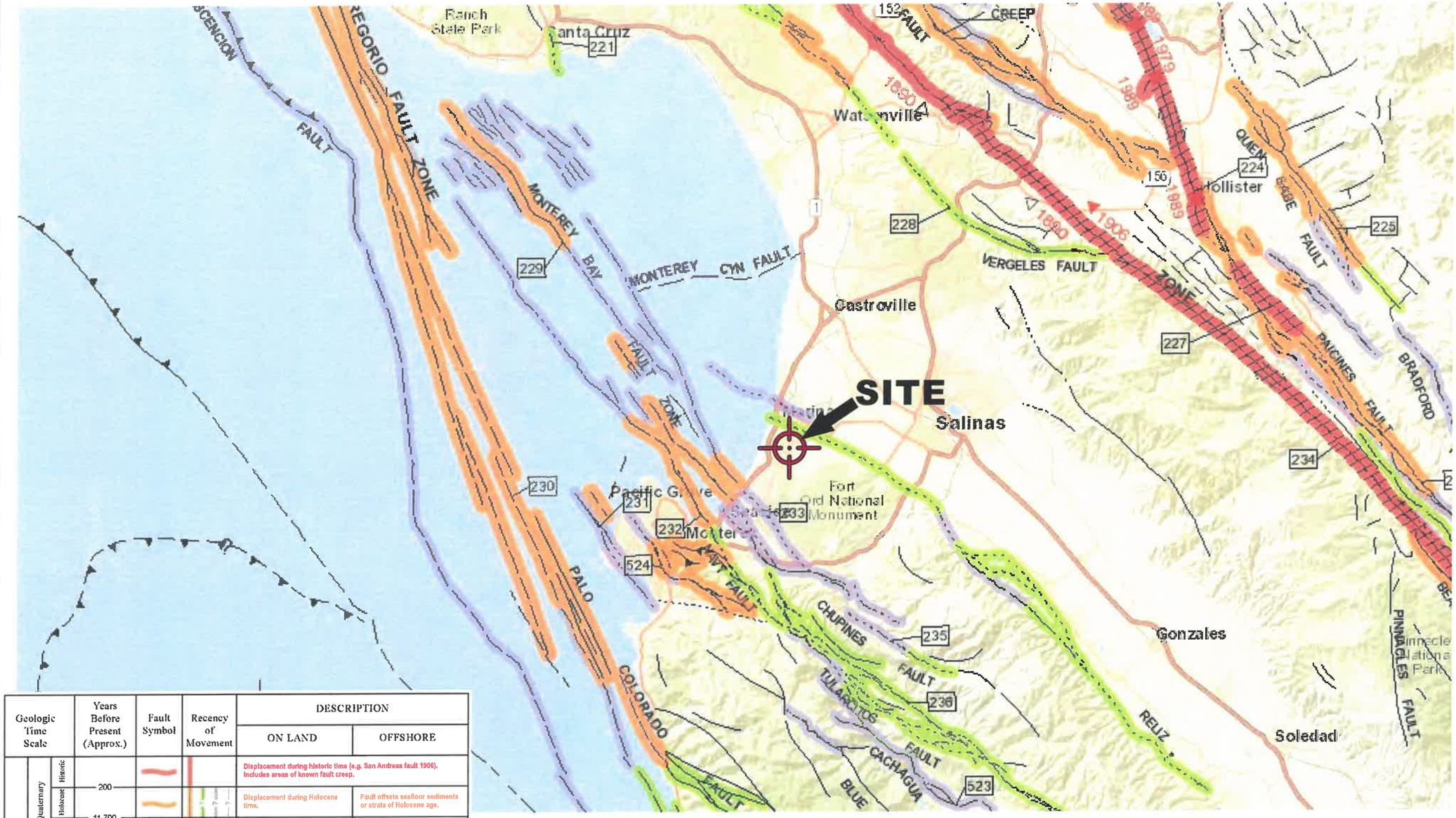
Geotechnical Investigation, MCWD A1/A2 Reservoirs and B/C Booster Pump Station, 8th Street and 6th Avenue, Marina, CA , Prepared by Cornerstone Earth Group, 12/29/2020

Monterey County Multi-Jurisdictional Hazard Mitigation Plan, June 2015

Monterey County Water Resources Agency

San Antonio Dam – No. 1008.002, Embankment Failure Inundation Maps (Full Dam Breach), prepared by AECOM, 12/20/2017

Nacimiento Dam – No. 1008.000, Embankment Failure Inundation Maps (Full Dam Breach), prepared by AECOM, 8/28/2018



Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION	
						ON LAND	OFFSHORE
Quaternary	Late Quaternary	Historic	200			Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene	11,700			Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
		Pleistocene				Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
	Early Quaternary		700,000			Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary			1,600,000			Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.
			4.5 billion (Age of Earth)				

Base by California Geological Survey - 2010 Fault Activity Map of California (Jennings and Bryant, 2010)

Project Number	187-55-1
Figure Number	Figure 3
Date	August 2019
Drawn By	RRN

Regional Fault Map

MCWD A1/A2 Reservoirs and B/C Booster Pump Station
Marina, CA

CORNERSTONE EARTH GROUP

Figure E-6. Earthquake Hazard Areas

Monterey County, California
Multi-Jurisdictional Hazard Mitigation Plan

Carmel-by-the-Sea · Marina · Pacific Grove · Seaside
Del Rey Oaks · Monterey · Sand City

Monterey Bay · Pacific Ocean · Santa Cruz County · Santa Clara County · San Benito County · San Luis Obispo County · Fresno County · Kings County

Pajaro · Las Lomas · Aromas · Moss Landing · Elkhorn · Prunedale · Castroville · Boronda · Salinas · Spreckels · Chualar · Gonzales · Soledad · Greenfield · King City · San Lucas · San Ardo · Bradley · Parkfield · Camp Roberts Mil. Res.

Pacific Grove · Marina · Sand City · Monterey · Seaside · Carmel-by-the-Sea · Del Rey Oaks · Carmel Valley Village · Los Padres National Forest · Hunter Liggett Military Reservation

City of Seaside Not Considered in Plan

Marina Municipal Airport · Monterey Peninsula Airport · Salinas Municipal Airport · King City Municipal Airport

Gonzales · Salinas · Soledad · King City · Greenfield

N W E S

339.07 degree rotation for all views

County Map Scale

1 inch equals 4 miles

0 1 2 4 6 8

Miles

City Inset Map Scale

1 inch equals 1.5 miles

0 0.75 1.5 2.25 3

Miles

Note: This map shows the relative intensity of ground shaking and damage in California from anticipated future earthquakes. The Earthquake Shaking Potential model was calculated by the California Geological Survey from the USGS/CGS seismic hazards model (Frankel and others, 2002) considering amplification in near surface soils as shown by Wills and others (2000) and using the amplification factors recommended by the building Seismic Safety Council (1997).

Legend

- Census Designated Place

Jurisdictional Boundaries
- County Boundary
- City Limits, Monterey County
- National Forest
- Military Reservation

Circulation
- US Highway
- State Highway
- County Highway
- Major Roads
- Local Roads *(City Insets Only)*
- Active Railroad (Union Pacific)

Hydrology (Perennial and Intermittent)
- Lake or Pond
- River, Creek or Tributary
- Artifical Path, Canal/Ditch or Connector

Basemap
Hillshades created from USGS 1" (county-wide) and 1/3" (city insets) National Elevation Dataset.

Quaternary and Younger Faults
- Defined
- Inferred
- Concealed

CGS Probabilistic Seismic Hazard Model Earthquake Shaking Potential

These regions are near major, active faults and will on average experience stronger earthquake shaking more frequently. This intense shaking can damage even strong, modern buildings.

Increasing Intensity

These regions are distant from known, active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking here.

Data Sources: County of Monterey - GIS Department, URS Corporation, US Geological Survey (USGS), US Census Bureau, University of California Santa Barbara (UCSB), HAZUS-MH MR2, California Geological Survey (CGS)

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Blanco Road Bridge
Likely Under Water

20 Hours

Davis Road River Crossing
Under Water

Highway 68
Near Hunter Lane
This Area
Under Water

Marina

Salinas

0 2,500 Feet 1 inch = 2,500 feet

AECOM
Monterey County Water Resources Agency
Nacimiento Dam Inundation

Name of the Dam: Nacimiento
Department Dam number: 1008.000
National Dam ID number: CA00812
County where the dam is located: San Luis Obispo
Failure Scenario: Full Dam Breach (Sunny-Day)

Horizontal Datum: NAD 1983 California Teale Albers (Ft US)
Vertical Datum: NGVD29
Date map was prepared: Date: 8/28/2018

Fire Station
Library
Police Station
Airport
Hospitals
Clinics/Urgent Care
School
River Mile Marker
City Boundary
Arrival Time
Major Highways
Highways
Major Roads
Local Traffic

Maximum Flood Depth (ft)
0 - 1
1 - 2
2- 3
3- 4
4- 5
5 - 10
10 - 15
15 - 20
20 - 25
25 - 30
30 - 35
35 - 40
40 - 45
45 - 50
50 - 75
75 - 100
> 100

REGISTERED PROFESSIONAL ENGINEER
PHILLIP MINERT
No. C64087
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA
8/28/2018

FIGURE A-1: MAXIMUM FLOOD DEPTH
Nacimiento Dam Flood Inundation Map
Page 29 of 34

Data Source: These maps were compiled using data prepared by Schaff and Wheeler for the "Nacimiento Failure Analysis," dated November 1990, and the "Flood Control Benefits Analysis," dated November 1997. Maps are based on Failure Analysis Inundation Maps developed by Schaff and Wheeler dated December 2013.

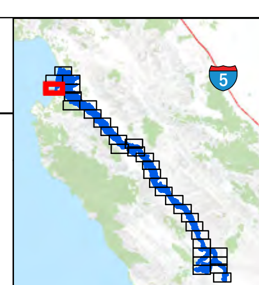
Disclaimer: The information shown is approximate and should be used as a guideline for emergency response and preparation purposes. The inundation map meets all applicable state and federal standards and has been prepared in consideration of all potential downstream hazards by a licensed civil engineer.

N
0 2,500 Feet 1 inch = 2,500 feet

AECOM
Monterey County Water Resources Agency
Nacimiento Dam Inundation

Name of the Dam: Nacimiento
Department Dam number: 1008.000
National Dam ID number: CA00812
County where the dam is located: San Luis Obispo
Failure Scenario: Full Dam Breach (Sunny-Day)

Horizontal Datum: NAD 1983 California Teale Albers (Ft US)
Vertical Datum: NGVD29
Date map was prepared: Date: 8/28/2018



- Fire Station
- Library
- Police Station
- Airport
- Hospitals
- Clinics/Urgent Care
- School
- River Mile Marker
- City Boundary
- Arrival Time
- Major Highways
- Highways
- Major Roads
- Local Traffic

Maximum Flood Depth (ft)

- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 75
- 75 - 100
- > 100

REGISTERED PROFESSIONAL ENGINEER
PHILLIP MINETT
No. C64087
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA

8/28/2018

FIGURE A-1: MAXIMUM FLOOD DEPTH

Nacimiento Dam Flood Inundation Map
Page 31 of 34

Data Source: These maps were compiled using data prepared by Schaff and Wheeler for the "Nacimiento Failure Analysis," dated November 1990, and the "Flood Control Benefits Analysis," dated November 1997. Maps are based on Failure Analysis Inundation Maps developed by Schaff and Wheeler dated December 2013.

Disclaimer: The information shown is approximate and should be used as a guideline for emergency response and preparation purposes. The inundation map meets all applicable state and federal standards and has been prepared in consideration of all potential downstream hazards by a licensed civil engineer.

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Appendix F: Water Shortage Contingency Plan with Resolution of Adoption

The following documents are included in this appendix:

1. Resolution 2015-33, dated July 6, 2015, Adopting an Updated Water Shortage Contingency Plan
2. MCWD Water Shortage Contingency Plan, dated July 6, 2015
3. Resolution 2014-34, dated November 3, 2014, Declaring Water Conservation Stage 3 (included as an example of an implementing resolution)

July 6, 2015

Resolution No. 2015-33
Resolution of the Board of Directors
Marina Coast Water District
Adopting an Updated Water Shortage Contingency Plan

RESOLVED by the Board of Directors ("Directors") of the Marina Coast Water District ("MCWD"), at a regular meeting duly called and held on July 6, 2015, at 211 Hillcrest Avenue, Marina, California as follows:

WHEREAS, Section 10632 of the California Water Code requires the Marina Coast Water District to maintain a Water Shortage Contingency Plan within its Urban Water Management Plan; and,

WHEREAS, the District maintains a Water Shortage Contingency Plan and desires to update said plan in accordance with the Water Code and provide a guidance document for management of water shortages within the District; and,

WHEREAS, due to ongoing historic drought conditions, the District desires to incorporate current mandatory water conservation measures into an updated Water Shortage Contingency Plan.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Marina Coast Water District does hereby:

1. Approve and adopt the attached Water Shortage Contingency Plan, and,

2. Authorize the Interim General Manager to file the Water Shortage Contingency Plan with the California Department of Water Resources.

PASSED AND ADOPTED on July 6, 2015 by the Board of Directors of the Marina Coast Water District by the following roll call vote:

Ayes:	Directors	Shriner, Moore, Lee, Le
Noes:	Directors	None
Absent:	Directors	Gustafson
Abstained:	Directors	None

Peter Le

Peter Le, Vice President

ATTEST:

Bill Kocher, Secretary

CERTIFICATE OF SECRETARY

The undersigned Secretary of the Board of the Marina Coast Water District hereby certifies that the foregoing is a full, true and correct copy of Resolution No. 2015-33 adopted July 6, 2015.

Bill Kocher, Secretary

MARINA COAST WATER DISTRICT
WATER SHORTAGE CONTINGENCY PLAN

1.0 INTRODUCTION AND BACKGROUND

This Water Shortage Contingency Plan is developed in compliance with California Water Code Section 10632. Requirements of subsections (a)(1)-(a)(9) and (b) are identified below and are accompanied by the required elements and information.

The Marina Coast Water District (MCWD) obtains its water supply from the Salinas Valley Groundwater Basin (SVGB). The SVGB is not adjudicated and provides water for growers, municipalities and other municipal and industrial uses in the Salinas Valley. Due to cumulative basin pumping, coastal aquifers are experiencing seawater intrusion. MCWD continues to work with Monterey County Water Resources Agency (MCWRA) in developing plans to coordinate and encourage preservation of the SVGB aquifers by all municipal and agricultural users.

In 2005, MCWD interconnected its two service areas, Central Marina and the Ord Community. The interconnection has improved system-wide reliability, making maximum use of available water storage tanks in the Ord Community and allowing both areas to be served by any of the eight District wells. In 2007, the District consolidated the two systems under a single Public Water System Permit.

The District continues its participation as a member of the Water Awareness Committee of Monterey County (WAC). Through the WAC, representatives from several agencies throughout Monterey County work together coordinating conservation and other water awareness efforts including education programs, information booths for special events and public understanding of Monterey County water challenges and opportunities.

California Water Code Section 10632(a)(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies, including but not limited to, a regional power outage, an earthquake or other disaster.

The MCWD developed and adopted an Emergency Response Plan[1] for emergency and disaster occurrences with guidelines and agreements for cooperative efforts with other State and local agencies, as required by the State Water Resources Control Board, Division of Drinking Water (DDW). This Plan contains actions MCWD would initiate in the event of a catastrophic reduction in its water supply.

2.0 STAGES OF ACTION

California Water Code Section 10632(a)(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage.

[1] Ordinance 44, adopted in 2007

The MCWD has developed a five-stage Water Conservation Plan that includes two voluntary and three mandatory stages. Table 1 generally describes the various stages. Specific water supply conditions applicable to each stage, referred to as "triggering mechanisms" herein, are discussed in the next section.

Table 1: Water Conservation Stages and Demand Reduction Goals

Stage	Water Shortage Level	Demand Reduction Goal	Type Program
Stage 1	0 – 10%	10% reduction	Voluntary Compliance
Stage 2	>10 - 25%	20% reduction	Voluntary Compliance
Stage 3	>25 - 35%	30% reduction	Mandatory Compliance
Stage 4	>35 – 50%	40% reduction	Mandatory Compliance
Stage 5	>50%	50%+ reduction	Mandatory Compliance
Priorities for use of available water, based on California Water Code Chapter 3 are: 1. Health and Safety - interior residential and fire fighting 2. Commercial, Industrial, and Governmental - maintain jobs & economic base 3. Existing Landscaping - especially trees and shrubs 4. New Demand - projects without permits when shortage declared			

California Water Code Section 10632(a)(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

This requirement is oriented toward water supply systems that are primarily supplied with surface water and are therefore directly affected by short-term fluctuations in hydrology (i.e., drought conditions). MCWD's current water supply is produced through groundwater pumping from the large SVGB. MCWD supply availability from this basin has not historically varied due to short-term hydrologic conditions. MCWD's wells are located in the Pressure Sub-Area of the SVGB. Within the Pressure Sub-Area, the historic difference between water levels under average and drought conditions is only 10- to 20-feet. The minimum water supply available during the driest three-year sequence is expected to match demands as discussed in the Urban Water Management Plan.

3.0 TRIGGERING MECHANISMS

The SVGB is currently the most important source of water for MCWD. In 2004, the MCWD's groundwater withdrawals of about 4,600 acre-feet accounted for less than one percent (1%) of the estimated basin-wide annual extractions of roughly 550,000 acre-feet. Given this relatively small percentage, MCWD conservation and contingency management activities can play only a small part within the SVGB. The foremost concern in developing appropriate triggers is achieving the maximum practical protection of an adequate long-term water supply of acceptable quality for MCWD customers. To that end, triggering mechanisms should be tied to factors that, directly or indirectly, have the greatest potential effect on the quality and quantity of available groundwater. Two general types of threats could cause MCWD to experience water shortages:

1. Unanticipated catastrophic system failure due to an earthquake, terrorist attack or sudden contamination of water supply, or
2. Chronic system shortage due to seawater intrusion reaching water supply wells in

concentrations such that those wells would have to be removed from service.

In the case of a catastrophic failure, the MCWD would assess the nature and extent of the failure, and the General Manager would identify the appropriate Conservation Stage in accordance with the expected level of water supply shortage. Should shortages be anticipated in amounts beyond fifty percent of normal demands, emergency actions will be taken in accordance with the MCWD's Emergency Response Plan, including enacting emergency ordinances as may be required by MCWD Board of Directors.

The chronic system threat to MCWD's present water supplies is seawater intrusion, which has occurred along the coastal margin of the Salinas Valley in response to historic over-drafting of the basin. Contamination from volatile organic compounds (VOCs) has also affected MCWD wells and could pose additional problems. Although seawater intrusion has not yet affected the deep zone (900-Foot Aquifer) of the SVGB (which is the source of supply for District Wells No.10, 11, 12 and 34), it is possible that continued extractions in the 900-Foot Aquifer could ultimately lead to contamination of these water supplies by seawater. MCWD monitors the rate of seawater intrusion and plans to develop alternative water resources that would be insulated from intrusion. However, it is possible for intrusion to appear in a relatively short time span and reduce overall supplies available. Consequently, the MCWD has structured this Water Shortage Contingency Plan with the primary goal of reducing water demands to allow time for alternative water supply measures, including the drilling of alternate wells in areas unaffected by intrusion and/or contamination. A specific triggering mechanism for various levels of conservation is tied to concentrations of chlorides in MCWD wells and possible concentrations of VOCs, such as trichloroethylene (TCE) which was previously observed at low levels in Well No. 9 (no longer in service) in Central Marina and is occasionally detected at Wells No. 29, 30 and 31 in the Ord Community. Chloride concentration is directly related to the seawater intrusion problem, and both parameters (chloride and VOCs) are related to the overall basin viability as a secure source of water supply.

Chloride concentration is a key indicator of water quality degradation due to seawater intrusion. Tests for statistically significant changes in chloride concentrations assist in the detection of the earliest stages of intrusion and are appropriate indicators of a water supply emergency. In addition, MCWD currently monitors its Ord Community wells for the presence of TCE and other organic compounds, and works with the U.S. Army regarding the Army's groundwater cleanup actions in the Ord Community.

Climate conditions are monitored by the State of California and by Monterey County. Monterey County specifically monitors water levels in the Salinas Valley Groundwater Basin. During prolonged or extended periods of drought, the State of California, acting through the Legislature, the State Water Resources Control Board (SWRCB) and/or the Department of Water Resources may enact rules or legislation directing urban water suppliers to implement demand reduction measures. Similarly, the County of Monterey, acting through the Board of Supervisors and/or the Monterey County Water Resources Agency may enact rules or ordinances directing urban water suppliers to implement demand reduction measures. Such legislation, rules or ordinances shall be considered as triggering mechanisms under this Plan.

TRIGGERING MECHANISMS FOR CONSERVATION STAGES

These Triggering mechanisms shall be interpreted as guidelines and are summarized in Table 2. The General Manager and/or Board of Directors may impose any of the following conservation stages based upon facts and circumstances which may not have been otherwise anticipated in this plan.

Table 2 Conservation Level Triggering Mechanisms

Conservation Stage and Water Shortage Level	Triggering Mechanism
Stage One 0-10% Water Shortage Voluntary Compliance	1) system malfunction resulting in up to 10% shortage 2) increase in chlorides which do not threaten to exceed drinking water quality standard 3) increase in VOC concentrations which do not threaten to exceed standards with blending 4) directive by the State of California or the County of Monterey to implement demand reduction measures in response to drought conditions
Stage Two >10-25% Water Shortage Voluntary Compliance	1) system malfunction resulting in greater than10% shortage 2) increase in chlorides which may threaten to exceed drinking water quality standard 3) increase in VOC concentrations which do not threaten to exceed standards with blending 4) directive by the State of California or the County of Monterey to implement demand reduction measures in response to drought conditions
Stage Three >25-35% Water Shortage Mandatory Compliance	1) system malfunction resulting in greater than 25% shortage 2) increase in chlorides which are expected to exceed drinking water quality standard 3) increase in VOC concentrations which do not threaten to exceed standards with blending or when remaining capacity is reduced by up to 25% 4) directive by the State of California or the County of Monterey to implement demand reduction measures in response to drought conditions
Stage Four >35-50% Water Shortage Mandatory Compliance	1) system malfunction resulting in greater than 35% shortage 2) increase in chlorides which are expected to exceed drinking water quality standard 3) increase in VOC concentrations which do not threaten to exceed standards with blending or when remaining capacity is reduced more than 35% 4) directive by the State of California or the County of Monterey to implement demand reduction measures in response to drought conditions
Stage Five >50% Water Shortage Mandatory Compliance	1) system malfunction resulting in greater than 50% shortage 2) increase in chlorides which are expected to exceed drinking water quality standard

	3) increase in VOC concentrations which do not threaten to exceed standards with blending or when remaining capacity is reduced more than 50% 4) directive by the State of California or the County of Monterey to implement demand reduction measures in response to drought conditions

STAGE 1 Triggers: Up to 10% Water Supply Shortage

Stage 1 conservation measures may be called for as a result of malfunction of all or portions of the water system that reduces supplies by up to 10% on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions that result in legislation, rules or ordinances enacted by the State of California and/or the County of Monterey, and/or the determination that there is a need to focus public attention on water conservation.

Further triggering could also be based on:

1) detection of a statistically significant increase in chloride concentrations but where such concentrations do not threaten to exceed the DDW "Upper Level" secondary (aesthetics) drinking water standard currently set at 500 mg/l at the well(s) in question, or

2) detection of a statistically significant increase in VOC concentrations but where such concentrations do not threaten to exceed the primary drinking water maximum contaminant level (MCL) for each VOC at the well(s) in question and/or blending of this supply with other well supplies cannot maintain a distribution system concentration(s) below these standards.

STAGE 2 Triggers: >10% to 25% Water Supply Shortage

Stage 2 conservation measures may be called for due to malfunction or failure of all or portions of the water system that reduces supplies by greater than 10% on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions that result in legislation, rules or ordinances enacted by the State of California and/or the County of Monterey, and/or the determination that there is a need to focus public attention on water conservation.

Further triggering could also be based on:

1) detection of a statistically significant increase in chloride concentrations where such concentrations may threaten to exceed the DDW "Upper Level" secondary (aesthetics) drinking water standard currently set at 500 mg/l at the well(s) in question, or

2) detection of a statistically significant increase in VOC concentrations, but where such concentrations do not threaten to exceed the primary drinking water MCL for each VOC at the well(s) in question and/or blending of this supply with other well supplies cannot maintain a distribution system concentration(s) below these standards.

STAGE 3 Triggers: >25% to 35% Water Supply Shortage

Stage 3 conservation measures may be called for due to malfunction or failure of all or portions of the water system that reduces supplies by greater than 25% on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions that result in legislation, rules or ordinances enacted by the State of California and/or the County of Monterey.

Further triggering could also be based on:

1) detection of an increase in chloride concentrations where such concentrations are expected to exceed the DDW "Upper Level" secondary (aesthetics) drinking water standard currently set at 500 mg/l at the well(s) in question, or

2) detection of VOC concentrations, but where such concentrations do not threaten to exceed the primary drinking water MCL for each VOC, and/or blending of this supply with other well supplies cannot maintain a distribution system concentration(s) below these standards, and/or when gross reduced well production of up to 25% is necessary to maintain adequate water quality.

STAGE 4 Triggers: >35% to 50% Water Supply Shortage

Stage 4 conservation measures may be called for due to malfunction or failure of all or portions of the water system that reduces supplies by greater than 35% on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions that result in legislation, rules or ordinances enacted by the State of California and/or the County of Monterey.

Further triggering could also be based on:

1) detection of an increase in chloride concentrations where such concentrations are expected to exceed the DDW "Upper Level" secondary (aesthetics) drinking water standard currently set at 500 mg/l at the well(s) in question, or

2) detection of VOC concentrations, but where such concentrations do not threaten to exceed the primary drinking water MCL for each VOC, and/or blending of this supply with other well supplies cannot maintain a distribution system concentration(s) below these standards, and/or gross reduced well production of up to 35% is necessary to maintain adequate water quality.

STAGE 5 Triggers: >50% Water Supply Shortage

Stage 5 conservation measures may be called for due to in malfunction or failure of all or portions of the water system that reduces supplies by 50 % or more on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions that result in legislation, rules or ordinances enacted by the State of California and/or the County of Monterey.

Further triggering could also be based on:

1) detection of an increase in chloride concentrations where such concentrations are expected to exceed the short term primary drinking water standard of 600 mg/l at

the well(s) in question, or

2) detection of VOC concentrations but where such concentrations do not threaten to exceed the primary drinking water MCL for each VOC, and /or blending of this supply with other well supplies cannot maintain a distribution system concentration(s) below these standards, and/or gross reduced well production of over 50% is necessary to maintain adequate water quality.

4.0 CONSERVATION REQUIREMENTS AND APPEAL PROCEDURES

The following are MCWD's conservation requirements by customer type and stage and the appeal procedures. These requirements and procedures are adopted as part of MCWD's Water Shortage Contingency Plan.

STAGE 1 Actions: Voluntary – Minimal Conservation Requirement, 10% Demand Reduction Goal

MCWD shall:

- notify all customers of the water shortage
- mail information to every customer and reasonably available potential water user explaining the importance of significant water use reductions
- provide technical information to customers on ways to improve water use efficiency
- conduct media campaign to remind consumers of the need to save water
- publicize the showerhead, toilet rebate and other efficiency programs
- enforce mandatory restrictions on water waste as provided in MCWD Code, Chapter 3

Stage 1 actions shall apply under any triggering event.

STAGE 2 Actions: Voluntary – Moderate Conservation Requirement, 20% Demand Reduction Goal

In addition to the actions listed in Stage 1, MCWD shall call for voluntary reductions of up to 25% for each connection based on the average use during a base period proposed by the Water Conservation Commission and adopted by MCWD's Board of Directors. Stage 2 actions shall apply under any triggering event.

STAGE 3 Actions: Mandatory – Severe Conservation Requirement, 30% Demand Reduction Goal

In addition to the actions listed in Stage 1 and 2, MCWD shall establish mandatory annual allotments for each connection based on the average use of all connections within that category during a base period proposed by the Water Conservation Commission and adopted by MCWD's Board of Directors. When Stage 3 use reductions become necessary, administration and enforcement of the District's mandatory restrictions on water waste become the major focus of MCWD. If necessary, additional temporary personnel may be hired and special meetings of the Water Conservation Commission and /or Board of Directors may be scheduled.

Stage 3 actions shall be applied based upon triggering event, as noted below.

1. Each water service connection shall receive an allotted quantity of water, typically specified in hundred cubic feet (hcf) units per billing cycle. The Board of Directors may elect not to impose this action in response to a drought if the supply reduction trigger is not met.

2. The Board of Directors may pass an emergency ordinance increasing the usage rate for potable water consumed over a connections allocation, and/or in order to ensure stable revenues for operation and maintenance of MCWD. The Board of Directors may elect not to impose this action if water service allocations are not imposed.

3. As individual customers are notified of allotments, it is expected that many requests for special consideration will be received. These petitions must be processed rapidly, efficiently and fairly. Every application for waiver must be heard, evaluated and acted upon by the Water Conservation Commission as rapidly as possible. Every action by the Water Conservation Commission shall be referred to MCWD's Board of Directors for consideration. The procedures for appeal are defined, below. Appeals shall be considered under any Stage in which mandatory restrictions or allocations are imposed.

4. No building permits will be issued or meters installed for new accounts that had not received building permits before the "Severe Shortage" was declared. The Board of Directors may elect not to impose this action in response to a drought if the supply reduction trigger is not met.

5. The following water use restrictions shall be imposed.

Stage	Type Use	Restriction	Applies
3	Existing, Irrigated Landscapes Commercial Complexes, Residential Units, Public Parks, and Athletic Fields	Landscape watering with recycled water or other non-potable water sources may continue without restriction. Landscape watering with potable water shall be subject to the following limits: (1) Landscape watering using sprinklers or automated irrigation systems is permitted only two days per week, Wednesdays and Saturdays, before 10:00 a.m. or after 5:00 p.m. The Board of Directors may choose to assign different watering days to specific areas if daily system-wide usage limits are required. (2) With on-site supervision, including supervision by a professional gardener/landscaper, landscapes may be manually watered with drip irrigation, a soaker hose, a handheld hose with a positive action shut-off nozzle, or a watering can/bucket at any time, on any day, not more than 2 days per week. (3) Irrigation of ornamental turf in roadway medians and parkway strips is prohibited. Plantings of trees, shrubs, ornamental grasses, and ground covers with low water demand, watered by drip irrigation, are encouraged.	During both Water Shortage and Drought Conditions
3	New, Irrigated Landscapes Commercial Complexes, Residential units, Public Parks, and Athletic Fields	Landscape watering with recycled water or other non-potable water sources may continue without restriction. Landscape watering with potable water shall be subject to the following limits: (1) Landscape watering is permitted three (3) days a week to maintain adequate growth on newly installed landscapes, for a period generally up to five (5) weeks. Watering days for new landscapes are Monday, Wednesday, and Saturday. Property owners must notify the District of the address where new landscape is installed and the date of installation. (2) Following the initial establishment period, landscape watering using sprinklers or automated irrigation systems is permitted only on the days associated with the current conservation stage in effect.	During both Water Shortage and Drought Conditions

Stage	Type Use	Restriction	Applies
3	Golf Courses	Landscape watering with recycled water or other non-potable water sources may continue without restriction. Landscape watering with potable water shall be subject to the following limits: (1) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. (2) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). (3) Course operators shall implement a plan to achieve a twenty (20) percent reduction in monthly irrigation water use.	During both Water Shortage and Drought Conditions
3	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must offer and clearly notify guests of a "limited linen/towel exchange" program.	During both Water Shortage and Drought Conditions
3	Swimming pools, hot tubs	Initially filling new and existing swimming pools is prohibited. Draining and refilling existing swimming pools is permitted only if repairing a pool leak or repairing, maintaining or replacing a pool component that has become hazardous. All pools and tubs shall be covered when not in use to reduce evaporation.	During both Water Shortage and Drought Conditions
3	Decorative fountains, ponds and waterfalls over 20 gallons in size	Initially filling new and existing decorative fountains, ponds and waterfalls is prohibited. Adding water to make up for evaporative loss is allowed only for ponds and fountains that serve as aquarium tanks for fish or aquatic animals.	During both Water Shortage and Drought Conditions
3	Industrial and Commercial	Reduction of water use by any means is encouraged. Compliance with mandatory demand reduction measures is required for outdoor water uses including landscape irrigation, swimming pools, and vehicle washing.	During both Water Shortage and Drought Conditions
3	Vehicle and Equipment Washing	Washing of vehicles and mobile equipment (e.g., washing vehicle at a residence) is permitted on any day, any time of the day, with the use of a positive action shut-off nozzle. All customers are encouraged to only wash those vehicles as is necessary for health and safety utilizing commercial car wash facilities.	During both Water Shortage and Drought Conditions

Stage	Type Use	Restriction	Applies
3	Heavy Construction	The use of potable water for dust control shall be reduced to the greatest extent possible.	During both Water Shortage and Drought Conditions

STAGE 4 Actions: Mandatory – Critical Conservation Requirement, 40% Demand Reduction Goal

In addition to the actions listed in the previous stages, MCWD shall establish allotments based upon a 35% -50% curtailment of water use. All new and previous appeals for waiver shall be evaluated by field audit and shall be reheard by the Water Conservation Commission, if necessary, upon recommendation of MCWD staff. Water rates may be increased by the Board of Directors.

The following water use restrictions shall be imposed.

Stage	Type Use	Restriction	Applies
4	Existing, Irrigated Landscapes Commercial Complexes, Residential units, Public Parks, and Athletic Fields	Landscape watering with recycled water or other non-potable water sources may continue without restriction. Landscape watering with potable water shall be subject to the following limits: (1) Landscape watering using sprinklers or automated irrigation systems is permitted only one day per week, on Wednesdays before 10:00 a.m. or after 5:00 p.m. The Board of Directors may choose to assign different watering days to specific areas if daily system-wide usage limits are required. (2) With on-site supervision, including supervision by a professional gardener/landscaper, landscapes may be manually watered with drip irrigation, a soaker hose, a handheld hose with a positive action shut-off nozzle, or a watering can/bucket at any time, on any day, not more than 1 day per week. (3) Irrigation of ornamental turf in roadway medians and parkway strips is prohibited. Plantings of trees, shrubs, ornamental grasses, and ground covers with low water demand, watered by drip irrigation, are encouraged.	During both Water Shortage and Drought Conditions
4	New, Irrigated Landscapes	Landscape watering with recycled or other non-potable water sources water may continue without restriction.	During both Water

Stage	Type Use	Restriction	Applies
	Commercial Complexes, Residential units, Public Parks, and Athletic Fields	The installation of new landscapes irrigated with potable water is discouraged. Landscape watering with potable water shall be subject to the following limits: (1) Landscape watering is permitted three (3) days a week to maintain adequate growth on newly installed landscapes, for a period generally up to five (5) weeks. Watering days for new landscapes are Monday, Wednesday, and Saturday. Property owners must notify the District of the address where new landscape is installed and the date of installation. (2) Following the initial establishment period, landscape watering using sprinklers or automated irrigation systems is permitted only on the days associated with the current conservation stage in effect.	Shortage and Drought Conditions
4	Golf Courses	Landscape watering with recycled water or other non-potable water sources may continue without restriction. Landscape watering with potable water shall be subject to the following limits: (1) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. (2) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). Course operators shall implement a plan to achieve a thirty (30) percent reduction in monthly irrigation water use.	During both Water Shortage and Drought Conditions
4	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must limit linen/towel changes to once every two (2) nights or for the entire stay, whichever is shorter, except for health and safety.	During both Water Shortage and Drought Conditions
4	Swimming pools, hot tubs	Initially filling new and existing swimming pools is prohibited. Draining and refilling existing swimming pools is permitted only if repairing a pool leak or repairing, maintaining or replacing a pool component that has become hazardous. All pools and tubs shall be covered when not in use to reduce evaporation.	During both Water Shortage and Drought Conditions

Stage	Type Use	Restriction	Applies
4	Decorative fountains, ponds and waterfalls over 20 gallons in size	Filling or refilling new and existing decorative fountains, ponds and waterfalls is prohibited. Adding water to make up for evaporative loss is allowed only for ponds and fountains that serve as aquarium tanks for fish or aquatic animals. Owners are encouraged to move fish and aquatic animals to indoor tanks less subject to evaporation.	During both Water Shortage and Drought Conditions
4	Vehicle and Equipment Washing	Washing of vehicles and mobile equipment (e.g., washing vehicle at a residence) is permitted on any day, any time of the day, with the use of a positive action shut-off nozzle. All customers are encouraged to only wash those vehicles as is necessary for health and safety utilizing commercial car wash facilities.	During both Water Shortage and Drought Conditions
4	Industrial and commercial	Reduction of water use by any means is encouraged. The Board of Directors may establish mandatory use reduction targets, if needed. Compliance with mandatory demand reduction measures is required for outdoor water uses including landscape irrigation, swimming pools, and vehicle washing.	During both Water Shortage and Drought Conditions
4	Heavy Construction	The use of potable water for dust control shall be reduced to the greatest extent possible.	During both Water Shortage and Drought Conditions

STAGE 5 Actions: Mandatory – Emergency Conservation Requirement, 50% Demand Reduction Goal

Appropriate 50% water shortage allotments shall be calculated and noticed to customers. Appropriate administration and enforcement of this stringent program shall be the highest priority of MCWD activity. All resources of MCWD will be directed toward improvement and increase of water supply to the system. Water rates may be further increased by the Board of Directors.

The following water use restrictions shall be imposed:

Stage	Type Use	Restriction	Applies
5	Existing, Irrigated Landscapes Commercial Complexes, Residential units, Public Parks, and Athletic Fields	Landscape watering with recycled water or other non-potable water sources may continue without restriction. Landscape watering with potable water is prohibited.	During both Water Shortage and Drought Conditions
5	New, Irrigated Landscapes Commercial Complexes, Residential units, Public Parks, and Athletic Fields	Landscape watering with recycled water or other non-potable water sources may continue without restriction. The installation of new landscapes irrigated with potable water is prohibited during Conservation Stage 5. New landscapes installed prior to declaration of Conservation Stage 5 may water two (2) days a week to maintain adequate growth on newly installed landscapes, for the remainder of the initial five (5) week establishment period. Watering days for new landscapes are Wednesday and Saturday. Property owners must notify the District of the address where new landscape is installed and the date of installation	During both Water Shortage and Drought Conditions
5	Golf Courses	Landscape watering with recycled water or other non-potable water sources may continue without restriction. Landscape watering with potable water shall be subject to the following limits: (3) All landscape out-of-play areas such as may be found around a clubhouse or entryway shall follow the general landscape irrigation restrictions. (4) All in-play areas may be irrigated during the standard watering hours (before 10:00 a.m. or after 5:00 p.m.). Course operators shall implement a plan to achieve a forty (40) percent reduction in monthly irrigation water use.	During both Water Shortage and Drought Conditions
5	Hotels, motels and bed and breakfasts	Hotels, motels and B&B's must limit linen/towel changes to once every three (3) nights or for the entire stay, whichever is shorter, except for health and safety.	During both Water Shortage and Drought Conditions

Stage	Type Use	Restriction	Applies
5	Swimming pools, hot tubs	Filling new swimming pools and/or draining and refilling existing swimming pools is prohibited. All pools and tubs shall be covered when not in use to reduce evaporation. Contact District conservation staff if an existing swimming pool must be repaired and refilled during Conservation Stage 5.	During both Water Shortage and Drought Conditions
5	Decorative fountains, ponds and waterfalls over 20 gallons in size	Filling or refilling new and existing decorative fountains, ponds and waterfalls is prohibited. Adding water to make up for evaporative loss is allowed only for ponds and fountains that serve as aquarium tanks for fish or aquatic animals. Owners are encouraged to move fish and aquatic animals to indoor tanks less subject to evaporation.	During both Water Shortage and Drought Conditions
5	Vehicle and Equipment Washing	Washing of vehicles and mobile equipment is prohibited. Only commercial facilities with water recycling systems may be used.	During both Water Shortage and Drought
5	Industrial and commercial	Reduction of water use by any means is encouraged. The Board of Directors may establish mandatory use reduction targets, if needed. Compliance with mandatory demand reduction measures is required for outdoor water uses including landscape irrigation, swimming pools, and vehicle washing.	During both Water Shortage and Drought Conditions
5	Heavy Construction	The use of potable water for dust control shall be reduced to the greatest extent possible. The District may establish mandatory construction water budgets, if needed.	During both Water Shortage and Drought Conditions

Appeals Procedure

1. Any person who wishes to appeal a customer classification or allotment shall do so in writing by using the forms provided by MCWD.

2. Appeals will be reviewed by the District staff. Site visits may be scheduled if required.

3. A condition of granting an appeal shall be that all plumbing fixtures or irrigation systems be replaced or modified for maximum water conservation.

4. Examples of appeals that may be considered are as follows:

a. Substantial medical requirements.

b. Commercial/Industrial/Institutional accounts where any additional water supply reductions will result in unemployment or inappropriate hardship, after confirmation by the MCWD staff that the account has instituted all applicable water efficiency improvements.

5. In the event an appeal is requested for irrigation of trees or vegetation, MCWD staff may use the services of a qualified consultant in determining the validity of the request. Costs for such consulting services shall be paid by the party or parties making the request.

6. District staff shall refer all appeals to the Water Conservation Commission. The Water Conservation Commission may refer appeals to MCWD's Board of Directors.

7. If the Water Conservation Commission and the applicant are unable to reach accord, then the appeal shall be heard by the MCWD Board of Directors, who will make the final determination.

8. All appeals shall be reported monthly to the Board as a part of the Water Supply Report.

5.0 MANDATORY PROHIBITIONS ON WATER USE

California Water Code Section 10632(a)(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning. Section 10632(b) Commencing with the urban water management plan update due December 31, 2015, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code. Section 10632(a)(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

The MCWD adopted a "Water Waste/Water Conservation" Ordinance (Ordinance No. 20) in April of 1990, which prohibits water waste and promotes water conservation. Since the initial adoption, revisions were adopted by the Board of Directors on April 14, 1992 and October 4, 1993. The ordinance has most recently been revised on and now appears as Chapter 3.36 of MCWD Code. Section 3.36.030, Mandatory Restrictions on Water Waste, details the applicable prohibitions of use. These prohibitions are in force at all times. Additional water use reduction methods available to water users or MCWD to adopt in order to comply with use reductions during the more restrictive stages of water shortages (Stages 4 and 5) include, but are not limited to, the following:

a) elimination of turf irrigation with potable supplies;

b) restriction of landscape watering to shrubs and trees by hand or drip irrigation only;

c) elimination of vehicle washing except in car washes that have water recirculation

systems;

d) prohibition on filling or topping off of swimming pools where damage to pumping equipment will not result;

e) elimination of the issuance of construction meters;

f) shut-off of dedicated landscape irrigation meters; and

g) moratorium on provision of new supply meters.

If water use reductions called for in Stages 3-5 are not achieved, the MCWD may amend this Water Shortage Contingency Plan to make any of the above available conservation tactics mandatory.

6.0 PENALTIES OR CHARGES FOR EXCESSIVE USE

California Water Code Section 10632(a)(6) Penalties or charges for excessive use.

Section 3.36.050 of MCWD Code provides for a system of violations and notices. Violation of provisions of this Water Shortage Contingency Plan shall be enforced under Section 3.36.050 of MCWD Code.

7.0 REVENUE AND EXPENDITURE IMPACTS

California Water Code Section 10632(a)(7) – An analysis of the impacts of each of the actions and conditions described in subdivisions (a)(1) to (a)(6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

Enforcement of the Water Shortage Contingency Plan is assumed to be covered by enhanced revenues from application of excess use charges and penalties. MCWD reserves may be used temporarily should revenues remain below expectations. MCWD's rate structure is based upon adopted rate ranges and allows for modification of rates on short notice within those ranges. MCWD retains the ability to modify rates to meet all legitimate MCWD needs. Revenue impacts from water sales losses are estimated as follows, based upon Tier 2 rates of $2.79/hcf in Central Marina and $3.27/hcf in the Ord Community, and recognizing approximately 10% of MCWD's customers are not metered as of 2013.

Table 3: Potential Revenue Impacts of Implementation of WSCP

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Assumed Reduction	10 percent	20 percent	30 percent	40 percent	50 percent
Water Sales Loss	$579,804	$1,159,607	$1,739,411	$2,319,215	$2,899,018
Revenue Source: Pumping savings at $135/af	$57,807	$115,614	$173,421	$231,228	$289,035
Net Revenue Reduction	$521,997	$1,043,993	$1,565,990	$2,087,987	$2,609,983

Percent of Total Annual Water System Revenue	6%	12%	18%	24%	30%

* Table based on FY2012-13 water sales, $8,839,268 for 4,282 acre-feet

8.0 WATER SHORTAGE CONTINGENCY PLAN IMPLEMENTATION

California Water Code Section 10632 (a)(8) A draft water shortage contingency resolution or ordinance.

MCWD Board of Directors adopted the Water Shortage Contingency Plan in Resolution No. 2014-__, which enables implementation of the Plan upon advice of staff based in part on the triggering mechanisms discussed herein. The resolution is attached as Appendix A to this Plan.

Chapter 3.36.035 of the MCWD Code of Ordinances[2] provides for enforcement of the current Water Shortage Contingency Plan. Chapter 2.09 of the Code of Ordinances[3] contains a sample ordinance which may be adopted in the event of a local emergency, including a water shortage.

9.0 WATER USE MONITORING PROCEDURES

California Water Code Section 10632* (a)(9) *A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency plan.

Normal Monitoring Procedure:

In normal water supply conditions, production figures are recorded daily by MCWD O&M personnel. Totals are reported monthly to the O&M Superintendent. Production figures are reported in the Annual Report to the Drinking Water Program, which is submitted to the SWRCB Division of Drinking Water each year.

Stage 1 and 2 Water Shortages

During a Stage 1 or 2 water shortage, daily production figures will be reported to the O&M Superintendent. The O&M Superintendent compares the weekly production to the target weekly production to verify that the reduction goal is being met. Monthly reports are forwarded to the District Engineer and the General Manager, the Water Conservation Commission and the MCWD Board of Directors. If reduction goals are not met, the General Manager may notify the Board of Directors so that corrective action can be taken.

Stage 3 and 4 Water Shortages

During a Stage 3 or 4 water shortage, the procedure listed above will be followed, with the addition of a daily production report to the General Manager and weekly reports to the Water Conservation Commission and Board of Directors. Special meetings may be called for administration of the

[2] Ordinance 41, adopted in 2005
[3] Ordinance 44, adopted in 2007

Water Shortage Contingency Plan.

Stage 5 Water Shortage

During a Stage 5 shortage, production figures will be reported to the O&M Superintendent hourly, and to the General Manager daily. Reports will also be provided to MCWD's Board of Directors, the Monterey County Office of Emergency Services, and land use jurisdictions located within MCWD's service territory.

November 3, 2014

Resolution No. 2014-34
Resolution of the Board of Directors
Marina Coast Water District
Declaring Water Conservation Stage 3 as Required by the State Water Resource Control Board's Emergency Mandatory Water Conservation Regulations

RESOLVED by the Board of Directors ("Directors") of the Marina Coast Water District ("MCWD"), at a regular meeting duly called and held on November 3, 2014, at 211 Hillcrest Avenue, Marina, California as follows:

WHEREAS, the State Water Resources Control Board (SWRCB) adopted Mandatory Water Conservation Regulations (Emergency Regulations), which went into effect on July 29, 2014; and,

WHEREAS, the District supplies more than 3,000 acre-feet of water annually and, therefore, the District is classified as an "urban water supplier" pursuant to Water Code Section 10617; and,

WHEREAS, the Emergency Regulations specifically require the following:

> To promote water conservation, each urban water supplier shall implement all requirements and actions of the stage of its water shortage contingency plan that imposes mandatory restrictions on outdoor irrigation of ornamental landscapes or turf with potable water.

WHEREAS, on November 3, 2014, the District adopted a Water Shortage Contingency Plan (District Plan) pursuant to Water Code Section 10632; and,

WHEREAS, under the District Plan, mandatory restrictions on outdoor irrigation of ornamental landscapes or turf with potable water are not required until Stage 3; and,

WHEREAS, the District' water supply is not actually experiencing a severe water shortage; and,

WHEREAS, the Emergency Regulations require the Board of Directors to declare a Water Conservation Stage 3 even though the District is not actually experiencing a severe water shortage.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Marina Coast Water District does hereby do the following:

1. Declare a Water Conservation Stage 3 under the District Plan as mandated by the SWRCB.

2. Find that since the District's water supply is not actually experiencing a severe water shortage, the following Stage 3 requirements shall **not** be implemented at this time, but shall be subject to periodic review by the Board of Directors:

a. "Each water service connection shall receive an allotted quantity of water, typically specified in hundred cubic feet (hcf) units per billing cycle."

b. "No building permits will be issued or meters installed for new accounts that had not received building permits before the 'Severe Shortage' was declared."

3. The Stage 3 mandatory water use restrictions set forth in the District Plan's restrictions table for Stage 3 shall be implemented effective with the adoption of this Resolution.

4. Direct staff to notify all customers in writing of this decision within 10 days of the date of adoption.

PASSED AND ADOPTED on November 3, 2014 by the Board of Directors of the Marina Coast Water District by the following roll call vote:

Ayes: Directors Le, Shriner, Moore

Noes: Directors None

Absent: Directors Gustafson, Lee

Abstained: Directors None

Thomas P. Moore, President

ATTEST:

Brian C. Lee, Deputy Secretary

CERTIFICATE OF SECRETARY

The undersigned Secretary of the Board of the Marina Coast Water District hereby certifies that the foregoing is a full, true and correct copy of Resolution No. 2014-34 adopted November 3, 2014.

Brian C. Lee, Deputy Secretary

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Appendix G: DWR Urban Water Management Plan Checklist

Checklist arranged by Water Code Section

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Sections 5 and 7
Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Section 1
Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Resolution of Plan Adoption is in Appendix A
Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.2 and Appendix D
Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 2.2 and Appendix D

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2.3 & Appendix D
Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	N/A
Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 3.1
Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.2
Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.3
Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.4
Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 3.3 & 4.4
Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Setion 3.4
Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.1
Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Appendix G Table 4-4
Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System Water Use	Section 4.2

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4.2
Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Appendix G Table 4-4
Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4, Table 4.7
Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 6.8
Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Section 4.4
Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 4.4
Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	N/A
Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 4.4

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Compliance tables are in Appendix G
Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 6.1
Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.	System Supplies	Section 6.1
Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	N/A
Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Sections 5.4, 5.5, 5.6
Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Sections 5.4, 5.5, 5.6, Appendix G Table 6-9
Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 5.1, 5.2
Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 5.2

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 5.2
Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	N/A
Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 5.2
Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 5.2
Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 5.2
Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 5.3
Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 5.5
Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 5.5
Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 5.5

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 5.5, Appendix G Tables 6-4, 6-5, 6-6
Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 5.6
Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 5.6
Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 5.7
Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 5.6
Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Sections 5.5, 5.6, 5.7
Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Appendix I
Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 5.2.5, 5.2.6 & 6.2

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	N/A – no imported supply.
Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 6.4
Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 6.7
Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 6.1
Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 6.1
Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 6.1
Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Section 6.1

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Section 6.5 & Appendix F
Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Section 6.8
Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Section 6.5.2 & Appendix F
Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix F
Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Section 6.8
Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Section 6.5, Appendix F & Appendix G Table 8.1
Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix G Table 8.1

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix G Table 8.3
Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix G Table 8.2
Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix F
Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Section 6.5 & Appendix F
Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Section 6.5 and Appendix G Table 8-2
Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Section 6.6 & Appendix E.4
Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Section 6.5 & Appendix F
Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Section 6.5 & Appendix F
Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Section 6.5 & Appendix F
Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix F

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix F
Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix F
Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 6.5.4 & Appendix F
Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix F
Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Appendix F
Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix F
Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Section 6.5 & Appendix F
Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	WSCP is in Appendix F of the UWMP, which is provided to cities and county

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	WSCP/UWMP is available on MCWD's website
Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Section 7.2
Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Targets were adopted in 2011. Hearing was May 10, 2011
Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Notices sent in January 2021. See Appendix D
Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Scheduled for adoption at the 6/21/2021 board meeting
Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Notices are in Appendix D
Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Notices are in Appendix D

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Resolution of adoption is in Appendix A
Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Transmittal is in Appendix D
Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Transmittal is in Appendix D
Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Electronic submission will be made in July 2021
Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Plan will be posted to the District website
Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Plan will be posted to the District website
Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	N/A
Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	N/A

Appendix H: Standardized Data Tables and SB X7-7 Verification and Compliance Forms

The following tables are provided, as required by the Department of Water Resources 2020 UWMP Guidebook for Urban Water Suppliers. Only the tables applicable to MCWD are included, as listed below.

DWR Reporting Tables: 2-1, 2-2, 2-3, 2-4, 3-1, 4-1, 4-2, 4-3, 4-4, 4-5, 5-1, 5-2, 6-1, 6-2, 6-3, 6-4, 6-5, 6-6, 6-7, 6-8, 6-8ds, 6-9, 7-1, 7-2, 7-3, 7-4, 8-1, 8-2, 8-3, 10-1

SB X7-7 Verification Tables (from 2015 UWMP): 0, 1, 2, 3, 4, 4-A, 5, 6, 7, 7-E, 7-F, 8, 9

SB X7-7 Compliance Tables: 0, 2, 3, 4, 4-A, 5, 9

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
Add additional rows as needed			
CA 2710017	Marina Coast Water District	9,442	3,102
CA 2790009	MCWD - Recycled	-	0
	TOTAL	9,442	3,102
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES:			

Submittal Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* (select from drop down list)
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES:			

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP * (select from drop down)	
Unit	AF
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*	
NOTES:	

Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
Add additional rows as needed
Monterey One Water, System No. CA 2790002
NOTES:

Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	36,646	50,131	58,012	66,717	73,183	
NOTES:						

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable[1] Water - Actual			
Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume[2]
Add additional rows as needed			
Single Family		Drinking Water	1,179
Multi-Family		Drinking Water	938
Commercial		Drinking Water	325
Industrial		Drinking Water	1
Institutional/Governmental		Drinking Water	138
Landscape		Drinking Water	523
Losses		Drinking Water	187
		TOTAL	3,291

[1] *Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.*

[2] *Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

Submittal Table 4-2 Retail: Use for Potable and Non-Potable[1] Water - Projected

Use Type	Additional Description (as needed)	Projected Water Use[2] *Report To the Extent that Records are Available*				
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family		2,214	2,650	2,923	3,173	
Multi-Family		1,401	1,676	2,064	2,332	
Commercial		1,009	1,764	2,095	2,235	
Industrial		68	254	263	272	
Institutional/Governmental		220	258	281	292	
Landscape		556	306	172	68	
Losses		374	380	380	380	
TOTAL		5,841	7,289	8,179	8,754	0

[1] Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. *[2] Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable *From Tables 4-1R and 4-2 R*	3,291	5,841	7,289	8,179	8,754	0
Recycled Water Demand[1] *From Table 6-4*	0	600	953	1,140	1,270	0
Optional Deduction of Recycled Water Put Into Long-Term Storage[2]						
TOTAL WATER USE	3,291	6,441	8,242	9,319	10,024	0

[1] Recycled water demand fields will be blank until Table 6-4 is complete *[2] Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier **may** deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.*

NOTES: 450 AFY of recycled water use is in lieu recharge for the Seaside Groundwater Basin. The City of Seaside will be providing an equal volume of potable supply in exchange.

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss [1,2]
01/2016	240.8
01/2017	260.3
01/2018	353.8
01/2019	342.6
01/2020	190.3
[1] *Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.* [2] ***Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*	
NOTES: Year 2020 value is gross water loss. Auditted annual reprot has not yet been rpepared.	

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Submittal Table 5-1 Baselines and Targets Summary
From SB X7-7 Verification Form
Retail Supplier or Regional Alliance Only

Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	*1999*	*2008*	*135*	*117*
5 Year	*2008*	*2008*	*133*	

**All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*

NOTES:

Submittal Table 5-2: 2020 Compliance **From** **SB X7-7 2020 Compliance Form** *Retail Supplier or Regional Alliance Only*				
2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* *(Adjusted if applicable)*		
80.2	*0*	*80.2*	*117*	*YES*
**All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)*				
NOTES:				

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
☐	All or part of the groundwater described below is desalinated.					
Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Add additional rows as needed						
Alluvial Basin	SVGB - Monterey Subbasin	3025	3238.6	3404.9	3189.5	3291.4
	TOTAL	3,025	3,239	3,405	3,190	3,291
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020	
☐	There is no wastewater collection system. The supplier will not complete the table below.
100	Percentage of 2020 service area covered by wastewater collection system *(optional)*
100	Percentage of 2020 service area population covered by wastewater collection system *(optional)*

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
MCWD-Marina	Metered	1,205	Monterey One Water	M1W Regional Treatment Plant	No	No
MCWD-Ord	Metered	970	Monterey One Water	M1W Regional Treatment Plant	No	No
MCWD-Airport	Estimated	4	Monterey One Water	M1W Regional Treatment Plant	No	No
Total Wastewater Collected from Service Area in 2020:		2,179				

**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3* **.**

NOTES: two non-residential sites are on septic, but account for less than 0.1% of total annual water use.

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020

☑ **No wastewater is treated or disposed of within the UWMP service area.** The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)* [2]	Method of Disposal ***Drop down list***	Does This Plant Treat Wastewater Generated Outside the Service Area? ***Drop down list***	Treatment Level ***Drop down list***	2020 volumes [1]				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
						Total	0	0	0	0	0

[1] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.

[2] If the **Wastewater Discharge ID Number** is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility

NOTES:

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area

☐ Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Supplier Producing (Treating) the Recycled Water:	Monterey One Water, System CA 279002
Name of Supplier Operating the Recycled Water Distribution System:	Marina Coast Water District, System CA 2790009
Supplemental Water Added in 2020 (volume) *Include units*	0 AF
Source of 2020 Supplemental Water	NA

Beneficial Use Type *Insert additional rows if needed.*	**Potential** Beneficial Uses of Recycled Water (Describe)	Amount of **Potential** Uses of Recycled Water (Quantity) *Include volume units* [1]	General Description of 2020 Uses	Level of Treatment *Drop down list*	2020 [1]	2025 [1]	2030 [1]	2035 [1]	2040 [1]	2045 [1] (opt)
Agricultural irrigation										
Landscape irrigation (exc golf courses)		1500 AF		Advanced	0	150	503	690	820	
Golf course irrigation		450 AF		Advanced	0	450	450	450	450	
Commercial use										
Industrial use										
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment										
Wetlands or wildlife habitat										
Groundwater recharge (IPR)										
Reservoir water augmentation (IPR)										
Direct potable reuse										
Other (Description Required)										
				Total:	0	600	953	1,140	1,270	0
				2020 Internal Reuse	0					

[1] ***Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES: Golf course use is in lieu recharge for the Seaside Groundwater Basin. The City of Seaside will provide an equal volume of potable water bask to MCWD to supply City of Seaside developments.

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual

☐	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.

Beneficial Use Type	2015 Projection for 2020 [1]	2020 Actual Use[1]
Insert additional rows as needed.		
Agricultural irrigation		
Landscape irrigation (exc golf courses)	150	0
Golf course irrigation	450	0
Commercial use		
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)		
Total	600	0

[1] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.

NOTE: MCWD was still constructing the recycled water distribution system in 2020.

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
Add additional rows as needed			
RUWAP Phase 1	Build RW Distribution System	2022	150
RUWAP Phase 2	Expand Treatment Plant	2030	891
In lieu recharge	Replace GW use for golf course with RW	2022	450
		Total	1,491
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES:			

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Supplier* *This may be a range*
	Drop Down List (y/n)	*If Yes, Supplier Name*				
Add additional rows as needed						
RUWAP Phase 2	Yes	Monterey One Water	Recycled Water	2030	All Year Types	891
RUWAP Desalination	No		Seawater Desalination	2030	All Year Types	1,500
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: RUWAP = Regional Urban Water Augmentation Project						

Submittal Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
Drop down list May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Groundwater (not desalinated)	SVGB-Monterey Subbasin	3,291	Drinking Water	9,620
	Total	3,291		9,620
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*				
NOTES:				

OPTIONAL Table 6-8ds: Source Water Desalination

☑	Neither groundwater nor surface water are reduced in salinity prior to distribution.									
Plant Name or Well ID	Plant Capacity	Intake Type *Drop down list*	Source Water Type *Drop down list*	Influent TDS	Brine Discharge *Drop down list*	Volume of Water Desalinated				
						2016	2017	2018	2019	2020
					Total	0	0	0	0	0

**Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

Notes:

Submittal Table 6-9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		**2025**		**2030**		**2035**		**2040**		**2045** (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Groundwater (not desalinated)	SVGB-M, Central Marina	3,020	3,020	3,020	3,020	3,020	3,020	3,020	3,020		
Groundwater (not desalinated)	SVGB-M, Ord Community	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600		
Groundwater (not desalinated)	SVGB-M, Armstrong Ranch	680	920	680	920	680	920	680	920		
Groundwater (not desalinated)	SVGB-M, CEMEX	500	500	500	500	500	500	500	500		
Exchanges	SVGB-S Golf Course	450	450	450	450	450	450	450	450		
Recycled Water	M1W - AWPF	600	600	953	1,427	1,140	1,427	1,270	1,427		
Desalinated Water - Groundwater	Seawater-intruded groundwater	0	0	0	0	394	1,500	483	1,500		
	Total	11,850	12,090	12,203	12,917	12,784	14,417	13,003	14,417	0	0

***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES: SVGB-M = Groundwater from Salinas Valley Groundwater Basin - Monterey Subbasin
SVGB-S = Groundwater from Salinas Valley Groundwater Basin - Seaside Subbasin (exchange recycled water for golf course irrigation for potable supply)

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	**Base Year** If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	**Available Supplies if Year Type Repeats**	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		☑	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	**% of Average Supply**
Average Year	2012	10900	100%
Single-Dry Year	2013	10900	100%
Consecutive Dry Years 1st Year	2013	10900	100%
Consecutive Dry Years 2nd Year	2014	10900	100%
Consecutive Dry Years 3rd Year	2015	10900	100%
Consecutive Dry Years 4th Year	2016	10900	100%
Consecutive Dry Years 5th Year	2017	10900	100%

Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

***Units of measure (AF, CCF, MG**) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES: Table includes existing groundwater supply plus Phase 1 recycled water project

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals (*autofill from Table 6-9)*	11,850	12,203	12,784	13,003	0
Demand totals *(autofill from Table 4-3)*	6,441	8,242	9,319	10,024	0
Difference	5,409	3,961	3,465	2,979	0
NOTES:					

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	10,900	10,900	10,900	10,900	
Demand totals*	5,991	7792	8,869	9,574	
Difference	4,909	3,108	2,031	1,326	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*					
NOTES:					

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	10,900	10,900	10,900	10,900	
	Demand totals	6,111	7,948	9,046	9,765	
	Difference	4,789	2,952	1,854	1,135	0
Second year	Supply totals	10,900	10,900	10,900	10,900	
	Demand totals	5,392	7,013	7,982	8,616	
	Difference	5,508	3,887	2,918	2,284	0
Third year	Supply totals	10,900	10,900	10,900	10,900	
	Demand totals	4,733	6,156	7,006	7,563	
	Difference	6,167	4,744	3,894	3,337	0
Fourth year	Supply totals	10,900	10,900	10,900	10,900	
	Demand totals	4,613	6,000	6,829	7,372	
	Difference	6,287	4,900	4,071	3,528	0
Fifth year	Supply totals	10,900	10,900	10,900	10,900	
	Demand totals	4,613	6,000	6,829	7,372	
	Difference	6,287	4,900	4,071	3,528	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)

2021	Total
Total Water Use	3,535
Total Supplies	10,900
Surplus/Shortfall w/o WSCP Action	7,365
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	7,365
Resulting % Use Reduction from WSCP action	0%

2022	Total
Total Water Use	3,712
Total Supplies	10,900
Surplus/Shortfall w/o WSCP Action	7,188
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	7,188
Resulting % Use Reduction from WSCP action	0%

2023	Total
Total Water Use	3,898
Total Supplies	10,900
Surplus/Shortfall w/o WSCP Action	7,002
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	7,002
Resulting % Use Reduction from WSCP action	0%

2024	Total
Total Water Use	4,093
Total Supplies	10,900
Surplus/Shortfall w/o WSCP Action	6,807
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	6,807
Resulting % Use Reduction from WSCP action	0%

2025	Total
Total Water Use	4,297
Total Supplies	10,900
Surplus/Shortfall w/o WSCP Action	6,603
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	6,603
Resulting % Use Reduction from WSCP action	0%

Submittal Table 8-1
Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions (*Narrative description*)
1	Up to 10%	Baseline: offer rebate and retrofit programs Baseline: Enforce restrictions on Water Waste Provide public information mailers, e-mails and media events Call for voluntary reductions of up to 10%
2	Up to 20%	Add call for voluntary reductions of up to 25% Increase public information campaign Increase enforcement of prohibitions on water waste
3	Up to 30%	Add mandatory restrictions at 25%: Establish water budgets per customer type Limit landscape watering to 2x/week if using potable water Budget large landscapes (golf/sports) to 80% of normal
4	Up to 40%	Add mandatory restrictions at 35%: Establish water budgets per customer type Limit landscape watering to 1x/week if using potable water Budget large landscapes (golf/sports) to 70% of normal
5	Up to 50%	All above plus hotel linen exchange limits, prohibit fountain filling, consider moratorium on new connections, limit vehicle washing
6	>50%	Add mandatory restrictions at 50%: No landscape watering with potable water Budget large landscapes to 60% of normal Add limits on hotel linen, pool/fountain filling, construction

NOTES: MCWD's WSCP has 5 stages of action:
1 = 0 - 10%, 2 = 10 - 25%, 3 = 25 - 35%, 4 = 35 - 50%, 5 > 50%

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only*** *Drop Down List*
Add additional rows as needed				
1	Provide Rebates on Plumbing Fixtures and Devices	1%	Incentive Program	No
1	Provide Rebates for Landscape Irrigation Efficiency	0.50%	Incentive Program	No
1	Provide Rebates for Turf Replacement	0.50%	Incentive Program	No
1	Offer Water Use Surveys	0.50%	Customer Service	No
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Baseline under District code		Yes
1	Landscape - Limit landscape irrigation to specific times	Baseline under District code		Yes
1	CII - Lodging establishment must offer opt out of linen service	Baseline under District code		Yes
1	CII - Restaurants may only serve water upon request	Baseline under District code		Yes
1	CII - Commercial kitchens required to use pre-rinse spray valves	Baseline under District code		Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Baseline under District code	Decorative features must recirculate, not once through	Yes
1	Pools and Spas - Require covers for pools and spas	Baseline under District code		Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Baseline under District code		Yes
1	Other - Require automatic shut of hoses	Baseline under District code		Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Baseline under District code		Yes
1	Expand Public Information Campaign	7.50%	Voluntary reductions	No
2	Expand Public Information Campaign	17.50%	Voluntary reductions	No
3	Landscape - Limit landscape irrigation to specific days	8%	2 days/week	Yes
3	Landscape - Other landscape restriction or prohibition	20% reduction for Large landscapes (golf/sports fields)	No restriction on recycled water	Yes
3	Landscape - Prohibit certain types of landscape irrigation	1%	No irrigation of parkway strips and medians	Yes
3	Landscape - Limit landscape irrigation to specific days	Newly planted landscapes exception	3 days/week for 5 weeks, levels 3-6	Yes
3	Other water feature or swimming pool restriction	Prevents added use	No initial filling of new pools and spas	Yes
3	Other water feature or swimming pool restriction	Prevents added use	No initial filling of fountains over 20 gallons	Yes
3	Moratorium or Net Zero Demand Increase on New Connections	Prevents added use	May occur at Level 3 or later	Yes
3	Reduce System Water Loss	1%		No
3	Increase Water Waste Patrols	Enforcement of codes		Yes
3	Implement or Modify Drought Rate Structure or Surcharge	1%	May occur at Level 3 or later	Yes
3	Expand Public Information Campaign	added public noticing		No
4	Landscape - Limit landscape irrigation to specific days	16% (up from 8%)	1 day/week	Yes
4	Landscape - Other landscape restriction or prohibition	30% reduction for Large landscapes (golf/sports fields)	No reduction on recycled water	Yes
4	CII - Other CII restriction or prohibition	1% Limit linen exchange at hotels to once every 2 days		Yes
4	Decrease Line Flushing	0.50%		No
4	Other	5%, set water budgets for large customers		No
6	Landscape - Prohibit all landscape irrigation	24% (up from 16%)		Yes
6	Landscape - Other landscape restriction or prohibition	40% reduction for Large landscapes (golf/sports fields)		Yes
6	CII - Other CII restriction or prohibition	1.5% Limit linen exchange at hotels to once every 3 days		Yes
6	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	1%	Recycled water facilities still allowed	Yes

NOTES:
Shortage Level 1 programs continue in all levels.
Shortage Level 2 to 5 actions continue into higher levels
MCWD Stage 4 is 35% to 50% shortage, which is State Levels 4 and 5, so all actions are listed in Level 4

Submittal Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
6	Other Actions (describe)	10%	Purchase and distribute bottled water (catastrophic system failure)
6	Other Actions (describe)	Maintains existing supply	Add treatment if seawater intrusion approaches wells
NOTES: MCWD is self supplied with groundwater. Obtaining supply from adjacent jurisdictions is an option during a brief system failure but not during an extended drought which would affect all suppliers.			

Submittal Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Marina	Yes	Yes
Seaside	Yes	Yes
Del Rey Oaks	Yes	Yes
Monterey	Yes	Yes
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Monterey County	Yes	Yes
NOTES:		

SB X7-7 Table 0: Units of Measure Used in UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent with Table 2-3*
NOTES:

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	4,102	Acre Feet
	2008 total volume of delivered recycled water	0	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period[1]	10	Years
	Year beginning baseline period range	1999	
	Year ending baseline period range[2]	2008	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range[3]	2008	

[1] *If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.*

[2] *The ending year must be between December 31, 2004 and December 31, 2010.*

[3] *The ending year must be between December 31, 2007 and December 31, 2010.*

NOTES:

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☑	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☑	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES: Service area crosses multiple jurisdictions. All of the City of	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1999	28,657
Year 2	2000	29,137
Year 3	2001	29,416
Year 4	2002	29,648
Year 5	2003	29,613
Year 6	2004	29,633
Year 7	2005	29,477
Year 8	2006	29,154
Year 9	2007	29,065
Year 10	2008	29,533
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	29,633
Year 2	2005	29,477
Year 3	2006	29,154
Year 4	2007	29,065
Year 5	2008	29,533
2015 Compliance Year Population		
2015		32,375
NOTES:		

SB X7-7 Table 4: Annual Gross Water Use *								
	Baseline Year *Fm SB X7-7 Table 3*	**Volume Into Distribution System** *Fm SB X7-7 Table(s) 4-A*	**Deductions**					**Annual Gross Water Use**
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water *Fm SB X7-7 Table 4-B*	Water Delivered for Agricultural Use	Process Water *Fm SB X7-7 Table(s) 4-D*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	4637	0	0	0	0	0	4,637
Year 2	2000	4671.2	0	0	0	0	0	4,671
Year 3	2001	4513	0	0	0	0	0	4,513
Year 4	2002	4442.8	0	0	0	0	0	4,443
Year 5	2003	4329.7	0	0	0	0	0	4,330
Year 6	2004	4684.6	0	0	0	0	0	4,685
Year 7	2005	4188.1	0	0	0	0	0	4,188
Year 8	2006	4295.3	0	-1	0	0	0	4,296
Year 9	2007	4563	0	0	0	0	0	4,563
Year 10	2008	4102.2	0	0	0	0	0	4,102
Year 11	0	0			0		0	0
Year 12	0	0			0		0	0
Year 13	0	0			0		0	0
Year 14	0	0			0		0	0
Year 15	0	0			0		0	0
10 - 15 year baseline average gross water use								**2,962**
5 Year Baseline - Gross Water Use								
Year 1	2004	4,685	0	0	0	0	0	4,685
Year 2	2005	4,188	0	0	0	0	0	4,188
Year 3	2006	4,295	0	0	0	0	0	4,295
Year 4	2007	4,563	0	0	0	0	0	4,563
Year 5	2008	4,102	0	0	0	0	0	4,102
5 year baseline average gross water use								**4,367**
2015 Compliance Year - Gross Water Use								
2015		3,228	0	0	0	0	0	3,228
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								
NOTES: All water supply from District-owned wells. Removed E tank in 2008 (250kgal)								

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)
Complete one table for each source.

Name of Source	Salinas Valley Groundwater Basin
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	4637		4,637
Year 2	2000	4671.2		4,671
Year 3	2001	4513		4,513
Year 4	2002	4442.8		4,443
Year 5	2003	4329.7		4,330
Year 6	2004	4684.6		4,685
Year 7	2005	4188.1		4,188
Year 8	2006	4295.3		4,295
Year 9	2007	4563		4,563
Year 10	2008	4102.2		4,102
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0
5 Year Baseline - Water into Distribution System				
Year 1	2004	4684.6		4,685
Year 2	2005	4188.1		4,188
Year 3	2006	4295.3		4,295
Year 4	2007	4563		4,563
Year 5	2008	4102.2		4,102
2015 Compliance Year - Water into Distribution System				
2015		3228.04		3,228

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1999	28,657	4,637	144
Year 2	2000	29,137	4,671	143
Year 3	2001	29,416	4,513	137
Year 4	2002	29,648	4,443	134
Year 5	2003	29,613	4,330	131
Year 6	2004	29,633	4,685	141
Year 7	2005	29,477	4,188	127
Year 8	2006	29,154	4,296	132
Year 9	2007	29,065	4,563	140
Year 10	2008	29,533	4,102	124
Year 11	0	0	0	
Year 12	0	0	0	
Year 13	0	0	0	
Year 14	0	0	0	
Year 15	0	0	0	
10-15 Year Average Baseline GPCD				**135**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2004	29,633	4,685	141
Year 2	2005	29,477	4,188	127
Year 3	2006	29,154	4,295	132
Year 4	2007	29,065	4,563	140
Year 5	2008	29,533	4,102	124
5 Year Average Baseline GPCD				**133**
2015 Compliance Year GPCD				
2015		32,375	3,228	89
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	135
5 Year Baseline GPCD	133
2015 Compliance Year GPCD	89
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☐	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☑	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-E: Target Method 3				
Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
☐		North Coast	137	130
☐		North Lahontan	173	164
☐		Sacramento River	176	167
☐		San Francisco Bay	131	124
☐		San Joaquin River	174	165
☑	100%	Central Coast	123	117
☐		Tulare Lake	188	179
☐		South Lahontan	170	162
☐		South Coast	149	142
☐		Colorado River	211	200
Target *(If more than one region is selected, this value is calculated.)*				**117**
NOTES:				

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target*	Calculated 2020 Target *Fm Appropriate Target Table*	Confirmed 2020 Target
133	126	117	117
** Maximum 2020 Target is 95% of the 5 Year Baseline GPCD*			
NOTES:			

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	2015 Interim Target GPCD
117	135	126
NOTES:		

SB X7-7 Table 9: 2015 Compliance								
		Optional Adjustments *(in GPCD)*						
Actual 2015 GPCD	2015 Interim Target GPCD	Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015?
89	126	*NA*	*NA*	*NA*	0	89.01338654	89.01338654	YES
NOTES:								

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*
NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate	
Method Used to Determine 2020 Population (may check more than one)	
☑	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☐	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	36,646
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use							
		2020 Deductions					
Compliance Year 2020	**2020 Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Exported Water ***	**Change in Dist. System Storage*** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use***	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	**2020 Gross Water Use**
	3,291	-	-	-	-	-	**3,291**
*** Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.							
NOTES: No deductions taken for indirect recycled or process water. Tables 4-B, 4-C and 4-D not used.							

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Salinas Valley Groundwater Basin, Monterey Subbasin
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	3,291	-	3,291

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.*

[2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
3,291	36,646	**80**
NOTES:		

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD (Enter "0" if Adjustment Not Used)			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
80	-	-	-	-	80	117	**YES**

[1] *All values are reported in GPCD*

[2] ***2020 Confirmed Target GPCD*** *is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.*

NOTES:

Appendix I: Voluntary Reporting of Energy Intensity

The MCWD water distribution system has five pressure zones, with eight water storage tanks and six booster pump stations. The District produces all of its water supply from groundwater wells. Treatment consists of chlorination to meet distribution system requirements. Some water is provided directly to customers in the lowest pressure zone, and the rest is boosted into the upper zones for storage and customer use. Power consumption for 2020 is tabulated below. Total water production for the year was 3,291 acre-feet. The portion of that supply boosted into the upper pressure zones was not metered or estimated.

2020 Water System Power Use

Component	kWh
Wells	1,936,251
Booster Pump Stations	1,064,802
SCADA (Controls)	20,000
Total	3,021,053

MCWD provides wastewater collection within its service area, but not treatment. Wastewater treatment is provided by Monterey One Water at the regional treatment plant. The MCWD wastewater collection system includes 20 pump stations. Power consumption for 2020 is tabulated below. Total wastewater conveyed for the year was 2,179 acre-feet.

2020 Wastewater System Power Use

Component	kWh
Lift Stations	335,732
SCADA	20,000
Total	355,732

DWR Standard Tables O-1A and O-2 are provided on the following pages.

Urban Water Supplier: *Marina Coast Water District*

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1A: Recommended Energy Reporting - Water Supply Process Approach

Enter Start Date for Reporting Period: 1/1/2020

End Date: 12/31/2020

☐ Is upstream embedded in the values reported?

		Urban Water Supplier Operational Control							
		Water Management Process						Non-Consequential Hydropower (if applicable)	
	Water Volume Units Used	Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process	AF	*3291.4*				*3291.4*	*6582.8*		*6582.8*
Energy Consumed (kWh)	*N/A*	*1936251*				*1084802*	*3021053*		*3021053*
Energy Intensity (kWh/vol. converted to MG)	*N/A*	*1805.4*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*1011.5*	*1408.4*	*#DIV/0!*	*1408.4*

Quantity of Self-Generated Renewable Energy

0 kWh

Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

Metered Data

Data Quality Narrative:

Water production is metered at the wells. Extract and Divert power is sum of metered power use at the wells. Distribution power use is the sum of metered power use at the booster pump stations and central SCADA office.

Narrative:

All water supply comes from groundwater wells.

Urban Water Supplier: *Marina Coast Water District*

Table O-2: Recommended Energy Reporting - Wastewater & Recycled Water					
Enter Start Date for Reporting Period	1/1/2020	**Urban Water Supplier Operational Control**			
End Date	12/31/2020	**Water Management Process**			
☐ Is upstream embedded in the values reported?		Collection / Conveyance	Treatment	Discharge / Distribution	Total
Volume of Water Units Used	AF				
Volume of Wastewater Entering Process (volume units selected above)		*2179*			*2179*
Wastewater Energy Consumed (kWh)		*355732*			*355732*
Wastewater Energy Intensity (kWh/volume coverted to MG)		*501.0*	*#DIV/0!*	*#DIV/0!*	*501.0*
Volume of Recycled Water Entering Process (volume units selected above)					*0*
Recycled Water Energy Consumed (kWh)					*0*
Recycled Water Energy Intensity (kWh/volume converted to MG)		*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*

Quantity of Self-Generated Renewable Energy related to recycled water and wastewater operations

0 kWh

Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

Combination of Estimates and Metered Data

Data Quality Narrative:

Wastewater flows are metered at two of three points of connection into the regional wastewater system. The connection from the Airport is not metered, so flow is estimated as 50% of the metered water use within the site. Power use is the sum of metered power use at the lift stations and at the SCADA radio stations.

Narrative:

MCWD provides wastewater collection only. Wastewater is conveyed to the regional treatment plant through the M1W system. Flows are metered where they enter the regional system.

Appendix J: Comments Received on the Draft Plan

___ verbal comment was submitted at the Public Hearing for the UWMP.

1. Mr. ___.

Response: __.

___ comment letters were received:

1.
2.

The letters are on the following pages. Responses follow each letter.