

ENVIRONMENTAL ASSESSMENT

For the Authorization of the National Pollutant
Discharge Elimination System Permit

for the

Monterey One Water Regional Wastewater
Treatment Plant and Advanced Water Purification
Facility

March 2019



Prepared for:
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Monterey, CA

March 29, 2019

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Abstract/Proposed Action Considered	The National Oceanic and Atmospheric Administration (NOAA), Office of National Marine Sanctuaries (ONMS), Monterey Bay National Marine Sanctuary (MBNMS) proposes to authorize the Central Coast Regional Water Quality Control Board's (RWQCB's) reissuance of a National Pollutant Discharge Elimination System (NPDES) permit (the Proposed Action). The permit reissuance includes provisions to allow the Advanced Water Purification Facility (AWPF) of the Pure Water Monterey (PWM) Project to operate at full-scale, including enabling the project proponent, Monterey One Water (M1W) to discharge waste stream generated by the AWPF to the ocean outfall.

The National Oceanic and Atmospheric Administration’s (NOAA) Office of National Marine Sanctuaries (ONMS) serves as the trustee for the thirteen national marine sanctuaries and two marine national monuments. Together these protected areas encompass more than 600,000 square miles of ocean and Great Lakes waters from Washington State to the Florida Keys, and from New England to American Samoa. National marine sanctuaries are special areas set aside for long-term protection and conservation and are part of our nation’s legacy to future generations. They contain deep ocean habitats of resplendent marine life, kelp forests, coral reefs, whale migration corridors, deep-sea canyons, historically significant shipwrecks, and other underwater archaeological sites. Each sanctuary is a unique place worthy of special protection. Because they serve as natural classrooms, cherished recreational spots and places for valuable commercial activities, national marine sanctuaries represent many things to many people. Organizationally, the national marine sanctuary system is divided into four regions: Northeast and Great Lakes; Southeast, Gulf of Mexico and Caribbean; West Coast; and Pacific Islands.



Monterey Bay National Marine Sanctuary, encompassing 6,094 square miles, is the second largest national marine sanctuary on the U.S. mainland, extending along the coastline from north of San Francisco to the south through five coastal counties to the town of Cambria. A remarkable diversity of marine habitats found nowhere else in North America is within the boundaries of the sanctuary and includes rugged rocky shores, sandy beaches, lush kelp forests, and most significantly, some of the deepest submarine canyons and the only protected seamount found on the Pacific continental shelf. The nutrient-rich currents traveling through the sanctuary allow for a diverse assemblage of marine life, including marine mammals, seabirds, shorebirds, turtles, numerous commercially-fished species and thousands of invertebrate species, some of which are listed as threatened or endangered under the Endangered Species Act. Monterey Bay National Marine Sanctuary staff coordinate multiple programs that engage with coastal residents, marine science partners, and businesses as diverse as agriculture, commercial fishing and recreation and tourism. While the sanctuary’s main office is located in Monterey, it operates additional offices and visitor centers in Santa Cruz and in San Simeon.

List of Acronyms and Abbreviations

AF	Acre-feet
AFY	Acre-feet Per Year
APE	Area of potential effects
AWPF	Advanced Water Purification Facility (also referred to as the Advanced Water Treatment Facility, or AWTF, in prior documents)
Basin	North Central Coast Air Basin
CalAm	California American Water Company
CDFW	California Department of Fish & Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Monterey County
CWA	Clean Water Act
CWSRF	Clean Water State Revolving Fund
DPS	Distinct Population Segment
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIR	Environmental Impact Review
ESA	Endangered Species Act
GIS	Geographic Information Systems
PWM Project	Pure Water Monterey Groundwater Replenishment Project
HMP	Habitat Management Plan
ITAs	Indian Trust Assets
MCWD	Marina Coast Water District
MBARD	Monterey Bay Air Resources District
MBNMS	Monterey Bay National Marine Sanctuary
MPWSP	Monterey Peninsula's Water Supply Project
MBTA	Migrating Bird Treaty Act
MGD	Million Gallons Per Day
MPWMD	Monterey Peninsula Water Management District
M1W	Monterey One Water (formerly Monterey Regional Water Pollution Control Agency, or MRWPCA)
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
Ocean Plan	The Water Quality Control Plan for Ocean Waters of California
OHP	Office of Historic Preservation
RM	River Mile
RWQCB	Regional Water Quality Control Board
Seaside Basin	Seaside Groundwater Basin
S-CCC	South-Central California Coast
SHPO	California State Historic Preservation Officer
SIP	State Implementation Plan
State Water Board	State Water Resources Control Board
Treatment Plant	M1W's Treatment Plant
USACOE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service

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1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared under the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 *et seq.*, to consider and evaluate potential impacts to the human environment of authorizing components of the Pure Water Monterey project, as described below.¹ The National Oceanic and Atmospheric Administration (NOAA), Office of National Marine Sanctuaries (ONMS), Monterey Bay National Marine Sanctuary (MBNMS, or “the sanctuary”) proposes to authorize the Central Coast Regional Water Quality Control Board’s (RWQCB’s) reissuance of a National Pollutant Discharge Elimination System (NPDES) permit (the Proposed Action). The permit reissuance includes provisions to allow the Advanced Water Purification Facility (AWPF)² of the Pure Water Monterey (PWM) Project to operate at full-scale,³ including enabling the project proponent, Monterey One Water (M1W), to discharge waste stream generated by the AWPF to the ocean outfall. This EA addresses the potential effects of the Proposed Action (MBNMS authorization of the NPDES permit reissuance) on the human environment. The reissued NPDES permit (Order No. R3-2018-0017/NPDES No. CA0048551) was adopted by the RWQCB on December 6, 2018. It would become effective on April 1, 2019, if authorized by MBNMS, and it will remain in effect until March 31, 2024. The project construction activities, which are currently occurring throughout the region, are not a subject of the Proposed Action. In addition, the operation of components other than the AWPF do not depend upon and are not affected by the issuance of an authorization for the NPDES permit reissuance; therefore, this EA is focused upon the environmental effects of operation of the AWPF, and in particular, on the discharge of effluent from the AWPF through the ocean outfall.⁴ On November 21, 2017, MBNMS received a Report of Waste Discharge (ROWD) from M1W which serves as a permit authorization application, per the MBNMS Water Quality Memorandum of Agreement (NOS MOA-2015-057/9803) (“MOA”) (included as **Appendix R**), for reissuance of NPDES Permit No. CA0048551. Per the MOA, on January 26, 2018, MBNMS issued a letter to M1W and the California Regional Water Quality Control Board, noting that MBNMS had received the ROWD and request for reissuance of the NPDES permit, that MBNMS would conduct a federal review

¹ This EA was prepared by Monterey One Water (M1W) for the National Oceanic and Atmospheric Administration’s (NOAA), Office of National Marine Sanctuaries (ONMS), Monterey Bay National Marine Sanctuary (MBNMS). Monterey One Water was formerly Monterey Regional Water Pollution Control Agency, or MRWPCA. Under NEPA regulations, 40 CFR 1506.5, agencies may permit an applicant to prepare an environmental assessment if the agency makes its own independent evaluation of the environmental issues and takes responsibility for the scope and content of the environmental assessment. The analyses in this EA were independently evaluated, reviewed, and revised by MBNMS staff and reflect the independent judgment of MBNMS. MBNMS is responsible for the scope, content, adequacy, and objectivity of the EA.

² Also, referred to as the Advanced Water Treatment Facility, or AWTF, in prior documents.

³ Full scale capacity of the AWPF is 5 MGD, but the plant will typically operate at somewhere between 3 and 4.5 MGD.

⁴ An analysis of potential cumulative impacts of the Proposed Action when considered in conjunction with cumulative projects is provided in section 3.3.

process under the MBNMS regulations and NEPA in consideration of issuing a proposed authorization of the permit, and that MBNMS may need additional information from M1W to complete the federal review process. On June 19, 2018, the RWQCB issued a public notice for the availability of Tentative Order No. R3-2018-0017, for the proposed adoption of Waste Discharge Requirements, including reissuance of the NPDES permit.

This EA has been prepared in accordance with NEPA (42 U.S.C. §4321 et seq.,) and its implementing regulations (40 CFR Parts 1500-1508). For purposes of this document, MBNMS is the NEPA lead agency. MBNMS regulations prohibit discharging or depositing material into waters of the MBNMS under Code of Federal Regulations (CFR) Title 15 Section 922.132(a)(2).⁵ Under 15 CFR 922.49, a person may conduct an otherwise prohibited activity in the MBNMS if the activity is specifically authorized by a valid Federal, State, or local lease, permit, license, or approval, subject to the process and requirements established in 15 CFR 922.49 and 922.134. Sections 922.49 and 922.134(b)(2) provide MBNMS with the authority to review applications for permits by any State authority by applicants proposing to conduct a prohibited activity under 15 CFR Section 922.132. Additionally, the Sanctuary and the RWQCB have entered into a memorandum of agreement (the MOA referenced above) that specifies how section 922.49 will be administered in accordance with the Regional Water Board review process.

Under NEPA, an EA is appropriate to determine whether a proposed action would have significant effects; if significant impacts would result from the proposed action, the agency must prepare an Environmental Impact Statement (EIS). If the EA demonstrates that the action would not have significant effects, the decision maker may prepare a Finding of No Significant Impacts (FONSI) to conclude the NEPA process. This EA will be used by MBNMS, along with other information developed in the formal administrative record (including the Report of Waste Discharge, the existing environmental review documents incorporated by reference below, interagency consultations and/or permits in compliance with the Endangered Species Act, Marine Mammal Protection Act, Magnuson Stevens Act, and the National Historic Preservation Act, among others), to decide whether or not to authorize the reissuance of the NPDES permit. If MBNMS finds that the Proposed Action does not result in individually or cumulatively significant effects, then it would issue a FONSI to help inform the authorization decision.

M1W is the project proponent and California Environmental Quality Act (CEQA) lead agency having approved the PWM Project⁶ on October 8, 2015 and approved changes to the PWM Project on October 30, 2017. M1W is dedicated to meeting the wastewater and water recycling needs of its member agencies while protecting the environment. M1W provides wastewater

⁵ The prohibition on discharging or depositing material into MBNMS is subject to specified exceptions not applicable here. 15 CFR 922.132.

⁶ M1W prepared a CEQA Final Environmental Impact Report on the PWM Project, available at <http://purewatermonterey.org/reports-docs/cfeir/>

treatment services to over 250,000 people; processes over 18.5 million gallons of wastewater each day; recycles approximately 4 billion gallons of water annually for crop irrigation; and protects public health, water quality, and the environment by meeting or exceeding numerous regulatory requirements. In 2017, the U.S. Bureau of Reclamation (USBR), developed an EA and issued a FONSI for their proposed action of providing funding for the proposed PWM Project. In their EA the USBR considered, as a potential cumulative project, the approval and authorization of the Monterey Peninsula Water Supply Project (MPWSP) desalination plant. As proposed, the MPWSP would include discharge of brine and effluent from the desalination treatment through the existing M1W outfall pipe; as such, the NPDES permit for the M1W discharge through the outfall pipe would need to be amended by the RWQCB before the MPWSP discharge would be allowed. The USBR determined that the PWM Project would potentially make a considerable contribution to significant cumulative impacts to marine water quality due to the potential exceedance of California Ocean Plan water quality objectives for several constituents if, in the future, the proposed MPWSP is constructed and placed into operation. However, the USBR further determined that with implementation of Mitigation Measure HS-C from the Pure Water Monterey EIR, the impact would be reduced to less than significant and the PWM Project would not make a considerable contribution to a significant cumulative impact. As discussed below, the USBR EA and the PWM EIR and Amendments are incorporated by reference in this document.

1.1 Background

M1W has an existing effective National Pollution Discharge Elimination System (NPDES) permit (**Order No. R3-2014-0013/NPDES No. CA0048551**) allowing secondary-treated effluent and hauled water treatment saline water to be discharged through M1W's discharge point, namely an existing ocean outfall. The currently effective version of the NPDES Permit was adopted by the RWQCB on May 22, 2014, became effective on August 1, 2014 and will expire on July 31, 2019. It was authorized by MBNMS on February 27, 2014. This NPDES permit (Order No. R3-2018-0017/NPDES No. CA0048551) was reissued on December 6, 2018 to include the additional discharge of AWPFF effluent and will become effective on April 1, 2019, if authorized by MBNMS. Secondary-treated effluent produced at the Treatment Plant and trucked saline water (e.g. softener regenerate wastes) and reverse osmosis (RO) concentrate are permitted to be discharged at one discharge point in the receiving water of the Pacific Ocean, specifically in MBNMS.

M1W is constructing the AWPFF as part of the PWM Project. The purpose of the PWM Project is to create a reliable supply of water, replacing certain water sources in northern Monterey County. The primary objective of the PWM Project is to replenish the Seaside Groundwater Basin, provide additional recycled water for agricultural irrigation, and help to prevent seawater

intrusion in the Salinas Valley Groundwater Basin. M1W has been in contact with the RWQCB since 2016 to provide advanced notice of the request for an amendment to their existing NPDES permit to authorize the discharge of reverse osmosis (RO) concentrate from the AWPf into MBNMS through its existing ocean outfall pipe. The RO concentrate would increase the initial dilution characteristics of the final effluent discharged in the outfall and would also increase the concentration of some constituents in the discharge. The net nitrogen and other constituents such as total suspended solids, biological oxygen demand, and pesticide loading to the Sanctuary would be reduced by the PWM Project because the new source waters (that would be diverted to and treated at the Treatment Plant by the PWM Project) currently flow, untreated to surface waters then to the Monterey Bay (Appendix P –Nitrogen Mass Balance, Trussell Technologies, 2018).

M1W would be able to meet current NPDES permit prohibitions, limitations, and discharge specifications, and receiving water limitations for a portion of the discharge generated from the AWPf. However, prior to full implementation of the PWM Project, new effluent limitations and minimum dilution factors are warranted due to new characteristics of the effluent to be discharged through the discharge point (the ocean outfall). Namely, total discharge with the AWPf RO concentrate would result in better dilution due to slightly higher salinity (but still positively buoyant) effluent within the zone of initial dilution. The draft permit would include four new allowable initial dilution factors based on the varying dilution characteristics of RO concentrate combined with varying amounts of secondary effluent and hauled saline waste flows. For more information, see the technical memorandum titled “Proposed Multiple Dm NPDES Permitting Approach to Address Discharges from Monterey One Water’s Pure Water Monterey Project” (Appendix Q -Trussell Technologies, 2017).

1.2 Previous Environmental Review and Documents Incorporated by Reference

The PWM Project has undergone substantial environmental review and regulatory compliance process. The following environmental documents were reviewed and are also hereby incorporated by reference into this EA:

- PWM Project EIR, prepared by M1W pursuant to CEQA (found at: <http://purewatermonterey.org/reports-docs/cfeir/>)

- Addendum No. 3⁷ to the PWM Project EIR, prepared by M1W (found at: <http://purewatermonterey.org/wp/wp-content/uploads/EIR-Addendum-NPDES-10-24-2017.pdf>)
- United States Bureau of Reclamation (USBR) Environmental Assessment/Finding of No Significant Impact (https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=28395)
- MPWSP Environmental Impact Statement/Environmental Impact Report, prepared by the California Public Utilities Commission and Monterey Bay National Marine Sanctuary (<https://montereybay.noaa.gov/resourcepro/resmanissues/desal-projects.html>)
- M1W NPDES Permit Report of Waste Discharge (ROWD) Package (November 2017), prepared by M1W and submitted to the RWQCB is found in Appendix R and includes:
 - Attachment 1. Pure Water Monterey Environmental Documentation
 - Attachment 2. Trussell Technical Memo for the Proposed Multiple Dilution NPDES Permitting Approach for Pure Water Monterey Waste Discharge – November 2017
 - Attachment 3. Larry Walker Associates Near-field Mixing Zone and Dilution Analysis Technical Memorandum – November 2017
 - Attachment 4. Trussell Ocean Plan Compliance Technical Memorandum – September 2017

A summary of each of these documents is provided below. These documents evaluate the potential impacts of the PWM Project, including both land-based impacts and impacts of the discharge through the ocean outfall. As such, the analyses and determinations contained in these documents are informative to MBNMS’s consideration of impacts of authorizing the reissued NPDES permit for PWM.

PWM Project EIR

Environmental review documents and permitting approvals include a certified Environmental Impact Report (EIR) that was prepared to meet the federal environmental review requirements of the Clean Water State Revolving Fund loan program that is partially funded through the Environmental Protection Agency (EPA). The 2013 through 2015 EIR document and preparation/review processes were compliant with the federal “CEQA-Plus” and “cross-cutters”

⁷ As a responsible agency for the project, Monterey Peninsula Water Management District, prepared their own Addenda to the certified PWM EIR (Addendum No. 1 and Addendum No.2) to approve components of the project that were not within M1W’s authority to implement or permit.

requirements of the EPA.⁸ The EIR process, including the subsequent Addenda to the EIR, provided the public and responsible and trustee agencies, including numerous federal agency contacts, with information on the potential environmental effects, mitigation measures and alternatives analysis of implementation of the PWM Project. Authorization of the NPDES permit reissuance addressing discharge changes due to the PWM Project is considered by ONMS/MBNMS in this document. A Notice of Determination for the EIR was filed on October 8, 2015 with the County Clerk and on October 9, 2015 with the State Office of Planning and Research. On October 30, 2017, changes to the PWM Project were approved with an Addendum to the EIR, described below. The Notice of Determination of the Addendum was filed on October 31, 2017. The 2017 PWM Project EIR is hereby incorporated by reference into the MBNMS EA.

The only significant and unavoidable impacts found under the EIR were those resulting from construction noise/vibration impacts for components that are no longer being implemented by M1W; the cumulative impacts determinations for marine water quality and marine biological resources were less than significant with mitigation. Mitigation measure HS-C requires that M1W not accept brine for discharge to the ocean, unless the MPWSP is designed and operated as required to meet Ocean Plan objectives and other NPDES permit requirements. For more information, see Appendix I (Trussell Tech, February 2015) and the PWM EIR found at: <http://purewatermonterey.org/reports-docs/cfeir/>.

Addendum No. 3 to the PWM Project EIR

Addendum No. 3 is a CEQA document that evaluated changes to the PWM Project approved by the M1W Board of Directors in October 2017 and the associated changes to the environmental analysis. The modifications to the PWM Project increased the operational capacity (peak or maximum product water flowrate) of the approved AWPf from 4.0 to 5.0 MGD. The AWPf capacity expansion would enable delivery of 600 AFY of purified recycled water to Marina Coast Water District (MCWD) for urban landscape irrigation by MCWD customers. The source water for the capacity expansion would come entirely from the return of MCWD's municipal wastewater. The modified project would allow (shared) use of product water storage and conveyance facilities, including Blackhorse Reservoir, with MCWD for the RUWAP and the PWM Projects. This addendum found that no subsequent or supplemental EIR is required for approval of the changes to the PWM Project because:

- The proposed project modifications would not require major revisions of the certified PWM EIR because the project modifications would not result in new significant

⁸ The federal environmental compliance for the PWM Project's funding through the CWSRF was completed under the CEQA-Plus process. Information concerning the CEQA-Plus process is available at: http://www.waterboards.ca.gov/water_issues/programs/grants_loans/cwsrf_requirements.shtml.

environmental effects or a substantial increase in the severity of previously identified environmental effects;

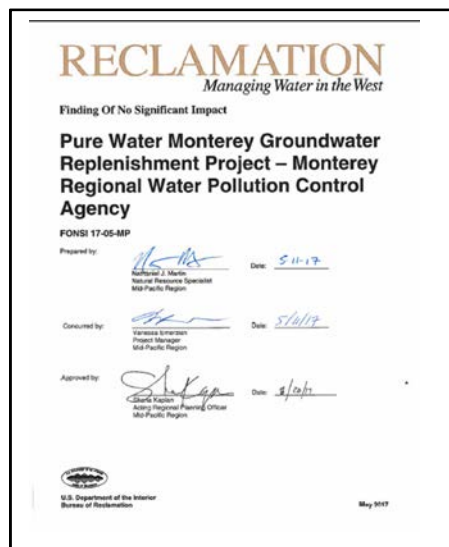
- No substantial changes have occurred with respect to the circumstances under which the project is undertaken which would require major revisions of the previous certified PWM EIR due to the involvement of new significant effects or a substantial increase in the severity of previously identified environmental effects;
- No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
 - a. The project would have one or more significant effects not discussed in the previous certified PWM EIR;
 - b. Significant effects previously examined would be substantially more severe than shown in the previous certified PWM EIR;
 - c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project but the project proponents decline to adopt the mitigation measure or alternative;
 - d. Mitigation measures or alternatives which are substantially different from those analyzed in the previous certified PWM EIR would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative.

Approval of the change to the PWM Project occurred on October 30, 2017. A Notice of Determination was filed on October 31, 2017 with the County Clerk and the State Office of Planning and Research. A 30-day statute of limitations for filing a lawsuit on the project approval ended on November 30, 2017 completing the CEQA process for this change to the PWM Project.

United States Bureau of Reclamation (USBR) Environmental Assessment/Finding of No Significant Impact (https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=28395)

In accordance with Section 102(2)(c) of NEPA, as amended, the USBR prepared an EA to analyze impacts of providing funding under the Title XVI program as authorized by the Water Infrastructure Improvements for the Nation (WIIN) Act. The USBR EA focused on the decision to authorize funding for a portion of the proposed PWM project, and thus did not focus on alternatives and analysis for the MBNMS permit decision. Therefore, this MBNMS EA is focused on whether to authorize the RWQCB issued NPDES permit.

USBR has discretionary approval over the provision of Federal WIIN Act funding, and prepared an Environmental Assessment (EA) to evaluate the environmental effects of the PWM Project, in order to qualify the project for WIIN Act funding. The USBR's Proposed Action received a NEPA "Finding of No Significant Impact" signed in June 2017.



Based on the EA, USBR found that their Proposed Action is not a major Federal action that would significantly affect the quality of the human environment. The EA described the existing environmental resources in the Proposed Action area and evaluated the effects of the No Action and Proposed Action alternatives on the resources in the vicinity of the Proposed Action. The USBR EA was prepared in accordance with NEPA, Council on Environmental Quality regulations (40 CFR 1500-1508), and Department of the Interior Regulations (43 CFR Part 46). Construction and operational effects on environmental resources were examined and found to be absent or minor; as part of this analysis, the USBR noted that the significant and unavoidable

impacts identified in the PWM EIR regarding construction noise were not considered part of USBR's proposed action. In this case, the U.S. Bureau of Reclamation identified that the PWM Project would potentially make a considerable contribution to significant cumulative impacts to marine water quality and marine biological resources due to the potential exceedance of the California Ocean Plan water quality objectives for several constituents if, in the future, the proposed CalAm desalination plant is constructed and placed into operation. However, with implementation of Mitigation Measure HS-C (Implement Measures to Avoid Exceedances over Water Quality Objectives at the Edge of the Zone of Initial Dilution), the impact would be reduced to less than significant and the PWM Project would not make a considerable contribution to a significant cumulative impact. The analysis in the USBR EA is hereby incorporated by reference and the FONSI is included as Appendix T in this EA.

MPWSP Environmental Impact Statement/Environmental Impact Report

The updated modeling and discussion in MPWSP FEIR/EIS is being incorporated by reference regarding the cumulative impacts of the combined MPWSP/PWM discharge through the ocean outfall. In particular, this EA incorporates by reference the applicable cumulative effects sections of the MPWSP FEIR/EIS that consider and addresses potential combined impacts of the MPWSP and the PWM Project on water quality and marine resources (see p. 5.5-69 of the MPWSP FEIR/EIS, for Surface Water Hydrology and Water Quality; and p. 5.5-135, Marine Biological

Resources). The section of the FEIR/EIS addressing cumulative impacts on water quality addresses potential impacts related to salinity and ocean plan constituents for the combined MPWSP-PWM discharge. With respect to potential cumulative impacts of the PWM discharge combined with potential MPWSP discharge, this EA also incorporates by reference the FEIR/EIS's discussion of mitigation measures for the MPWSP discharge. MPWSP Mitigation Measure 4.3-4 ensures that the operational discharges from the MPWSP are in compliance with the 2 parts per thousand receiving water salinity limitation at the BMZ compliance point required by the California Ocean Plan and the discharger(s) shall implement a Monitoring and Reporting Plan (Plan). The Plan shall, at a minimum, include protocols for monitoring of effluent and receiving water salinity characteristics as well as protocols for determining statistically significant changes in benthic community composition within the maximum extent of the ZID as compared to baseline conditions (established a minimum of one year prior to operations) that is directly associated with changes in salinity resulting from operational discharges (with consideration given to natural and seasonal variations and long-regional trends). Such protocols shall include, but not be limited to, monitoring for benthic community health, aquatic life toxicity, and hypoxia, within the ZID. MPWSP Mitigation Measure 4.3-5 states that prior to MPWSP operations, and as part of the MRWPCA NPDES Permit amendment process (Order No. R3-2014-0013, NPDES Permit No. CA0048551), the permittee shall complete a water quality assessment similar to the analysis conducted by Trussell Tech for the combined discharge (Appendix V). In assessing the potential combined discharge, the MPWSP FEIR/EIS reached a cumulative impacts conclusion of less than significant with mitigation for surface water hydrology and water quality, and a cumulative impacts conclusion of less than significant for marine resources.

M1W NPDES Permit Report of Waste Discharge (ROWD) Package (November 2017).

M1W submitted the Report of Waste Discharge (ROWD) package to the RWQCB, along with M1W's request for reissuance of its NPDES permit as amended for the PWM Project. The ROWD includes actual M1W secondary effluent concentrations (measured from August 1, 2014 through September 30, 2017) for conventional pollutants and projected in-pipe concentrations for Ocean Plan constituents. To determine in-pipe concentrations of the Ocean Plan constituents, Trussell Technologies, Inc. modeled worst case effluent quality based on predicted volumes and monitoring results for the source waters, secondary effluent, hauled waste, and AWPf RO concentrate. The assumptions and the process used to calculate the flow-weighted average concentrations are described in the "Ocean Plan Compliance Technical Memorandum 2017" (ROWD, Attachment 4). The proposed minimum initial dilution (Dm) values described below were used to determine the maximum effluent concentrations at the edge of zone of initial dilution (ZID) for each secondary effluent discharge scenario (Appendix Q). A mixing zone analysis of the

combined effluent discharge was conducted by Larry Walker Associates, Inc. The near-field mixing zone model, Visual Plumes, was used to delineate the effluent plume and define the edge of the mixing zone for buoyant (rising) discharges which was based on building a density profile mentioned below. The modeled scenarios included combinations of secondary effluent, RO concentrate, and hauled waste using the three different oceanic seasons defined in Monterey Bay (Upwelling, Oceanic, Davidson). Density data from sampling stations in the Monterey Bay were used to build density profiles and define water stratification conditions for each season. The ambient current was set to zero for all dilution simulations. For submarine discharges, such as the M1W outfall, the initial dilution is completed when the diluting effluent ceases to rise in the water column and first begins to spread horizontally. The resulting concentrations for each constituent in each scenario were compared to its minimum Ocean Plan objective to assess compliance. None of the constituents are expected to exceed their Ocean Plan objective. The ROWD package is included in Appendix R of this EA.

1.3 Proposed Project Description and Objectives

The primary objective of the PWM Project is to provide a reliable source of water to the Monterey Peninsula area, which also benefits water quality flowing into MBNMS. As such, secondary project objectives include:

1. Protect MBNMS and improve water quality in Monterey Bay and Salinas River by reducing pollutant loads from surface waters through capture, treatment, and reuse of additional wastewaters, storm water, and dry weather urban and agricultural runoff;
2. Conserve energy by using less energy than alternative water supplies and uses sustainable energy supplies, including landfill gas, wastewater methane, and solar, to convey and treat water
3. Reduce seawater intrusion in the northern Salinas Valley
4. Support State Water Resources Control Board (State Water Board) Orders and Policies by providing water sustainability, alternative to Carmel River, maximizes water recycling, reduces greenhouse gas emissions for producing water supplies
5. Improve habitat for wildlife in the Salinas and Carmel Rivers

The primary need for the PWM Project is to replenish the Seaside Groundwater Basin supplying California American Water Company (CalAm) with 3,500 acre-feet per year (AFY) of purified recycled water, which would ultimately replace a portion of CalAm's water supply diversion from the Carmel River as required by State orders, including State Water Resources Control Board (State Water Board) Order WR 2009-0060, as amended by Order WR 2016-0016.

Secondary purposes of the PWM Project include:

1. Provide additional water to M1W's Treatment Plant that could be used for agricultural irrigation through the Salinas Valley Reclamation Plant (SVRP) and Castroville Seawater Intrusion Project (CSIP) system;
2. Provide purified recycled water to urban irrigators in communities near the product water conveyance pipeline;
3. Develop a drought reserve to allow the increased use of PWM Project source waters as agricultural irrigation within the area served by the CSIP during dry years;
4. Assist in reducing seawater intrusion in the Seaside Basin; and
5. Support in diversifying Monterey County's water supply portfolio.

PWM Project Description

M1W is undertaking the PWM Project in partnership with the Monterey Peninsula Water Management District (MPWMD). The PWM Project includes an Advanced Water Purification Facility consisting of a four-step process that would further treat water that has already been treated by the existing primary and secondary treatment processes at the Treatment Plant:

1. Ozone (O₃) Pre-Treatment
2. Membrane Filtration (MF)
3. Reverse Osmosis (RO)
4. Advanced Oxidation with Ultra Violet Light (UV) and Hydrogen Peroxide (H₂O₂)

The PWM Project also includes product water conveyance pipelines, pump station, and injection well facilities. On-site operations would generate RO concentrate that M1W proposes to discharge to the ocean using their existing ocean outfall blended with secondary effluent and small truckloads of brine when available.

The PWM Project is designed to create a reliable supply of water for northern Monterey County by replenishing the Seaside Groundwater Basin with 3,500 AFY of purified recycled water. This would replace a portion of CalAm's water supply as required by State Water Resources Control Board (State Water Board) orders and provide up to 600 AFY of purified recycled water to Marina Coast Water District (MCWD) for urban landscape irrigation. In normal and wet years approximately up to 4,500 to 4,750 AFY of additional recycled water supply could be created for agricultural irrigation in the existing Castroville Seawater Intrusion Project (CSIP) area. In wet years, the PWM Project would be able to contribute to a drought reserve of up to 1,000 AF in the Seaside Groundwater Basin enabling up to 1,000 AF of additional recycled water to be available for agricultural irrigation in drought conditions. In dry years, the average contribution to CSIP

flows would be less (i.e., up to 4,000 AFY), including the amount that may be available from the previously “banked” drought reserve amounts. These CSIP flows could be provided in the future, if the MCWRA participates in funding the source waters projects.

The PWM Project is located in unincorporated areas of the Salinas Valley in Monterey County, and within the cities of Salinas, Marina, and Seaside. The PWM Project would obtain new raw waters (agricultural wash water, urban storm water runoff, and surface waters) and combine them with existing wastewater inflow to the Treatment Plant to receive primary and secondary treatment before beneficial reuse at either the Salinas Valley Reclamation Plant (SVRP) or by the PWM Project AWPf. Secondary-treated effluent not treated to tertiary levels at SVRP for distribution through CSIP for agricultural irrigation would be conveyed to the AWPf. The advanced purified recycled water produced at the AWPf would meet or exceed federal and state drinking water standards, including Title 22 of the California Code of Regulations and its requirements for groundwater replenishment with recycled water.

The Seaside Groundwater Basin would be replenished by injecting purified recycled water into both shallow and deep injection wells where it would mix with native groundwater, be stored, and subsequently, be available for extraction by CalAm. This water source would replace water derived from the Carmel River alluvial aquifer. Customers in the Marina Coast Water District system would use up to 600 AFY of purified water for urban landscape irrigation. The PWM Project would enhance water supplies from the existing tertiary treatment plant for agricultural irrigation in the northern portion of the Salinas Valley, enabling a reduction in groundwater pumping slowing seawater intrusion.

At the peak operating capacity, the AWPf would receive approximately 6.85 MGD of secondary effluent as source water (of that 0.68 MGD will be returned to the headworks as filter backwash) and would achieve approximately 73 percent overall recovery to produce 5 MGD of recycled water for irrigation and groundwater injection. The RO concentrate waste component would result in an additional flow of up to 1.17 MGD to MBNMS. If the secondary effluent is produced at the permitted flow of 29.6 MGD, 6.85 MGD of this would become influent to the AWPf. A maximum of 23.4 MGD of secondary effluent would remain available for delivery to the SVRP or blending with RO concentrate and discharged to MBNMS. The total discharge flow to MBNMS would not exceed the permitted flows of 29.6 MGD (Average Dry Weather Flow) and 75.6 MGD (Peak Wet Weather Flow).

The PWM Project includes the following mitigation measures relating to the effluent discharge through the ocean outfall pipe that are described below and in Section 3.3 under Cumulative Projects. Prior to the potential MPWSP operation, these mitigation measures would be implemented as part of an amendment process to modify the M1W NPDES permit to include the MPWSP discharge. The mitigation measures are designed to prevent or mitigate potential impacts from the addition of MPWSP desalination brine to the outfall.

Mitigation Measure HS-C. As part of the amendment process to modify the existing M1W NPDES Permit per 40 Code of Regulations Part 122.62, it would be necessary to conduct an extensive assessment of the water quality in the discharge in accordance with requirements to be specified by the RWQCB. It is expected that the assessment would include, at a minimum, an evaluation of the minimum probable initial dilution at the point of discharge based on likely discharge scenarios and any concomitant impacts on water quality and beneficial uses per the Ocean Plan. Prior to operation of the MPSWP desalination plant, the discharger(s) will be required to test the MPSWP source water in accordance with protocols approved by the RWQCB. If the water quality assessment indicates that the water at the edge of the ZID will exceed the Ocean Plan water quality objectives, the M1W will not accept the desalination brine discharge at its outfall, and the following design features and/or operational measures shall be employed, individually or in combination, to reduce the concentration of constituents to below the Ocean Plan water quality objectives at the edge of the ZID:

- a. Additional pre-treatment of MPWSP source water at the Desalination Plant: Feasible methods to remove PCBs and other organic compounds from the MPWSP source water at the desalination plant include additional filtration or use of granular activated carbon (GAC). GAC acts as a very strong sorbent and can effectively remove PCBs and other organic compounds from the desalination plant source water.
- b. Treatment of discharge at the Desalination Plant: Feasible methods to remove residual compounds from the discharge to comply with water quality objectives at the edge of the ZID are use of GAC (similar to that under the additional pre-treatment of MPWSP source water) and advanced oxidation with ultraviolet light with concurrent addition of hydrogen peroxide. The method of using advanced oxidation with ultraviolet light with concurrent addition of hydrogen peroxide is used for the destruction of a variety of environmental contaminants such as synthetic organic compounds, volatile organic compounds, pesticides, pharmaceuticals and personal care products, and disinfection byproducts. This process is energy intensive but requires a relatively small construction footprint.
- c. Short-term storage and release of brine at the Desalination Plant: When sufficient quantities of treated wastewater from the Regional Treatment Plant to prevent an exceedance of Ocean Plan objectives at the edge of the ZID are not available, brine from the desalination plant would be temporarily stored at the MPWSP site in the brine storage basin (see MPWSP DEIR Chapter 3, Project Description) and discharged (pumped) in pulse flows (up to the capacity of the existing outfall), such that the flow rate allows the discharge to achieve a dilution level that meets Ocean Plan water quality objectives at the edge of the ZID.
- d. Biologically Active Filtration at the Regional Treatment Plant: As part of the AWPf at the Regional Treatment Plant, the PWM Project includes the potential for use of upflow biologically active filtration following ozone treatment to reduce the concentration of

ammonia and residual organic matter present in the ozone effluent and to reduce the solids loading on the membrane filtration process. The biologically active filtration system would consist of gravity-feed filter basins with approximately 12 feet of granular media, and a media support system. Ancillary systems would include an alkalinity addition system for pH control, backwash waste water basin (also used for membrane filtration backwash waste water), backwash pumps, an air compressor and supply system for air scour, an air compressor and supply system for process air, and a wash water basin to facilitate filter backwashing (the wash water basin may be combined with the membrane filtration flow equalization basin). This biologically active filtration system may be needed to meet Ocean Plan water quality objectives at the edge of the ZID (if and/or when discharges from the Project are combined with discharges from the MPWSP with 6.4 MGD desalination plant). This optional component of the Project would become a required process if the MPWSP with 6.4 MGD desalination plant is in operation and the other components of the mitigation do not achieve Ocean Plan compliance.

Status of PWM Project as of March 2019

The following is a brief status update of the construction of the facilities for the PWM Project. M1W has received all necessary permits and authorizations to proceed with construction of the facility; and the PWM Project is currently under construction (more than 70% complete as of November 2018), with an anticipated construction completion date in 2019. The construction activities and associated implementation of mitigation measures and reporting are being conducted by M1W, and their partners, Monterey Peninsula Water Management District, and Marina Coast Water District, each of whom contracted with Denise Duffy & Associates to conduct monitoring and reporting of mitigation measure implementation and compliance by the respective contractors for each component. As documented in project status reports, the construction of the project is being completed in compliance with all mitigation measures and thus far, has not resulted in any significant environmental impacts. See Appendix S for the latest environmental compliance reports.

1.4 Description of MBNMS Role and Proposed Federal Action

MBNMS was designated in 1992 as a federal marine protected area off of California's central coast. It stretches from Marin to Cambria, encompasses a shoreline length of 276 miles and 4,601 square nautical miles of ocean, and extends an average distance of 30 miles from shore. Its mission is to “understand and protect the coastal ecosystem and cultural resources of Monterey Bay National Marine Sanctuary.” MBNMS goals include:

- enhancing resource protection through comprehensive and coordinated conservation and management tailored to the specific resources that complements existing regulatory authorities;

- supporting, promoting, and coordinating scientific research on sanctuary resources, and monitoring those resources to improve management decision-making in the sanctuary;
- enhancing public awareness, understanding, and ecologically sound use of the marine environment; and
- facilitating multiple uses of the sanctuary, so long as those uses are compatible with the Sanctuary's primary objective of resource protection, and so long as they are not otherwise prohibited.

The National Marine Sanctuaries Act (NMSA) regulations identify activities that are prohibited in the sanctuaries and establish a system of permits and/or authorizations to allow the conduct of certain types of activities that are otherwise prohibited. Each sanctuary has unique regulatory prohibitions codified within a separate subpart of Title 15, Code of Federal Regulations, Part 922 (i.e., 15 CFR Part 922). Subpart M contains the regulations specific to MBNMS. Section 922.132 of the regulations lists activities that are prohibited or otherwise regulated within the Sanctuary. Among the listed prohibitions, the following prohibited activities relate to the proposed project and may qualify for an authorization, pursuant to Section 922.132(e): Discharging or depositing from within or into the sanctuary any material or other matter, except as specified in A – F of this section. (15 CFR § 922.132(a)(2)(i)).

The term “authorization” is a specific approval tool described in the NMSA regulations at 15 CFR Section 922.49, which provides, in part, that: A person may conduct an activity prohibited by subparts L through P, or subpart R, if such activity is specifically authorized by any valid Federal, State, or local lease, permit, license, approval, or other authorization issued after the effective date of MBNMS designation, provided that: 1) the applicant notifies the Director of the Office of Ocean and Coastal Resource Management, NOAA, or designee, in writing, of the application for such authorization; 2) the applicant complies with the provisions of Section 922.49; 3) the Director notifies the applicant and authorizing agency that he or she does not object to issuance of the authorization, and; 4) the applicant complies with any terms and conditions the Director deems reasonably necessary to protect sanctuary resources and qualities. Upon completion of the review of the application and information received with respect thereto, the Director shall notify both the agency and applicant, in writing, whether he or she has any objection to issuance and what terms and conditions he or she deems reasonably necessary to protect sanctuary resources and qualities.

The ONMS/MBNMS Proposed Action is to authorize the RWQCB-issued NPDES permit (Order No. R3-2018-0017/NPDES No. CA0048551) to allow for the discharge of effluent from the PWM Project’s AWPf (called reverse osmosis concentrate, or RO concentrate) to be added to existing discharges of secondary effluent and small amounts of hauled saline waste into MBNMS via an existing ocean outfall pipe. The project construction activities, which are currently occurring

throughout the region, are not a subject of the Proposed Action. In addition, the operation of components other than the AWPf do not depend upon and are not affected by the issuance of an authorization for the NPDES permit reissuance; therefore, this EA is focused upon the environmental effects of operation of the AWPf, and in particular, on the discharge of effluent from the AWPf through the ocean outfall.⁹ A more detailed description of the environmental effects due to operation of the AWPf under the Proposed Action (MBNMS authorization of the NPDES permit reissuance), as compared to operations under the existing NPDES permit is provided in Section 2.

1.5 Purpose and Need for MBNMS Proposed Action

The purpose of the Proposed Action is to authorize a RWQCB issued NPDES permit that allows otherwise prohibited activities to occur within MBNMS, to ensure that the State and Federal permits and the Proposed Action comply with MBNMS regulations, and to ensure that MBNMS resources are protected by requiring terms and conditions that may be necessary.

The Proposed Action was prompted by M1W's request for permission to allow for modified discharge at M1W's existing ocean outfall into the Sanctuary. Therefore, the need for the Proposed Action is to respond to M1W's request in accordance with MBNMS regulations and to protect sanctuary resources. Since MBNMS has Federal authority to issue authorizations, to impose additional conditions of approval, or to deny authorizations, it qualifies as the lead federal agency under NEPA. As part of its review, MBNMS has coordinated with other government agencies that have expertise or resource management in the PWM Project area to review water quality impacts as a result of the PWM Project.

The additional RO concentrate would change the waste stream characteristics, in particular, the density properties that effect near-field mixing processes. Since discharge is included in the listing of prohibited activities, there is a need to evaluate the potential for water quality impacts and the need to address the potential for significant cumulative effects on water quality.

2.0 ALTERNATIVES

This section discusses the range of reasonable alternatives that meet the purpose and need of the proposed action under NEPA and its regulations (40 CFR 1502.14); it also discusses alternatives considered but eliminated from further analysis. The screening criteria includes the ability of the alternatives to meet the purpose and need of the proposed action, the ability of the

⁹ However, land-based and construction impacts are considered and incorporated by reference in the cumulative impacts discussion in this document.

discharge to meet CA Ocean Plan WQOs and MBNMS's resource protection priorities, and the feasibility of the alternatives.

The physical impacts of the Preferred Alternative and the No Action Alternative are very similar to each other. Under the Preferred Alternative, M1W would comply with the reissued NPDES permit commencing on April 1, 2019. If MBNMS does not authorize the reissuance, the existing discharge under most conditions will still meet all relevant regulatory requirements for compliance with the California Ocean Plan (i.e., effluent limits established to meet the relevant objectives). M1W may have to limit certain operations of the Proposed PWM Project to comply with the NPDES permit requirements currently in effect.

2.1 Alternative 1 (Preferred)

Authorization of Reissuance of NPDES Permit Order No. R3-2018-0017

Under this alternative, MBNMS would authorize the reissued RWQCB NPDES Permit CA0048551 for the M1W Treatment Plant to allow the discharge of existing secondary treated wastewater and small quantities of hauled saline waste, together with discharge of reverse osmosis (RO) concentrate from the Proposed PWM Project's AWP into the Sanctuary. The focus of this Preferred Alternative description is on the changes to the discharge from the existing M1W ocean outfall that would be enabled by MBNMS's authorization of the reissuance of the NPDES Permit.

The Report of Waste Discharge (ROWD) is incorporated by reference (Appendix R) and includes information on the proposed PWM discharge, including amount of effluent discharged; composition (amounts of wastewater, saline waste, RO concentrate, and how they vary by month); difference between wet and dry months, etc. It also includes a discussion of the dilution factors and zone of initial dilution (See ROWD Table 2 below).

Table 2 – Flow scenarios and modeled D_m values used for Ocean Plan compliance analysis

No.	Discharge Scenario (Ocean Condition)	Flows (mgd)			D _m
		Secondary Effluent	RO Concentrate	Blended Hauled Waste ¹	
1	Minimum wastewater flow (Upwelling)	0	1.17	0	498
2	Low wastewater flow (Upwelling)	0.4	1.17	0	460
3	Low Wastewater Flow (Upwelling)	0.6	1.17	0	442
4	Moderate wastewater flow (Upwelling)	2	1.17	0	358
5	Moderate wastewater flow (Upwelling)	4	1.17	0	299
6	Moderate wastewater flow (Upwelling)	4.5	1.17	0	289
7	Moderate wastewater flow (Upwelling)	5	1.17	0	281
8	High wastewater flow (Upwelling)	23.4	1.17	0	174

¹A sensitivity analysis was conducted to determine the impacts of hauled waste on the modeled D_m results. It was concluded that neither the flow nor TDS from the addition of hauled waste had a significant impact on the modeled D_m result, and was therefore excluded from the D_m calculation.

The Preferred Alternative includes mitigation measure HS-C referenced above, and additional conservation and mitigation measures resulting from consultations, as discussed in more detail in Section 4.

2.2 Alternative 2 – No Action Alternative

Under this alternative, MBNMS would not authorize the NPDES permit to be reissued to accommodate the new effluent characteristics of the PWM Project, the existing permit would remain in effect for discharge into MBNMS, and M1W would have to limit the discharge to meet the current NPDES effluent limits.¹⁰ The project construction would still occur and operation of the AWPf would still occur, and this analysis assumes that the Treatment Plant’s existing NPDES discharge permit and associated dilution factor and effluent limits would remain in place and that the expiration date of the existing permit would be amended by the RWQCB. In either case, M1W would be required to meet the existing permit requirements in effect at the time.

If MBNMS chooses to not authorize the recently released NPDES permit, there is a referral process outlined in the Water Quality Protection Program MOA¹¹. The two parties (RWQCB and MBNMS, alone, or as needed, the State Water Board and the U.S. EPA) may also reach agreement

¹⁰ The existing discharge permit, NPDES No. CA0048551 has an expiration date of July 31, 2019. Regulations at 40 C.F.R. 122.46, 122.6 discuss continuation provisions of NPDES permits in the event that the EPA or state fails to act on a reissuance request.

¹¹ https://nmsmontereybay.blob.core.windows.net/montereybay-prod/media/resourcepro/reports/MOA-2015-057_WQPP.pdf

on permit terms and conditions which may include, as needed, additional terms and conditions not already included in the pending draft order that would issue the NPDES permit to M1W.

Comparison of Alternatives

The Preferred Alternative focuses on the potential effects of the operation of the project under a reissued NPDES Permit; namely operating the AWPf at full capacity pursuant to Order R3-2018-0017 (the reissued NPDES Permit CA0048551) rather than under the existing Order R3-2014-0013 (existing NPDES Permit CA0048551) which would remain in effect for the No Action Alternative.

In the No Action Alternative, the AWPf may not be able to operate at full capacity in certain times of the year to comply with the existing NPDES permit. Specifically, exceedances of existing effluent limits may occur using the existing allowable dilution factor at times when: (1) there are small or no flows of secondary effluent available to mix with the AWPf byproduct RO concentrate and (2) when certain constituent concentrations in secondary effluent are high.

The modeling analyses incorporated by reference here indicate that in some circumstances, even when exceedances of the existing NPDES permit limits occur, the discharge may still meet Ocean Plan compliance objectives. The actual ocean dilution for RO concentrate differs dramatically from secondary effluent (slightly higher salinity, but still positively buoyant discharge, results in better mixing in the ocean immediately after discharge). Trussell Technologies determined that RO concentrate discharge to the ocean for the Preferred Alternative would result in a new (higher) allowable minimum dilution factor (abbreviated “Dm”) when secondary effluent flows are lower, in particular, when secondary effluent flows are less than approximately 4 MGD at the peak production rate of the AWPf of 5 MGD (RO concentrate flows of 1.17 MGD). The actual dilution characteristics of discharge under this condition would be greater than 145:1 in the existing permit; therefore, although the discharge would not comply with the existing permit limits, the discharge would always comply with (or meet) Ocean Plan objectives that are applicable at the edge of the zone of initial dilution. At lower flows of RO concentrate in combination with higher flows of secondary effluent, M1W would be expected to comply with existing permit limits (Brie Weber, P.E., Trussell Technologies, April 2018). Conditions of potential non-compliance would be expected when the SVRP tertiary treatment facility is operating and thus adequate flows of secondary effluent would not be available for in-pipe dilution prior to discharge of the RO concentrate. Non-compliance may trigger subsequent actions under the NPDES permit, such as potential reopening of the NPDES permit, additional requirements for monitoring or mitigation, or potential enforcement actions.

In effect, and for the reasons discussed in more detail in Section 3, there is little difference in potential environmental impacts between the No Action Alternative and the Preferred Alternative. Any discharge from the wastewater treatment plant would be required to meet the California Ocean Plan objectives. For the No Action Alternative, the existing NPDES permit would

remain in effect with reduced operating capacity of the AWPf. The Preferred Alternative would have different dilution scenarios based on the characteristics of the effluent but would also meet the California Ocean Plan objectives.

2.3 Alternatives Considered but Rejected From Further Analysis

One alternative considered by MBNMS but rejected was including a Term and Condition in the authorization of the NPDES permit with just one Dm similar to previous NPDES permits issued to M1W. This was rejected because the ocean modeling analysis showed that the dilution in the ocean for both RO and secondary effluent as contemplated in the amended permit would not be the same as the prior 145:1 dilution modeled for purely secondary effluent.

Another alternative considered by MBNMS but rejected was consideration of an authorization that would be appropriate for a larger PWM project. This was rejected because currently, there is no funding source for conducting the work needed to plan, analyze, and design a larger capacity PWM project. The PWM Expansion Project was demonstrated to be a technically feasible project by M1W in their May 10, 2018 submittal to the California Public Utilities Commission. Additional information is available at <http://purewatermonterey.org/reports-docs/>. Environmental review and engineering design is on hold pending pre-construction project development funding. Because a proposed expansion of the PWM Project is not currently before MBNMS for authorization review, MBNMS considered this alternative but rejected it from further analysis.

For context, this section also summarizes water supply alternatives considered and rejected by Monterey-area state and local agencies. A detailed discussion of the regional water supply alternatives considered but rejected by the local and state lead and responsible agencies over the past several decades is provided in prior environmental documents for the project, which are incorporated by reference into this EA. Please see the PWM Project Consolidated EIR, Chapter 6 of Volume I (<http://purewatermonterey.org/wp/wp-content/uploads/Volume-I-Consolidated-Final-EIR-Jan-2016.pdf>).

Section 6.2 of the PWM EIR discusses the alternatives that were considered, but eliminated from further analysis, including alternative water supplies considered but eliminated and alternative components of the PWM project (referred to in the EIR as “proposed project”) considered but eliminated.

The other potential water supply projects would serve water supply needs of the Monterey Peninsula area, the Marina Coast Water District service area (former Fort Ord), and the Salinas Valley Groundwater Basin (all three geographies receive the water supply benefits of the PWM Project). The rationale for reviewing previous water supply project proposals in the Monterey Peninsula, the former Fort Ord, and Salinas Valley areas is to document past efforts at developing

water supplies that were intended to achieve similar water supply objectives as those of the PWM Project. Also, Section 6.2 of the PWM EIR presented a previous version of this groundwater replenishment project that was considered in past environmental documents as part of prior regional water planning efforts. That section also contains a summary of several key alternatives considered but rejected by M1W during their approval of the Project, including the following:¹²

- No Project
- Alternatives to Project
 - Reduced Seaside Basin Replenishment Alternative
 - Component-by-component alternatives for Source Water Diversion and Use, for Product Water Conveyance, and for CalAm Distribution System Pipelines
 - Three overall alternatives to the Project were considered that combined component-by-component alternatives into overall alternatives:
 - Alternative A: Reduced Seaside Basin Replenishment and Alternative Monterey Pipeline
 - Alternative B: Reduced Source Water Alternative #2 (No Tembladero Slough) and Alternative Monterey Pipeline
 - Alternative C: Reduced Source Water Alternative #7 (Salinas Source Waters Only) and Alternative Monterey Pipeline

The Proposed Project considered in the EIR was ultimately approved with a modification to approve the Alternative Monterey Pipeline, and that project is currently being implemented.¹³ In addition, one component, the Alternative Monterey Pipeline has been constructed by the California American Water Company and was also not subject to federal approvals.

In addition, more information can be reviewed about numerous alternative water supply solutions in Chapter 5 of the recently published Final EIR/EIS for the Monterey Peninsula Water Supply Project (see: <https://www.watersupplyproject.org/eir>); however, the alternatives presented in MPWSP EIR/EIS would not achieve the full suite of objectives of the PWM Project, except those that include the PWM Project as a component. The PWM Project secondary objectives include diversification of water supplies, reducing pollutant load to the Salinas River and Monterey Bay, and augmenting water supplies for agricultural land in Salinas Valley, which other alternatives would not achieve.

¹² No federal agencies have considered alternative water supply alternative for the region as their purview has been exclusively whether to fund the PWM Project or to deny funding.

¹³ The project currently being implemented with Clean Water State Revolving Funding and grants, including associated federal approvals does not include the Tembladero Slough and the Lake El Estero source water diversions due to lack of funding, permitting obstacles, and potential high salinity in those water bodies adversely affecting water quality for CSIP. The product water alignment option selected was the RUWAP (inland) alignment and the shared pipeline scenario for that pipeline alignment was approved by M1W on October 30, 2017.

3.0 ENVIRONMENTAL SETTING (AFFECTED ENVIRONMENT), IMPACTS, AND MITIGATION MEASURES

This section describes the affected environment for the Proposed Action and presents the analysis of anticipated environmental consequences, or effects, for the No Action Alternative and Preferred Alternative identified in Section 2. In particular, this section focuses on the environmental setting related to operation of the AWPf and its associated impacts on marine water quality and marine biological resources. The cumulative impacts discussion considers the potential impacts of the AWPf in conjunction with reasonably foreseeable past, present, and future cumulative projects.

3.1 Environmental Setting (Description of the Affected Environment)

The affected environment for the Proposed Action (authorization of effluent discharge from the AWPf through the ocean outfall) is the area within and near the boundaries of MBNMS, and includes the waters, submerged lands, and marine resources of the Sanctuary which is located on California's central coast extending from just north of San Francisco Bay south to Cambria and an average distance of 30 miles offshore. The environmental setting section is focused on those resource areas for which the proposed action may result in direct, indirect, or cumulative impacts (Water Resources and Quality and Marine Biological Resources). The overall environmental setting for the PWM Project can be found in the PWM Final EIR Section 4 (Environmental Setting, Impacts, and Mitigation Measures) and is incorporated by reference here; however, that setting was applicable at the time of preparation of the EIR (namely, 2014). As of February 2019, many of the project components are under construction including product water conveyance facilities, injection well facilities, AWPf, and the Reclamation Ditch and Blanco Drain diversion facilities. Overall, construction is approximately 70% complete.

Water Resources and Quality

Climate and Precipitation. The PWM Project area is located along the western margin of the Coast Range and the climate is dominated by the Pacific Ocean. The project area is characterized by moderate coastal climate with mild, wet winters and generally dry summer days, which are often overcast or have coastal fog and cool temperatures. The average temperature is approximately 60 degrees Fahrenheit. Rainfall occurs primarily between November and April. Average rainfall in Salinas is approximately 13 inches per year, approximately 90% occurring between November and April. The average rainfall in other areas of the county varies but is approximately 18 inches per year.

Monterey Bay Features and Climate. The Monterey Bay is a bay of the Pacific Ocean, along the central coast of California, between the cities of Santa Cruz on the north and Monterey on the south. Designated in 1992, Monterey Bay National Marine Sanctuary (MBNMS) is a federally protected marine area offshore of California's central coast. MBNMS is larger than the Monterey Bay itself, as it stretches from Marin County on the north to Cambria in San Luis Obispo County on the south, encompassing a shoreline length of 276 miles and 16,904 mi² of ocean, extending an average distance of 30 miles from shore.

The oceanographic feature primarily affecting waters of Monterey Bay and its adjacent continental shelf is the California Current System, which consists of the California Current, the California Undercurrent, and the Davidson Current. The California Current is a large-scale upper ocean current that transports cold, subarctic water with lower salinity from the North Pacific south along the North American coast where it mixes with warm, saltier equatorial water (ESA/PWA, 2014). Beneath this near-surface current and relatively close inshore (within 100 kilometers or 62 miles), is the California Undercurrent that transports warm subtropical water northward. During winter months the California Undercurrent becomes the inshore countercurrent or Davidson current.

Ocean climate refers to oceanographic conditions, including temperature, salinity, and current, and wave patterns prevailing over a period of time. An understanding of the ocean climate in Monterey Bay is important because the climatic conditions within the Bay affect the upwelling and mixing of the ocean water, which in turn affect the water quality in the Bay. There are three known ocean climate seasons in Monterey Bay. These three individual seasons overlap and the dates upon which they occur can vary from year to year.

1. Upwelling Period (typically February to July), when steady northwesterly/westerly winds cause offshore transport of surface waters, and causing deep, colder, nutrient-rich water to rise to the surface (upwelling);
2. Oceanic or California Current Period (typically August to October), when wind relaxation allows previously upwelled water to sink and be replaced by warm oceanic waters from offshore; and
3. Davidson Current Period (typically November to January), when winter storm conditions cause downwelling in Monterey Bay and lower currents in the nearshore area.

The seawater in Monterey Bay is a mixture of water masses from different parts of the Pacific Ocean with warmer, saltier water from the equatorial zone and colder, fresher water from the arctic regions. The water quality is a function of different constituents present in the water and the ocean climate in the Bay that affects the concentration of the constituents. This section describes the constituents that are currently regulated or monitored, and that are anticipated to

be regulated in the future, by the State Water Resources Control Board (State Board) and the RWQCB.

Salinity and Temperature. Near-shore surface temperatures vary from 8°C (46.4°F) during winter and early spring to 17°C (62.6°F) during fall. Near-shore surface salinities vary from 33.2 practical salinity units (psu) to 34.0 psu when upwelling is strong. Practical salinity units are used to measure salinity in terms of the concentrations of dissolved salts in the water. Streams and rivers can affect salinity levels, but even during flood conditions, the salinity of Monterey Bay surface waters does not fall below 31 psu (MBNMS, 2013b).

Dissolved Oxygen. Monterey Bay is a dynamic environment that includes variable concentrations of dissolved oxygen (DO). Ambient DO levels in the Bay at a depth of approximately 100 feet have ranged from 4.25 milligrams per liter (mg/L) to 8.00 mg/L (KLI, 1998; KLI, 1999). Low concentrations of DO can have a detrimental effect on aquatic species. The Water Quality Control Plan for Ocean Waters of California (or Ocean Plan) sets the water quality objective for DO at 5 mg/L.

Other Constituents. The waters of Monterey Bay contain numerous legacy pesticides such as organochlorine pesticides, Dieldrin, polychlorinated biphenyls (PCBs), and DDT, as well as chemical products in current use such as organophosphate pesticides, and polynuclear aromatic hydrocarbons (PAHs). The largest source of contaminants is agricultural runoff into the San Lorenzo, Pajaro, and Salinas rivers. Seasonal data collected by CCLEAN¹⁴ between 2001 and 2013 indicate numerous instances where water quality criteria and human health alert levels have exceeded the Ocean Plan due to presence of contaminants in near-shore waters of Monterey Bay (Central Coast Long-term Environmental Assessment Network, 2014). Annual data collected from 2004 to 2013 indicate that waters of Monterey Bay exceeded the Ocean Plan 30-day average PCB water quality objective of 1.9×10^{-5} micrograms per liter ($\mu\text{g/L}$) for most of the years between 2004 and 2012.

Monterey Bay also receives point source discharges. These permitted discharges are subject to prohibitions and water quality requirements by regulatory agencies (i.e., the RWQCB and U.S. Environmental Protection Agency) such as periodic monitoring, annual reporting, and other requirements designed to protect the overall water quality of Monterey Bay. In the vicinity of the M1W outfall, some of these permitted discharges include stormwater discharges from the cities of Sand City, Seaside, Monterey, Del Rey Oaks, Pacific Grove, and unincorporated portions of Monterey County, as well as treated wastewater from the M1W Regional Treatment Plant.

¹⁴ CCLEAN is a long-term water quality monitoring program designed to help municipal agencies and resource managers protect the quality of the near-shore marine waters in the Monterey Bay. CCLEAN is a collaborative program between the cities of Watsonville and Santa Cruz, M1W, Carmel Area Wastewater District, Dynegy Moss Landing Power Plant, and Central Coast Regional Water Quality Control Board (CCLEAN, 2013).

Another permitted point discharge in Monterey Bay is located seven (7) miles north of the project area in Moss Landing and is a natural gas power plant operated by Dynegy whose cooling water is discharged.

Marine Biological Resources

This section describes the regional oceanographic conditions and marine biological resources of Monterey Bay. The impact analysis presented in Section 3.3 below, focuses only on those resources located within the marine biological resources study area (also referred to as marine study area). For the purposes of this EA, the marine study area is the entire area depicted in Figure 1 and encompasses the nearshore waters of Monterey Bay and extends to the areas surrounding the MRWCPA ocean outfall as shown below.

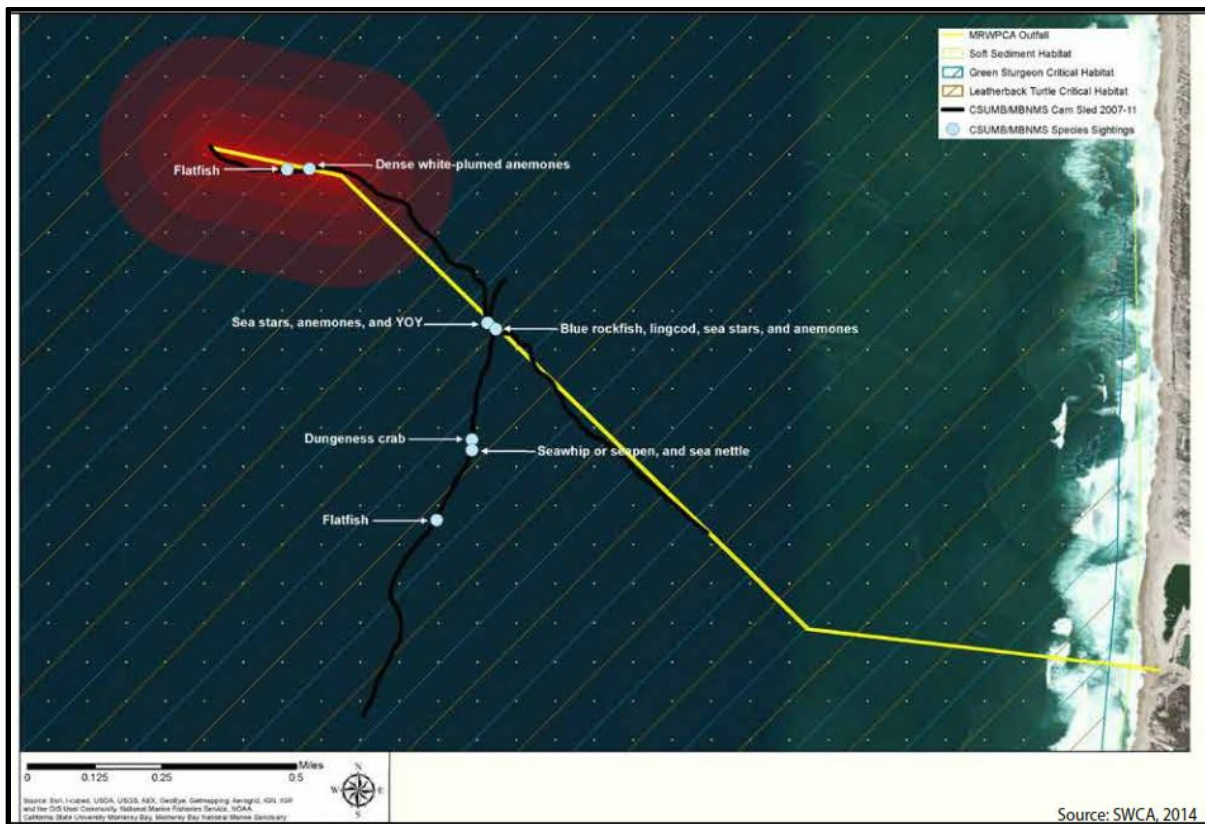


Figure 1. Marine Biological Resources Study Area

Monterey Bay National Marine Sanctuary

The marine study area is located in the coastal portion of MBNMS, which was designated as a federally protected area in 1992. MBNMS is managed by NOAA's Office of National Marine Sanctuaries and includes coastal waters from Marin to Cambria. MBNMS includes approximately 276 miles of shoreline, extends an average distance of 30 miles from shore, and encompasses

6,094 square statute miles of ocean and is more than two miles deep at its deepest point. MBNMS was established in furtherance of the purposes and policies of the National Marine Sanctuaries Act, 16 U.S.C. §§ 1431 *et seq*, including research, education, public use, and resource protection. MBNMS includes a variety of habitats that support extensive marine life. (Monterey Bay National Marine Sanctuary, 2008).

In Water Resources and Quality, above, this EA describes the hydrology and water quality of Monterey Bay. Monterey Bay has three ocean climate seasons: upwelling, oceanic, and Davidson current. The upwelling period, typically occurring mid-February through November, is characterized by higher nutrient concentrations at the surface, where sunlight and stratification of the water column often lead to high primary production and chlorophyll values (see the discussion of pelagic habitat, below, for more details). During the oceanic period, which usually begins in mid-August and continues through mid-October, phytoplankton blooms are intermittent and primarily composed of small phytoplankton. Phytoplankton productivity is lowest in winter months and during the Davidson current period.

Special Status Species

MBNMS includes a variety of habitats that support extensive marine life, including 34 species of marine mammals, over 180 species of seabirds and shorebirds, at least 525 fish species, 4 sea turtle species, 31 different invertebrate phyla, and over 450 species of marine algae. Its natural resources include central California's largest contiguous kelp forest, one of North America's largest underwater canyons, and the closest-to-shore deep ocean environment off the continental United States. Its highly productive biological communities host one of the highest levels of marine biodiversity in the world, including 27 federally listed threatened and endangered species under the Endangered Species Act (ESA), 16 U.S.C. §§ 1531 *et seq* (MBNMS, 2008). Federally listed species include six species of large whales, the Southern sea otter (*Enhydra lutris nereis*), Steller sea lion (*Eumetopias jubatus*), Guadalupe fur seal (*Arctocephalus townsendi*), California clapper rail (*Rallus longirostris obsoletus*), western snowy plover, marbled murrelet (*Brachyramphus marmoratus*), four species of sea turtles, six species of salmon or steelhead, the tidewater goby (*Eucyclogobius newberryi*), and black abalone (*Haliotis cracherodii*) (MBNMS 2008). MBNMS is also a meeting place for the geographic ranges of many species. It lies at the southern end of the range for some species, like the Steller sea lion (occurring from central California north to Alaska and Japan), and the northern end of the range for other species, like giant kelp (*Macrocystis pyrifera*) (occurring from San Francisco south to Baja California, Mexico) (MBNMS, 2008).

MBNMS includes one of four major coastal upwelling regions worldwide. The 2008 MBNMS Final Management Plan describes the upwelling process as follows:

“Coastal upwelling occurs along the western edges of continents, where winds from the northwest drive oceanic surface waters away from shore due to the Coriolis effect. These shallow, relatively warm waters are replaced by deep, colder and nutrient rich waters driving high primary productivity, allowing phytoplankton to bloom, which in turn support zooplankton, providing a key prey resource for higher-order predators such as fishes, birds, and whales. Globally, these upwelling regions rival the productivity of tropical rain forests, and account for nearly 95 percent of the annual global production of marine biomass, in spite of only representing 0.1 percent of the ocean’s total surface area.”

The seasonal upwelling that occurs within MBNMS makes Monterey Bay extremely productive in terms of being able to support a variety of species, including some whales and small schooling fish (e.g., sardine, herring). The nearshore midwater zone contains over 80 species of fish, sharks, and rays including flatfish such as halibut, sand dabs, flounder, turbot, and sole, which are closely associated with sandy habitats, as well as surfperch, rockfish, gobies, and sculpins which are normally associated with rocky habitats. Midwater schooling fish include anchovy, herring, smelt, sardines, and silversides. Figure 1 shows the existing setting of the marine study area, including habitat designations.

Marine Mammals

All marine mammals occurring within MBNMS are protected under the Marine Mammal Protection Act, and some are also protected under the ESA. Marine mammals that are known to occur within MBNMS include:

- Steller sea lion (*Eumetopias jubatus*) – Federally threatened
- Guadalupe fur seal (*Arctocephalus townsendi*) – State and Federally Threatened
- Southern sea otter (*Enhydra lutris nereis*) – Federally threatened, State fully protected
- Blue whale (*Balaenoptera musculus*) – Federally endangered
- Fin whale (*Balaenoptera physalus*) – Federally endangered
- Humpback whale (*Megaptera novaeangliae*) – Federally endangered
- North Pacific right whale (*Eubalaena glacialis*) – Federally endangered, State fully protected
- Sperm whale (*Physeter macrocephalus*) – Federally endangered
- Sei whale (*Balaenoptera borealis*) – Federally endangered
- Killer whale (*Orcinus orca*) – Federally endangered
- Gray Whale (*Eschrichtius robustus*) – Delisted, though known to occur during migration
- Minke Whale (*Balaenoptera acutorostrata*) – Federally protected
- Short-finned pilot whale (*Globicephala macrorhynchus*) – Not listed
- Baird’s beaked whale (*Berardius bairdii*) – Not listed
- Beaked whales (*Mesoplodon spp.*) – Not listed
- Cuvier’s beaked whale (*Ziphius cavirostris*) – Not listed

- Northern elephant seal (*Mirounga angustirostris*) – State fully protected
- Northern fur seal (*Callorhinus ursinus*) – Not listed, but considered vulnerable
- Dalls porpoise (*Phocoenoides dalli*) – Federally protected
- Harbor porpoise (*Phocoena phocoena*, San Francisco-Russian River stock, Monterey Bay stock, and Morro Bay stock) – Federally protected
- Risso’s Dolphin (*Grampus griseus*) - Federally protected
- Common Dolphin – Long-beaked (*Delphinus capensis*) - Federally protected
- Pacific White-sided Dolphin (*Lagenorhynchus obliquidens*) - Federally protected

Marine mammals most likely to occur in the vicinity of the M1W outfall include the California sea lion, Harbor seal, southern sea otter, and humpback whale. The southern sea otter is common along the Monterey Bay Coast and the humpback whale is sometimes seen at the head of Monterey Canyon and is somewhat likely to be present in the project area. Seasonally, gray whales come in close to shore, and there are sightings of harbor porpoise and multiple species of dolphins. For more information see: <http://sanctuarysimon.org/monterey/sections/specialSpecies/index.php> (MBNMS, 2015).

Special Status Fish Species

Several federally or state listed fish species are known to occur in MBNMS:

- Steelhead (*Onchorhynchus mykiss irideus*, south-central California coast distinct population segment [DPS], and central California coast DPS) – Federally threatened
- Chinook salmon (*Oncorhynchus tshawytscha*, Central Valley Spring evolutionarily significant unit [ESU]) – Federally and state threatened
- Chinook salmon (*Oncorhynchus tshawytscha*, Central Valley Fall and Late Fall ESU) – Federal and state species of special concern
- Chinook salmon (*Oncorhynchus tshawytscha*, Sacramento River winter-run ESU)– Federally and state endangered
- Coho salmon (*Oncorhynchus kisutch*, central California Coast ESU) – Federally and state endangered
- River lamprey (*Lampetra ayresii*) – State species of special concern
- North American Green sturgeon (*Acipenser medirostris*, Southern DPS) – Federally threatened and state species of special concern
- White sturgeon (*Acipenser transmontanus*) – Federally endangered
- Longfin smelt (*Spirinchus thaleichthys*) – State threatened
- Eulachon (*Thaleichthys pacificus*, Southern DPS) – Federally threatened and state species of special concern
- Tidewater goby (*Eucyclogobius newberryi*) – Federally endangered and state species of special concern

- Cowcod (*Sebastes levis*) – Federal species of concern and considered overfished
- Bocaccio (*Sebastes paucispinis*) – Federal species of concern and considered overfished and state critically endangered
- Basking shark (*Cetorhinus maximus*, N. Pacific subpopulation) – State endangered
- White shark (*Carcharodon carcharias*) – Federally protected

Steelhead and salmon are anadromous species that use both fresh and salt water at different stages in their life cycle (incubation and juvenile rearing in freshwater, maturation at sea, and adult migration into rivers for reproduction). Adults or smolts may use the marine study area in migration to and from coastal streams, and as rearing during early marine residency. Like salmon, sturgeon are anadromous, migrating to the ocean and returning to fresh water to spawn. Green sturgeon are known to forage in estuaries and bays ranging from Monterey Bay to British Columbia. Tidewater goby can be flushed from Elkhorn Slough during tidal events, and the basking shark has been sighted in nearshore waters in Monterey Bay. (For more information see: <http://sanctuarysimon.org/monterey/sections/specialSpecies/index.php>) (MBNMS, 2015)

Invertebrates

Invertebrate species in MBNMS include squid, sponges, anemones, jellies, worms, corals, tunicates, snails, octopus, clams, and arthropods such as barnacles, crabs, and spot prawns. Thousands of various species of invertebrates populate MBNMS. Most invertebrate species are not harvested commercially, with the exception of squid, spot prawn, and Dungeness crab, rock crab, and octopus. Various types of invertebrates are found in all habitats from the sandy beach to intertidal, mid-water, and deep sea.

Black abalone (*Haliotis cracherodii*) is a federally endangered marine invertebrate known to occur in MBNMS. Black abalone are herbivorous gastropods (the same taxonomic class as snails and slugs) that live in rocky ocean waters. Black abalone are reported to be most abundant intertidally, from the mid to lower intertidal zones and potentially down to depths of 6 meters (19.7 feet).

Sea Turtles

Four species of federally listed sea turtles are known to exist within MBNMS: Federally endangered species include the green sea turtle (*Chelonia mydas*) and the leatherback sea turtle (*Dermochelys coriacea*). Federally threatened species include the loggerhead sea turtle (*Caretta caretta*), and olive ridley sea turtle (*Lepidochelys olivacea*). In the Pacific Ocean, breeding colony populations on the Pacific coast of Mexico of both green sea turtles and olive ridley sea turtles are listed as endangered; all others are listed as threatened.

Habitats and Natural Communities

MBNMS encompasses eight different marine and shoreline habitat areas, including rocky shores, kelp forests, sandy bottoms, estuaries, submarine canyons, deep sea, open ocean, and seamounts. Areas that would potentially be affected by the discharges through the M1W ocean outfall are described below. Other areas, including rocky shores, estuaries, submarine canyons, deep sea and seamounts, are located outside of the marine study area. The marine study area contains designated critical habitat for leatherback sea turtles and green sturgeon, and is also located within designated essential fish habitat (EFH) for groundfish, coastal pelagic species, and Pacific salmon. Each of these habitats is briefly discussed below.

Kelp Forests

Kelp forests provide a unique and diverse habitat utilized by numerous species, including marine mammals, fishes, other algae, and invertebrates. Just beyond the breaking waves, several species of kelp grow from the hard substrates. Although some individuals can persist for up to three years, the overall structure of the kelp forest is very dynamic. Kelp canopy cover varies seasonally; it is thickest in late summer and thins or disappears when large winter swells remove weakened older adults. The following spring, the next generation of individuals takes advantage of the thin canopy cover and increase in available light to grow rapidly. This, in addition to nutrient rich waters caused by upwelling, allows some species of kelp to grow up to 12 inches per day. The measured productivity (per square foot of sea floor) of a kelp forest is among the highest of any natural community.

In central coastal California, the two primary canopy-forming species in kelp forests are giant kelp (*Macrocystis pyrifera*) and bull kelp (*Nereocystis luetkeana*). Both can be found in the same kelp forest, but giant kelp is more typical of the Monterey Bay area. Some vertebrates, such as sea otters and many fishes, reside within kelp forests; others, such as seabirds, harbor seals, sea lions, and gray whales, visit kelp forests while foraging for food. Giant kelp and other algae also support large populations of benthic invertebrates, which in turn attract higher-order predators.

Sandy Bottoms

Most of the ocean floor within MBNMS is covered with sand or mud. The lack of hard substrate and shifting sand prevent algae or seaweeds from growing. However, many organisms live in the sand, generally in two broad zones: a shallow region dominated by infaunal crustaceans, and a deeper area dominated by tube-dwelling and sedentary polychaete worms. Nearshore areas may have dense beds of sand dollars, and deeper areas may have high numbers of brittle stars and sea pens.

Open Ocean

Although oceans cover 70 percent of the Earth's surface, only 5 percent of the Earth's surface consists of coral reefs and kelp forests. The remaining 65 percent make up the open ocean ecosystem, which typically lies well offshore where the water depth is greater than 330 feet. The waters of MBNMS are part of the eastern Pacific Ocean. Open ocean waters are 13,100 feet deep on average and in the Pacific basin reach a maximum depth of 36,000 feet.

Essential Fish Habitat

The M1W's ocean outfall through which the AWT Facility reverse osmosis concentrate would be disposed is located within designated Essential Fish Habitat (EFH) for groundfish, coastal pelagic species, and Pacific salmon.

Critical Habitat

The marine study area includes designated critical habitat for green sturgeon and leatherback sea turtle (See Figure 4.13-1). NOAA Fisheries designated critical habitat for the threatened southern DPS of green sturgeon in 2009, which extends from Monterey Bay north to Cape Flattery in Washington. Green sturgeon are long-lived, slow-growing fish, and are the most marine-oriented of the sturgeon species. Green sturgeon utilize both freshwater and saltwater habitat and are believed to spend the majority of their lives in nearshore oceanic waters, bays, and estuaries. Younger green sturgeon reside in freshwater, with adults returning to freshwater to spawn when they are approximately 15 years in age and over 4 feet in length. (<http://www.fisheries.noaa.gov/pr/species/fish/green-sturgeon.html>)

The leatherback sea turtle is the largest turtle and one of the largest living reptiles on earth. The leatherback is the only sea turtle that does not have a hard bony shell, but rather a carapace made of thick, leathery connective tissue. Leatherbacks are known as pelagic (open ocean) animals, but also forage in coastal waters and are the most migratory and wide ranging of sea turtle species. NOAA Fisheries designated approximately 16,910 square miles of critical habitat for leatherbacks along California's central coast in January 2012, stretching from Point Arena in Mendocino County to Point Arguello in Santa Barbara County. (<http://www.nmfs.noaa.gov/pr/species/turtles/>)

Although not in the marine study area, critical habitat for black abalone is designated along the majority of California's central coast both approximately 20 miles north and 10 miles south of the project area. Critical habitat for Steller sea lions includes the rookeries at Año Nuevo Island, approximately 40 miles northwest of the project marine study area.

Non-native Species

The presence of non-native aquatic species, some of which can be highly invasive and difficult to control, are increasingly common in coastal habitats worldwide. Estuaries, in particular, harbor

large numbers of introduced species. Within MBNMS, approximately 40 non-native species are known to exist in Elkhorn Slough approximately 6.5 miles north of the project marine study area, and another small number of species recently were reported in nearshore coastal waters. Non-native species in MBNMS include terrestrial plants and algae (European dune grass, sea rocket, brown alga), invertebrates (sponges, anemone, snails, mussel, clams), and vertebrates (yellowfin goby, American shad, striped bass).

3.2 Analytical Approach to Environmental Consequences (Effects)

The criteria used to determine whether an effect (impact) of a proposed action is or is not “significant” are based on Council on Environmental Quality (CEQ) Guidance and NOAA standards and practice, including the *“Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities: Companion Manual for NOAA Administrative Order 216-6A”* (NOAA, January 31, 2017). The term “effects” (which is synonymous with “impacts” in the Council on Environmental Quality [CEQ] regulations [40 CFR 1508.8]) includes ecological, aesthetic, historic, cultural, economic, social, or public health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that have both beneficial and adverse effects, even if on balance the agency believes that the effect would be beneficial. An agency action may also have no impact on a particular resource or human use.

To determine whether an effect is significant, CEQ regulations (40 CFR 1508.27) and NOAA procedures (NOAA Administrative Order [NAO] 216-6A) require the consideration of context and intensity of potential effects. The criteria used to determine the significance of impacts on the environment and human uses are included in the effects analysis for the environmentally preferred alternative; the same criteria are also used for the other alternatives. The decision maker must use the best available scientific information and analysis to present the environmental effects of the proposed action and alternative(s) in comparative form, providing a clear basis for choice among the options. The context of a proposed action refers to the affected environment and interests, which could be local, regional, national, or all three, depending upon the circumstances of the proposed action. Intensity refers, among other factors, to the severity of the effect, which may be long-term or short-term; none; negligible, minor, or moderate (less than significant), or significant; adverse or beneficial; and direct, indirect, or cumulative. A cumulative impact results from the incremental impact of an action on the environment when added to other past, present and reasonably foreseeable future actions regardless of the agency or person undertaking the action; described in CEQ regulations (40 CFR 1508.7). Reasonably foreseeable future actions cannot be limited only to those that have been approved or funded, but decision makers need not speculate about future actions that are not likely.

The categories used to designate impact significance are:

- No Impact (NI). There would be no impact if there is no potential for impacts, or if the environmental resource does not occur within the project area or the area of potential effect.
- Less than Significant impact (LS). This determination applies if there is a potential for some limited impact, but not a substantial adverse (or beneficial) effect that qualifies under the applicable significance criterion as a significant impact.
- Less than Significant impact with Mitigation (LSM). This determination applies if the project would result in an adverse effect that exceeds/qualifies under the applicable significance criterion, but feasible mitigation is available that would eliminate any adverse impact or reduce it to a less-than-significant level.
- Significant and Unavoidable impact even with implementation of Mitigation (SU). This determination applies if the proposed project would result in an adverse effect that exceeds/qualifies under the applicable significance criterion and even with mitigation implemented to lessen the impact, if available, the residual effect would remain significant. Therefore, the impact would be significant and unavoidable.

3.3 Environmental Consequences (Effects)

This section contains analyses of the anticipated effects of the No Action Alternative and Preferred Alternative on the quality of the human environment. As described above, the advanced water treatment process would generate up to 1.17 MGD of reverse osmosis concentrate that would be discharged via the existing M1W ocean outfall. The outfall is currently used to discharge treated wastewater effluent from the M1W Regional Wastewater Treatment Plant. The outfall terminates at the diffuser located approximately 2 miles offshore in 90 to 110 feet below sea level where a soft mud substrate predominates.

This section is organized as follows: First, the section addresses anticipated impacts of the Preferred Alternative: authorization of the new NPDES permit for the effluent discharge from the AWPf through the ocean outfall. The discussion of the direct and indirect impacts of the discharge focuses on the resource areas of water quality and marine biological resources. Next, the section considers anticipated cumulative impacts of the Preferred Alternative, including consideration of potential cumulative impacts from operational and construction components of the PWM Project, as well as potential cumulative impacts from combined discharge of the AWPf and the proposed MPWSP desalination project.

The PWM EIR identified only two significant and unavoidable impacts of the PWM Project, both relating to noise and vibration construction impacts. Both of these impacts have been avoided by M1W by not implementing those components of the PWM Project. In addition, the impacts

that are related to construction are not attributable to the Proposed Action at issue in this EA; the components of the PWM Project under construction are funded by the SRF loan program and Prop 1 grants and are not subject to authorization by MBNMS. However, construction impacts are referenced and considered in the cumulative impacts section below.

Finally, the section addresses anticipated impacts of the No Action Alternative.

Preferred Alternative

Anticipated Direct and Indirect Impacts of Preferred Alternative

Water Resources and Quality

The PWM EIR and Addendum 3, which are incorporated by reference in this EA, determined that the PWM Project would not have direct or indirect significant impacts on surface or marine water resources or qualities. A summary of the PWM EIR findings are provided here. The Hydrology and Water Quality: Groundwater section in the PWM EIR (Vol 1 p. 4.10-1 – 4.10-94) and Addendum No. 3 (pages 40-43) found the PWM Project (which is considered for authorization in this EA's Preferred Alternative, and referred to in this discussion as the "Preferred Alternative") would result in beneficial impacts to both groundwater levels and overall quality in the Salinas Valley Groundwater Basin and the Seaside Basin (see Table 4.10-12 Summary of Impacts - Hydrology and Water Quality: Groundwater, p. 4.10-51 of the Final EIR). The PWM EIR found that the Preferred Alternative would have a less than significant cumulative impacts to groundwater levels, recharge or storage in the Salinas Valley Groundwater Basin. The PWM EIR found construction of the Preferred Alternative would not contribute to significant impacts to groundwater levels and groundwater quality. In addition, the PWM EIR found the operation of the Preferred Alternative would have less than significant impacts to groundwater quality recharge, storage or quality in the Salinas Valley Groundwater Basin. The PWM EIR found that there would be no significant construction or operational impact to groundwater levels, recharge or storage in the Seaside Groundwater Basin nor would the Preferred Alternative make a considerable contribution to cumulative impacts to groundwater quality in the Seaside Basin.

The Hydrology and Water Quality: Surface Water section in the PWM EIR (Vol 1 p. 4.11-1 – 4.11-122) found that the Preferred Alternative would not have a substantial adverse impact related to a 100-year flood hazard area and would have beneficial operational impacts to Carmel River flows by providing a replacement supply to CalAm's diversions. In summary, the PWM EIR found that the Preferred Alternative would have less than significant operational impacts to surface water quality due to well maintenance discharges; marine water quality due to ocean discharges;

drainage pattern alterations; risks due to location within 100-year flood area; risks due to flooding due to levee/dam failure, or coastal inundation; seiche tsunami, or mudflow risk.¹⁵

The PWM EIR analyzed impacts of the AWPf production of purified recycled water. As described, the AWPf would produce, among other things, reverse osmosis concentrate, which would be piped to a proposed new brine and effluent receiving, mixing, and monitoring facility. The reverse osmosis concentrate would be discharged through the existing M1W outfall to Monterey Bay that runs through unincorporated portions of Monterey County and City of Marina land owned by CEMEX, ultimately reaching Monterey Bay. The PWM EIR identified that the current M1W wastewater discharge is governed by NPDES permit R3-2014-0013 issued by the RWQCB. The RWQCB considers compliance with the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) which establishes water quality objectives and beneficial uses for waters of the Pacific Ocean adjacent to the California coast outside of estuaries, coastal lagoons, and enclosed bays. The proposed action for this EA is MBNMS authorization of the reissuance of that NPDES permit.

For the PWM EIR, Trussell Technologies performed water quality quantitative analysis of the Preferred Alternative's ability to meet the Ocean Plan Water Quality objectives. Trussell Technologies conducted an analysis that estimated a worst-case water quality under numerous different operational scenarios for the wastewater that would be discharged through the ocean outfall and compared that discharge to the Ocean Plan objectives to determine whether there would be a significant effect on ocean water quality. MBNMS has reviewed these results, which show that the Preferred Alternative would not result in a significant effect on ocean water quality because the wastewater discharged through M1W's ocean outfall, including the Preferred Alternative's reverse osmosis concentrate, would consistently meet the water quality objectives of the Ocean Plan which are developed for the protection of marine aquatic life. In addition, the discharge effluent for the Preferred Alternative is considered a buoyant discharge (floats rather than sinks) because its salinity is closer to fresh water than salt water. For this reason, there is no concern for hypoxic or hypersaline conditions forming around the outfall which was verified in the modeling (see Appendix R Trussell Tech Memo 2017). The NPDES permit conditions state that the dissolved oxygen (DO) must not be depressed more than 10% from that which occurs naturally. Ambient DO levels in Monterey Bay at a depth of approximately 100 feet have ranged from 4.25 milligrams per liter (mg/L) to 8.00 mg/L which has a far greater natural variation. MBNMS has further considered the PWM effluent discharge modeling in light of the baseline MBNMS water quality discussed in Section 3.1. Accordingly, there are no anticipated significant

¹⁵ The PWM/GWR EIR identified one operational impact related to one of the source water diversions, the Reclamation Ditch Diversion; namely that the erosion or scouring of the unvegetated channel bottom near the diversion structure may occur if the pump was operated. Since the PWM EIR was certified, that facility has been constructed based on a final design approved by NOAA NMFS which resulted in a permanent structure that precludes scouring.

direct or indirect impacts of the Preferred Alternative (authorization of the NPDES permit for discharge of effluent from the AWPf through the ocean outfall) on water resources or qualities.

The Preferred Alternative potentially would result in beneficial impacts to water quality. The diversions installed at Blanco Drain and the Reclamation Ditch would remove pollutants from surface waters currently flowing without treatment to the Sanctuary through the Old Salinas River Channel and Moss Landing Harbor. PWM EIR Tables 4.11-15 through 4.11-17 located below, show the estimated pollutant load reduction that would occur if the Preferred Alternative is implemented for eight different constituents from the Reclamation Ditch and Blanco Drain on an annual basis.

EIR Table 4.11-15

Estimated Pollutant Removal due to Proposed Surface Water Diversion from Reclamation Ditch at Davis Road, 6 cfs capacity

Pollutant	Average Conc.	Average Annual Flow	Average Pollutant Load	Diverted Flow	Diverted Pollutant Load
	(mg/L)	(AFY)	(lb/yr)	(AFY)	(lb/yr)
Ammonia as N, Unionized	0.029	7,640	597	1,611	126
Ammonia as NH3	0.61	7,640	12,581	1,611	2,653
Chloride	106.41	7,640	2,195,025	1,611	462,852
Chlorophyll a, water column	0.016	7,640	332	1,611	70
Chlorpyrifos	0.0016	7,640	32	1,611	7
Diazinon	0.10	7,640	2,058	1,611	434
Dissolved Solids, Total	641.83	7,640	13,239,724	1,611	2,791,780
Nitrate as N	13.00	7,640	268,084	1,611	56,529
OrthoPhosphate as P	0.65	7,640	13,327	1,611	2,810
Suspended Solids, Total	69.46	7,640	1,432,718	1,611	302,108

Source: Schaaf & Wheeler, 2015b

EIR Table 4.11-17

Estimated Pollutant Removal due to Proposed Surface Water Diversions from Blanco Drain

Pollutant	Average Conc.	Average Annual Flow	Average Pollutant Load	Diverted Flow	Diverted Pollutant Load
	(mg/L)	(AFY)	(lb/yr)	(AFY)	(lb/yr)
Ammonia as N, Unionized	0.014	2,620	98	2,620	98
Ammonia as NH3	0.20	2,620	1,432	2,620	1,432
Chlorophyll a, water column	0.0021	2,620	15	2,620	15
Chlorpyrifos	0.00085	2,620	6	2,620	6
Diazinon	0.011	2,620	76	2,620	76
Dissolved Solids, Total	2019.7	2,620	14,287,358	2,620	14,287,358
Nitrate as N	65.27	2,620	461,726	2,620	461,726
OrthoPhosphate as P	0.85	2,620	6,026	2,620	6,026

Source: Schaaf & Wheeler, 2014b

Marine Biological Resources

The only aspect of the Proposed Project with the potential to adversely affect marine resources is operational discharge of RO concentrate generated by the AWPf via the Monterey One Water existing ocean outfall.

The Marine Biology section in the PWM EIR (Vol 1 p. 4.13-1 – 4.13-32) and Addendum No. 3 (pages 44-45), both incorporated by reference in this EA, found the PWMR Project would not have a substantial adverse impact on any marine species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW, USFWS, NOAA Fisheries or NOAA ONMS/MBNMS. Moreover, the PWM EIR also identified that the Preferred Alternative would not: 1) conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan governing the marine study area; and, 2) interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. In addition, the PWM EIR found the Preferred Alternative would result in less than significant operational impacts on marine biological resources. MBNMS has reviewed the findings in the PWM EIR, as well as the consultations with NMFS and FWS under the Endangered Species Act and the Magnuson-Stevens Act, which did not identify potential adverse effects on threatened or endangered marine species, marine mammals, marine critical habitat, or essential fish habitat. Based on these materials, MBNMS does not anticipate that the Preferred Alternative would have significant direct or indirect impacts on marine biological resources.

Anticipated Cumulative Impacts of Preferred Alternative

Cumulative Projects

There are no expected cumulative projects in the vicinity except for the construction components of the Preferred Alternative (analyzed in detail in the PWM EIR, which is incorporated by reference here) and the Monterey Peninsula Water Supply Project (MPWSP). The MPWSP and the Preferred Alternative would be located in the same general vicinity and would share transportation pipelines. Relevant to this analysis, the MPWSP effluent would be comingled and discharged through the M1W outfall pipe. At this stage, the MPWSP is a potential cumulative project as it is still pending various regulatory approvals, including a potential NPDES permit amendment and authorization by MBNMS. However, because the MPWSP is a reasonably foreseeable potential cumulative project and for purposes of transparency and completeness,

the potential cumulative impacts of the MPWSP and Preferred Alternative combined discharge are considered here.

Marine Water Resources and Quality and Marine Biological Resources

The PWM EIR concluded there would be less than significant cumulative impacts to hydrology and water quality of inland surface waters. However, the EIR found that the combined operations of the Preferred Alternative and the MPWSP could result in significant cumulative impacts from an exceedance of Ocean Plan water quality objectives. See Appendix V, Ocean Plan Compliance Assessment for the Monterey Peninsula Water Supply Project and Project Variant (herein referred to as the MPWSP/Variant Ocean Plan Assessment) (Trussell Technologies, 2015b).

The PWM EIR found this potentially significant cumulative impact would be mitigated with implementation of Mitigation Measure HS-C: Implement Measures to Avoid Exceedances over Water Quality Objectives at the Edge of the Zone of Initial Dilution (ZID), copied below. A secondary or indirect effects analysis of implementation of Mitigation Measures HS-C was included in the EIR. M1W is required to adhere to the following mitigation or other mitigation—namely, M1W would not accept desalination brine into its outfall unless and until it can be demonstrated that Ocean Plan water quality objectives are achieved to protect Monterey Bay and its resources from adverse effects of brine discharge.

The PWM EIR also found that the Preferred Alternative would have a considerable contribution to significant cumulative marine biological resources impact constituents if the MPWSP 6.4 MGD desalination project is operated. It further found, however, that with implementation of Mitigation Measure HS-C, the cumulative impact would be reduced to a less than significant level.

A similar analysis was conducted for the MPWSP FEIS/EIR, and the updated modeling and discussion in the FEIR/EIS regarding the cumulative impacts of the combined MPWSP/PWM discharge through the ocean outfall is incorporated by reference here. In particular, this EA incorporates by reference the applicable cumulative effects sections of the MPWSP FEIR/EIS that consider and addresses potential combined impacts of the MPWSP and the Preferred Alternative on water quality and marine resources (*see* p. 5.5-69 of the MPWSP FEIR/EIS, for Surface Water Hydrology and Water Quality; and p. 5.5-135, Marine Biological Resources). The section of the FEIR/EIS addressing cumulative impacts on water quality addresses potential impacts related to salinity and ocean plan constituents for the combined MPWSP-PWM discharge. With respect to potential cumulative impacts of the PWM discharge combined with potential MPWSP discharge, this EA also incorporates by reference the FEIR/EIS's discussion of mitigation measures for the MPWSP discharge. MPWSP Mitigation Measure 4.3-4 ensures that the operational discharges from the MPWSP are in compliance with the 2 ppt receiving water salinity limitation at the BMZ

compliance point required by the California Ocean Plan and the discharger(s) shall implement a Monitoring and Reporting Plan (Plan). The Plan shall, at a minimum, include protocols for monitoring of effluent and receiving water salinity characteristics as well as protocols for determining statistically significant changes in benthic community composition within the maximum extent of the ZID as compared to baseline conditions (established a minimum of one year prior to operations) that is directly associated with changes in salinity resulting from operational discharges (with consideration given to natural and seasonal variations and long-regional trends). Such protocols shall include, but not be limited to, monitoring for benthic community health, aquatic life toxicity, and hypoxia, within the ZID. MPWSP Mitigation Measure 4.3-5 states that prior to MPWSP operations, and as part of the MRWPCA NPDES Permit amendment process (Order No. R3-2014-0013, NPDES Permit No. CA0048551), the permittee shall complete a water quality assessment similar to the analysis conducted by Trussell Tech for the combined discharge (Appendix V). In assessing the potential combined discharge, the MPWSP FEIR/EIS reached a cumulative impacts conclusion of less than significant with mitigation for surface water hydrology and water quality, and a cumulative impacts conclusion of less than significant for marine resources.

This EA does not authorize the MPWSP project nor its discharges and the NPDES permit requirements are themselves measures based, in part, on the consideration of cumulative effects on receiving waters. Discharges would be within parameters considered not to result in a cumulatively significant effect on water quality and the combined discharge would not have a cumulatively significant, additive or synergistic impact on water quality or marine resources. Therefore, and based on the modeling, data, and analysis described above, potential cumulative impacts of the combined MPWSP-Preferred Alternative discharge would be less than significant with mitigation. Additional or supplemental NEPA analysis will be conducted, if necessary and appropriate, if the NPDES permit is further amended or reissued, whether for implementation of the MPWSP or otherwise. For more information, see Appendix I.

MITIGATION MEASURE HS-C/MR-C: IMPLEMENT MEASURES TO AVOID EXCEEDANCES OVER WATER QUALITY OBJECTIVES AT THE EDGE OF THE ZONE OF INITIAL DILUTION

As part of the amendment process to modify the existing M1W NPDES Permit (Order No. R3-2014-0013, NPDES Permit No. CA0048551) per 40 Code of Regulations Part 122.62, it would be necessary to conduct an extensive assessment in accordance with requirements to be specified by the RWQCB. It is expected that the assessment would include, at a minimum, an evaluation of the minimum probable initial dilution at the point of discharge based on likely discharge scenarios and any concomitant impacts on water quality and beneficial uses per the Ocean Plan. Prior to operation of the MPSWP desalination plant, the discharger(s) will be required to test the MPSWP source water in accordance with protocols approved by the RWQCB. If the water quality assessment indicates that the water at the edge of the ZID will exceed the Ocean Plan water quality objectives, the M1W will not accept the desalination brine discharge at its outfall, and the following design features and/or operational measures shall be employed,

individually or in combination, to reduce the concentration of constituents to below the Ocean Plan water quality objectives at the edge of the ZID:

- a. **Additional pre-treatment of MPWSP source water at the Desalination Plant:** Feasible methods to remove PCBs and other organic compounds from the MPWSP source water at the desalination plant include additional filtration or use of granular activated carbon (GAC). GAC acts as a very strong sorbent and can effectively remove PCBs and other organic compounds from the desalination plant source water.
- b. **Treatment of discharge at the Desalination Plant:** Feasible methods to remove residual compounds from the discharge to comply with water quality objectives at the edge of the ZID are use of GAC (similar to that under the additional pre-treatment of MPWSP source water) and advanced oxidation with ultraviolet light with concurrent addition of hydrogen peroxide. The method of using advanced oxidation with ultraviolet light with concurrent addition of hydrogen peroxide is used for the destruction of a variety of environmental contaminants such as synthetic organic compounds, volatile organic compounds, pesticides, pharmaceuticals and personal care products, and disinfection byproducts. This process is energy intensive but requires a relatively small construction footprint.
- c. **Short-term storage and release of brine at the Desalination Plant:** When sufficient quantities of treated wastewater from the Regional Treatment Plant to prevent an exceedance of Ocean Plan objectives at the edge of the ZID are not available, brine from the desalination plant would be temporarily stored at the MPWSP site in the brine storage basin (see MPWSP DEIR Chapter 3, Project Description) and discharged (pumped) in pulse flows (up to the capacity of the existing outfall), such that the flow rate allows the discharge to achieve a dilution level that meets Ocean Plan water quality objectives at the edge of the ZID.
- d. **Biologically Active Filtration at the Regional Treatment Plant:** As part of the AWPf at the Regional Treatment Plant, the PWM Project includes the potential for use of upflow biologically active filtration following ozone treatment to reduce the concentration of ammonia and residual organic matter present in the ozone effluent and to reduce the solids loading on the membrane filtration process. The biologically active filtration system would consist of gravity-feed filter basins with approximately 12 feet of granular media, and a media support system. Ancillary systems would include an alkalinity addition system for pH control, backwash waste water basin (also used for membrane filtration backwash waste water), backwash pumps, an air compressor and supply system for air scour, an air compressor and supply system for process air, and a wash water basin to facilitate filter backwashing (the wash water basin may be combined with the membrane filtration flow equalization basin). This biologically active filtration system may be needed to meet Ocean Plan water quality objectives at the edge of the ZID (if and/or when discharges from the Project are combined with discharges from the MPWSP with 6.4 MGD desalination plant). This optional component of the Project would become a required process if the MPWSP with 6.4 MGD desalination plant is in operation and the other components of the mitigation do not achieve Ocean Plan compliance.

Construction and Operational Impacts

Table 1 from the PWM EIR, below, summarizes the PWR EIR conclusions regarding potential operational environmental consequences (effects) of the PWM AWPf, which are incorporated by reference here. No operational mitigation measures were adopted by M1W for the AWPf in their project approval. Furthermore, ongoing environmental compliance activities at each construction site are ensuring that the project construction activities do not result in adverse impacts on the environment as identified in the PWM Project EIR. In addition, the Proposed

Action would also not result in any changes in the operation of the source water diversions, product water conveyance, and injection well facilities aspects of the Preferred Alternative. There are no significant project-level operational impacts of the AWPf. All construction impacts previously identified for the project have been mitigated to a less-than-significant level by mitigation measures already implemented (see PWM EIR and Appendix S). The rationale for the conclusions in the table can be found in the PWM EIR on the page numbers in the last column.

Reviewing this information, MBNMS does not anticipate that the Proposed Action – authorization of the NPDES permit for the AWPf effluent discharge – would have a cumulatively significant additive or synergistic impact when considered in conjunction with the construction impacts. The Proposed Action would not impact the construction noise, vibration, aesthetics, or other impacts and would not have a considerable contribution to cumulatively significant construction or operational impacts.

Table 1. Impacts Analysis of the Proposed Project and the No Action Alternatives

Impact Statement	Proposed Project Impact [1]	No Action Alternative Impact [1]	EIR/Addendum No. 3 page reference
Aesthetics			
AE-3: Degradation of Visual Quality of Sites and Surrounding Areas. Project components would not result in a substantial degradation of the visual character of the project area and its surroundings.	LS	LS	EIR: 4.2-34 to 4.2-42
AE-4: Impacts due to Permanent Light and Glare during Operations. Operation of Project facilities may result in a substantial new source of light or glare that would adversely affect day or nighttime views in the area.	LS	LS	Addendum: 27-28
Air Quality and Greenhouse Gas			
AQ-5: Operational Air Quality Violation. Operation of the Project would result in criteria pollutant emissions but would not violate air quality standards or contribute substantially to an existing or projected air quality violation.	LS	LS	
AQ-6: Operational Criteria Pollutant Emissions. Operation of the Project would result in a net increase of criteria pollutants in a region that is non-attainment under State ambient air quality standards, but the increase would not be cumulatively considerable.	LS	LS	
AQ-7: Operational Exposure of Sensitive Receptors to Pollutants. Operation of the Project would not expose sensitive receptors to substantial pollutant concentrations.	LS	LS	EIR: 4.3-29 to 4.3-33
AQ-8: Operational Odors. Operation of the Project would not create objectionable odors affecting a substantial number of people.	LS	LS	Addendum: 28-29
AQ-9C: Operational Greenhouse Gas Emissions. Operation of the Project would generate greenhouse gas emissions, either directly or indirectly. These emissions would not exceed significance thresholds such that they would result in a considerable contribution to significant cumulative impacts of greenhouse gas emissions and the related global climate change impacts. In addition, the Project would not conflict with applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.	LS	LS	
Biological Resources: Fisheries (See EIR page 4.4-56 for beneficial effects of the PWM Project on freshwater and anadromous fisheries)	NI	NI	EIR: 4.4-43 to 4.4-57
The AWPf operations would not result in any effects to freshwater and anadromous fish resources.			Addendum: 30-33
Biological Resources: Terrestrial			
BT-5: Operational Impacts to Special-Status Species. Project operations would not adversely affect, either directly or through habitat modification, special-status plant and wildlife species and their habitat.	LS	LS	EIR: 4.5-97 to 4.5-111
BT-6: Operational Impacts to Sensitive Habitats. Project operations may adversely affect sensitive habitats (including riparian, wetlands, and/or other sensitive natural communities) within and adjacent to the Project Study Area.	NI	NI	Addendum: 30-33
BT-7: Operational Impacts to Movement of Native Wildlife and to Native Wildlife Nursery Sites. Project operations would not adversely affect native wildlife corridors and wildlife nursery sites.	LS	LS	

Table 1. Impacts Analysis of the Proposed Project and the No Action Alternatives

Impact Statement	Proposed Project Impact [1]	No Action Alternative Impact [1]	EIR/Addendum No. 3 page reference
BT-8: Operational Conflicts with Local Policies, Ordinances, or approved Habitat Conservation Plan. Project operations would not conflict with local policies or ordinances protecting biological resources.	LS	LS	
Energy and Mineral Resources			
EN-2: Operational Impacts due to Energy Use. Project operations would not result in the consumption of energy such that existing supplies would be substantially constrained nor would the Project result in the unnecessary, wasteful, or inefficient use of energy resources.	LS	LS	EIR: 4.7-13 to 4.7-16
EN-3: Operational Impacts on Mineral Resources. The Project would not result in a significant impact due to the loss of availability of known mineral resources of value to the region or to the state or to any locally-important mineral recovery site.	LS	LS	Addendum: 36-37
Geology, Soils, and Seismicity			
GS-3: Exposure to Fault Rupture. The Project would be located in a seismically active area, and portions of the Project may be affected by fault rupture from an earthquake on local faults; however, this exposure would not result in a substantial risk to people or structures.	NI	NI	
GS-4: Exposure to Seismic Ground Shaking and Liquefaction. The Project would be located in a seismically active area; however, Project operations would not expose people or structures to a substantial risk of loss, injury, or death involving exposure to seismic groundshaking and liquefaction.	LS	LS	EIR: 4.8-35 to 4.8-40
GS-5: Exposure to Coastal Erosion and Sea Level Rise. The Proposed CalAm Distribution System Monterey Pipeline would be exposed to substantial soil erosion as a result of sea level rise.	NI	NI	Addendum: 38
GS-6: Hydro-Collapse of Soils from Well Injection. Project operation would not create a substantial risk to life or property due to its facilities being located on a geologic unit or soils that are unstable, or that would become unstable as a result of hydro-collapse.	NI	NI	
GS-7: Exposure to Expansive and Corrosive Soils. The Project would not result in substantial risks to the public or other facilities due to location on expansive or corrosive soil types.	LS	LS	
Hazards and Hazardous Materials			
HH-6: Use and Disposal of Hazardous Materials During Operation. Project operations would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LS	LS	EIR: 4.9-43 to 4.9-47
HH-7: Operation of Facilities on Known Hazardous Materials Site. Project facilities would be located on a known hazardous materials site; however, the Project would not result in a significant hazard to people or the environment.	LS	LS	Addendum: 38-39
Hydrology and Water Quality: Groundwater			
GW-3: Operational Groundwater Depletion and Levels: Salinas Valley Groundwater Basin. Operation of the Project would not deplete groundwater supplies in the Salinas Valley nor interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater levels in the Salinas Valley Groundwater Basin.	BI	BI	EIR: 4.10-57 to 4.10-75 Addendum: 40-42

Table 1. Impacts Analysis of the Proposed Project and the No Action Alternatives

Impact Statement	Proposed Project Impact [1]	No Action Alternative Impact [1]	EIR/Addendum No. 3 page reference
GW-4: Operational Groundwater Depletion and Levels: Seaside Basin. Operation of the Project would not deplete groundwater supplies in the Seaside Basin nor interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater levels in the Seaside Basin.	NI	NI	
GW-5: Operational Groundwater Quality: Salinas Valley. Operation of the Project would not degrade groundwater quality in the Salinas Valley.	BI	BI	
GW-6: Operational Groundwater Quality: Seaside Basin. Project operations would not degrade groundwater quality in the Seaside Basin, including due to injection of purified recycled water into the basin.	BI/ LS	BI/ LS	
Hydrology and Water Quality: Surface Water (See EIR pages for Beneficial Effects)			
HS-3: Operational Impacts to Surface Water Quality due to Well Maintenance Discharges. Project operations would not violate any water quality standards or waste discharge requirements, would not cause substantial erosion or siltation, and would not otherwise substantially degrade surface water quality due to well maintenance discharges.	NI	NI	
HS-5: Operational Marine Water Quality due to Ocean Discharges. Project operational discharges of reverse osmosis concentrate to the ocean through the M1W outfall would not violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.	LS[2]	LS[2]	
HS-6: Operational Drainage Pattern Alterations. The Project would alter existing drainage patterns of the component sites by increasing impervious surfaces but would not substantially increase the rate or amount of runoff such that it would: (1) cause erosion or siltation on- or off-site, (2) cause flooding on- or offsite, or (3) exceed the existing storm drainage system capacity.	LS	LS	EIR: 4.11-65 to 4.11-95
HS-7: Operational Carmel River Flows. Project operations would result in reduced pumping of the Carmel River alluvial aquifer resulting in increased flows in Carmel River that would benefit habitat for aquatic and terrestrial species.	NI	NI	Addendum: 40-42.
HS-8: Operational Risks due to Location within 100-Year Flood Area. Portions of the Project would be located within a 100-year flood hazard area but would not impede or redirect flood flows.	NI	NI	
HS-9: Operational Risks due to Flooding due to Levee/Dam Failure, or Coastal Inundation. During operations, some Project facilities may be exposed to flooding due to failure of a levee or dam, sea level rise, and storm surges/tides related to climate change, but this exposure would not pose a substantial nor significant risk of loss, injury, or death.	NI	NI	
HS-10: Operational Seiche, Tsunami, or Mudflow Risk. The Project operations would not expose people or structures to substantial risk from flooding due to a seiche, tsunami, or mudflow.	NI	NI	
Land Use, Agriculture & Forest Resources			
LU-2: Operational Consistency with Plans, Policies, and Regulations. The Project would have one or more components that would potentially conflict, or be inconsistent with, applicable land use plans, policies, and regulations without implementation of mitigation measures identified in this EIR.	LS[3]	LS[3]	EIR: 4.12-37 to 4.12-50
LU-3: Operational Indirect Farmland Conversion. The Project would not change the existing environment such that Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is converted to non-agricultural use.	LS	LS	Addendum: 42-43

Table 1. Impacts Analysis of the Proposed Project and the No Action Alternatives

Impact Statement	Proposed Project Impact [1]	No Action Alternative Impact [1]	EIR/Addendum No. 3 page reference
<p>Marine Biological Resources (See EIR pages for Beneficial Effects)</p> <p>MR-1: Operational Impacts on Marine Biological Resources. Operation of the Project would not result in substantial adverse effects on candidate, sensitive, or special-status species and would not interfere substantially with the movement of any native resident or migratory fish or wildlife species.</p>	LS	LS	EIR: 4.13-19 to 4.13-22 Addendum: 44-45
<p>Noise and Vibration</p> <p>NV-4: Operational Noise. Operation of the Project facilities would potentially increase existing noise levels but would not exceed noise level standards and/or result in nuisance impacts at sensitive receptors.</p>	LS	LS	EIR:4.14-54 to 4.14-59: Addendum: 45-46
<p>Population and Housing</p> <p>PH-2: Operations and Infrastructure-Related Growth Inducement. Operation of the Project would not directly result in population growth and would not indirectly result in inducement of substantial population growth.</p>	NI	NI	EIR:4.15-7 to 4.15-8: Addendum: 46-47
<p>Public Services, Utilities, Recreation</p> <p>PS-4: Public Services Demand During Operation. Operation of the Project would not result in public service demands for fire and police protection services, schools, or parks that would result in the need for new or physically altered facilities to maintain service capacity or performance objectives.</p> <p>PS-5: Landfill Capacity for Operations. Operation of the Project would not result in adverse effects on landfill capacity or be out of compliance with federal, state, and local statutes and regulations related to solid waste.</p>	LS	LS	EIR: 4.16-16 to 4.16-18: Addendum: 47-48
<p>Traffic and Transportation</p> <p>TR-5: Operational Traffic. Operation and maintenance of the Project would result in small traffic increases on regional and local roadways but would not substantially affect the performance of the regional circulation system.</p>	LS	LS	EIR:4.17-41 to 4.15-42: Addendum: 48-49
<p>Water Supply and Wastewater Systems</p> <p>WW-3: Operational Water Supply and Entitlements. Sufficient water supplies are available for operation of the Project; prior to construction of each source water diversion component and prior to diversion of secondary treated effluent, the project proponents would obtain applicable water rights, permits, or agreements.</p> <p>WW-4: Operational Wastewater Treatment Capacity. Operation of the Project would not result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.</p>	LS	LS	EIR: 4.18-29 to 4.18-37: Addendum: 49-50

Topical Section/ Cumulative Issue	Determination of Significance and Discussion of Contribution of the Project to Cumulative Impacts (if applicable) <i>[EIR page indicated in parentheses is the starting page where in the reader can find additional detail on the analysis and conclusions. See also Addendum No. 3 pages 50 to 54.]</i>	Mitigation Measures
Aesthetics	LS: There would be no significant cumulative construction or operational aesthetic impacts. [EIR starting at page: 4.2-42]	None required
Air Quality & Greenhouse Gas emissions	LS: The Project would not make a considerable contribution to significant cumulative impacts of greenhouse gas emissions and the related global climate change impacts [EIR starting at page: 4.3-33]	None required
Biological Resources: Fisheries	LS: There would be no significant construction or operational cumulative impacts to biological resources: fisheries. [EIR starting at page: 4.4-57]	None required
Biological Resources: Terrestrial	LS: The Project would not make a considerable contribution to significant cumulative impacts to biological resources: terrestrial. [EIR starting at page: 4.7-17]	None required
Cultural and Paleontological Resources	LS: There would be no significant construction or operational cumulative impacts to cultural and paleontological resources. [EIR starting at page: 4.6-31]	None required
Energy and Mineral Resources	LS: The Project would not make a cumulatively considerable contribution to a significant cumulative energy impact. [EIR starting at page: 4.7-17]	None required
	LS: There would be no significant construction or operational cumulative impacts to mineral resources. [EIR starting at page: 4.7-17]	None required
Geology, Soils, and Seismicity	LS: There would be no significant construction or operational cumulative geology, seismicity or soils impacts. [EIR starting at page: 4.8-40]	None required
Hazards and Hazardous Materials	LS: There would be no significant construction or operational cumulative impacts related to hazards or hazardous materials. [EIR starting at page: 4.9-47]	None required
Hydrology/Water Quality: Groundwater	LS: The Project would not contribute to significant cumulative impacts to groundwater levels, recharge, storage or quality in the Salinas Valley Groundwater Basin. There would be no significant construction or operational impact to groundwater levels, recharge or storage in the Seaside Groundwater Basin. The Project would not make a considerable contribution to cumulative impacts to groundwater quality in the Seaside Basin. [EIR starting at page: 4.10-75]	None required
Hydrology/Water Quality: Surface Water	LS: There would be no significant construction or operational cumulative impacts to hydrology and water quality of inland surface waters. [EIR starting at page: 4.11-95]	None required
	LSM: If the desalination brine is added to the discharge from the AWPf or RTP, the Project would potentially make a considerable contribution to significant cumulative impacts to marine water quality due to the potential exceedance of the California Ocean Plan water quality objectives for several constituents; however, with implementation of Mitigation Measure HS-C, the impact would be reduced to less than significant and the Project would not make a considerable contribution to a significant cumulative impact. [EIR starting at page: 4.11-96]	HS-C
Land Use, Agriculture, and Forest Resources	LS: There would be no significant construction or operational cumulative land use impacts, and the Project would not make a considerable contribution to significant cumulative impacts related to conversion of agricultural lands within unincorporated Monterey County. [EIR starting at page: 4.12-50]	None required
Marine Biological Resources	LSM: If the desalination brine is added to the discharge from the AWPf or RTP, the Project would potentially result in a considerable contribution to significant cumulative impacts on marine biological resources due to the potential exceedance of the Ocean Plan water quality objectives for several constituents; however, with implementation of Mitigation Measure MR-C, the impact would be reduced to less than significant and the Project would not make a considerable contribution to a significant cumulative impact. [EIR starting at page: 4.13-22]	MR-C

Topical Section/ Cumulative Issue	Determination of Significance and Discussion of Contribution of the Project to Cumulative Impacts (if applicable) <i>[EIR page indicated in parentheses is the starting page where in the reader can find additional detail on the analysis and conclusions. See also Addendum No. 3 pages 50 to 54.]</i>	Mitigation Measures
Noise and Vibration	LS: There would be no significant construction or operational cumulative noise and vibration impacts. [EIR starting at page: 4.14-57]:	None required
Population and Housing	LS: The Project would not make a considerable contribution to significant cumulative impacts related to population and housing. [EIR starting at page: 4.15-8]	None required
Public Services, Recreation, and Utilities	LS: The Project would not contribute to cumulative impacts related to schools, parks, and recreational facilities. The Project would not make a considerable contribution to significant cumulative impacts to other public services and utilities (fire and police protection, solid waste). [EIR starting at page: 4.16-18]	None required
Traffic and Transportation	LS: There would be no significant cumulative construction-related traffic and transportation impacts. The Project would not make a considerable contribution to significant cumulative traffic and transportation impacts due to cumulative development. [EIR starting at page:4.17-42]	None required
Water Supply and Wastewater Systems	LS: The Project would not make a considerable contribution to significant cumulative impacts to water supply. [EIR starting at page:]	None required
	LS: There would be no significant cumulative impacts on wastewater treatment capacity or ocean outfall disposal capacity. [EIR starting at page: 4.18-37]	None required

No Action Alternative

Under this alternative, the impacts of the Preferred Alternative construction, as identified in the EIR and the USBR EA would occur. The operational impacts would also all occur, but in some cases, such as energy, chemical usage, and the amount of AWPf by product (RO concentrate) discharge to the ocean outfall would be reduced. Net pollutant loads of many pollutants to MBNMS may be higher than if the Preferred Alternative is implemented because under the No Action Alternative, there would be no diversions from the Reclamation Ditch and Blanco Drain so pollutants would not be removed from those surface waters currently flowing without treatment to the Sanctuary through the Old Salinas River Channel and Moss Landing Harbor. PWM EIR Tables 4.11-15 through 4.11-17 located in the Preferred Alternative section, show the estimated pollutant load reduction that would occur if the Preferred Alternative is implemented for eight different constituents from the Reclamation Ditch and Blanco Drain on an annual basis.

Under the No Action Alternative, the region would not fully achieve the water quality and Carmel River benefits of the Preferred Alternative. A smaller amount of water (variable year to year depending upon RTP operations and constituent concentrations) would be produced by the AWPf and made available to meet replacement supply needs for CalAm to use in lieu of the Carmel River. An alternative water supply may need to be implemented to meet the same water supply needs lost by the No Action Alternative.

The environmental effects of the effluent discharge that would result from the No Action alternative are materially the same as the effects of the effluent discharge that would result from the Preferred Alternative. This is because any discharge from M1W would be required to meet the California Ocean Plan objectives. For the No Action Alternative, the existing NPDES permit would remain in effect with reduced operating capacity of the AWPf. The Preferred Alternative would have different dilution scenarios based on the characteristics of the effluent but would also meet the California Ocean Plan objectives. As such, only minor differences in impacts to water quality and marine resources are expected between the two Alternatives. For the reasons described in the impacts analysis for the Preferred Alternative, implementation of the No Action Alternative would be expected to result in less than significant impacts on water quality and marine resources.

In summary, the impacts conclusions for the PWM effluent discharge are as follows: all direct and indirect impacts from the discharge on water quality or marine biological resources are less than significant. While cumulative impacts of the MPWSP-Preferred Alternative combined discharge may be significant, they would be mitigated to less than significant with implementation of mitigation measure HS-C and the mitigation measures from the MPWSP EIS/EIR. The Preferred Alternative would not result in a considerable contribution to cumulatively significant construction or operational impacts. Impacts of the Preferred Alternative would not be materially different from impacts of the No Action Alternative.

4.0 CONSULTATIONS AND OTHER FEDERAL COMPLIANCE

For the PWM EIR, the United States Environmental Protection Agency (USEPA) took the federal lead to consult with the United States Fish and Wildlife Service (USFWS), and NMFS. By way of delegation, the State Water Board and USBR took the federal lead to consult with the State Historic Preservation Office (SHPO). In the USBR's preparation of its EA, it relied upon the consultation by the USEPA and the State Water Board, with additional Indian Trust Assets consultation as required by federal statutes, to adopt their Finding of No Significant Impact. Since the consultation occurred, several project changes have been approved by the USFWS, NMFS, and SHPO as not requiring additional consultation under Section 7 of the Endangered Species Act (ESA) and under Section 106 of the National Historic Preservation Act (NHPA), including the following (See Appendix O for related correspondence about these project changes):

- Changes from the AWPf peak production of 4 to 5 MGD (in accordance with Addendum No. 3)
- Changes to the Blanco Drain and Reclamation Ditch Diversion Project site plans, including the Area of Potential Effect for Section 106 of the NHPA, and project impact area for ESA.

4.1 Endangered Species Act

The Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1531, et seq.), provides for the conservation of species that are endangered or threatened (for information on endangered and threatened marine species, (see <http://www.nmfs.noaa.gov/pr/species/esa/>) throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The ESA directs all Federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the Act. The National Marine Fisheries Service (NMFS) works with U.S. Fish and Wildlife Service (USFWS) to manage ESA-listed species. Generally, NMFS manages marine species, while USFWS manages land and freshwater species.

A species is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become an endangered species within the foreseeable future. When listing a species as threatened or endangered, NMFS or USFWS also designate critical habitat for the species to the maximum extent prudent and determinable (16 USC § 1533(a)(3)).

Section 7(a)(2) of the ESA states that each Federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. In fulfilling these requirements, each agency must use the best

scientific and commercial data available. The consultation process is further developed in regulations promulgated at 50 CFR Part 402.

The ESA requires action agencies to consult or confer with the Services when there is discretionary Federal involvement or control over the action. When a Federal agency's action "may affect" a protected species, that agency is required to consult with NMFS or USFWS, depending upon the endangered species, threatened species, or designated critical habitat that may be affected by the action (50 CFR §402.14 (a)). If a Federal agency determines that an action "may affect, but is not likely to adversely affect" endangered species, threatened species, or designated critical habitat it informally consults with NMFS or the USFWS (50 CFR §402.14 (b)). This finding can be made only if ALL of the reasonably expected effects of the proposed action would be beneficial, insignificant, or discountable. An action agency is required to formally consult with the Services if it reaches an adverse effect determination.

Most consultations are conducted informally with the Federal agency or a designated non-Federal representative. When the biological assessment or other information indicates that the action has no likelihood of adverse effect (including evaluation of effects that may be beneficial, insignificant, or discountable), the Services provide a letter of concurrence, which completes informal consultation. To comply with the section 7 regulations, the initiation package is submitted with the request for formal consultation and must include the materials listed in 50 CFR §402.14(c). If a biological assessment is required, formal consultation cannot be initiated until the biological assessment is completed. The contents of biological assessments prepared pursuant to the Act are largely at the discretion of the action agency although the regulations provide recommended contents (50 CFR §402.12(f)). Formal consultations determine whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or destroy or adversely modify critical habitat (adverse modification), and they are documented by a biological opinion (BiOp). They also determine and authorize the amount or extent of anticipated incidental take in an incidental take statement, identify reasonable and prudent alternatives, if any, when an action is likely to result in jeopardy or adverse modification, and identify ways the action agencies can help conserve listed species or critical habitat when they undertake an action.

The Preferred Alternative is within Monterey County California and traverses the Monterey Peninsula from the City of Salinas to the City of Seaside. The Preferred Alternative location spans from approximately 1.3 miles east of the Pacific Ocean to eight miles inland. The M1W reviewed the California Natural Diversity Database (CNDDDB 2015), the USFWS Database, and the California Native Plant Society database (CNPS 2015). In addition, the USFWS's Information for Planning and Conservation (IPaC) site was searched for federally listed species as proposed, candidate, threatened and/or endangered species and their designated critical habitat with potential to occur on the PWM Project site (USFWS 2015).

The existing consultations with NMFS and USFWS under the Endangered Species Act are summarized below. USBR determined that the PWM Project would not adversely affect federally-listed endangered or threatened species beyond the effects of the Proposed Action previously addressed by the completed Section 7 consultation process. MBNMS does not consider that the Proposed Action would adversely affect endangered or threatened species beyond the Section 7 consultation already conducted.

Informal Consultation with NMFS. The PWM Project required informal consultation with NMFS. On November 19, 2015, Joel Casagrande of NMFS confirmed that the only NMFS regulated species potentially affected by the PWM Project is the S-CCC steelhead Distinct Population Segment (DPS). Gabilan Creek (Reclamation Ditch/Tembladero Slough) and the Salinas River are designated critical habitat for the S-CCC steelhead DPS.

On November 18, 2016, the USEPA requested concurrence that the PWM Project may affect but is not likely to adversely affect the South-Central California Coast Steelhead Distinct Population Segment (S-CCC; *Oncorhynchus mykiss*) or its designated critical habitat in the Reclamation Ditch and the Salinas River watersheds. NMFS initially expressed concern about the localized impacts to surface waters (flows and levels) from operation of the diversions, and water quality impacts from construction and operation of the diversion facilities within downstream waters as well as permanent impacts to the bed and banks of the Reclamation Ditch.

During the Section 7 consultation with NMFS, and in conjunction with the State Water Resources Control Board's water rights process, additional measures were adopted as conditions to the PWM Project's water right permits for the Reclamation Ditch and Tembladero Slough that reduced the potential impacts on the operations of the PWM Project. In addition, NMFS provided guidance on the design of the intake structures that would reduce impacts to the S-CCC steelhead. Based on these conditions, NMFS concurred with the USEPA on December 5, 2016, that the PWM Project is not likely to affect S-CCC steelhead or its designated critical habitat.

On December 20, 2018, NMFS responded via email to MBNMS and indicated that they agreed with the USEPA in their determination that re-initiation of consultation was not needed for this EA for the reasons described by USEPA (Appendix O).

Formal Consultation with USFWS. The PWM Project required formal consultation between the USEPA and USFWS. On May 13, 2016, the USEPA sent a letter to the USFWS requesting formal consultation on USEPA's determination that the PWM Project may affect and is likely to adversely affect the federally threatened Monterey spineflower (*Chorizanthe pungens* var. *pungens*), federally and state threatened California red legged frog (*Rana draytonii*) and the federally endangered Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*). On June 23, 2016 and August 16, 2016, USFWS received results of botanical surveys conducted at the Injection Well Facilities site indicating that adverse effects to Monterey gilia are likely.

On December 20, 2016, the USFWS issued a Biological Opinion. The Biological Opinion acknowledged the substantial series of avoidance and minimization measures to limit the PWM Project's adverse effects on natural resources. These include best management practice that shall be implemented during all identified phases of construction including but not limited to: an Employee Education Program, construction monitoring, protective fencing of trees and vegetation, restoration of disturbed areas, erosion control techniques, on-site spill plan and containment measures, and refueling or maintenance of vehicles within a specified staging area. Other avoidance and minimization measures include the implementation of construction-phase monitoring, the preparation and implementation of a rare plant restoration plan, the preparation of a frac-out plan, limiting construction in potential California red-legged frog habitat between April 1 and November 1 (unless otherwise approved by USFWS), and the implementation of the Declining Amphibian Populations Task Force's Fieldwork Code of Practice.

In addition to these avoidance and minimization measures, the Biological Opinion requires the implementation of terms and conditions to minimize the impacts of the incidental take of the California red-legged frog. These terms and conditions include: (1) only qualified biologists, approved by the USFWS, may conduct the proposed monitoring and minimization measures for the California red-legged frog; and (2) a USFWS-approved biologist must determine an appropriate relocation site(s) for any California red-legged frogs that must be removed from construction areas, which is submitted to the USFWS for approval at least 10 days in advance of the initiation of activities.

The Biological Opinion concludes that the PWM Project, as proposed, is not likely to jeopardize the continued existence of the California red-legged frog, the Monterey spineflower, or the Monterey gilia. However, there is potential for incidental take of the California red-legged frog. The incidental take statement in the Biological Opinion specifies that if three (3) California red-legged frogs are found dead or injured, or if ten (10) are captured and relocated, USEPA must make immediate contact with the USFWS office to reinitiate formal consultation. The incidental take statement does not apply to listed plant species; however, limited protection of listed plants is provided. The Biological Opinion assumes that Monterey spineflower and Monterey gilia occurrences within designated development parcels at the Fort Ord base would be lost, and determined that such loss would not jeopardize either species.

Additionally, the USFWS letter noted that due to modifications of the PWM Project scope there would be no effect on of the endangered tidewater goby (*Eucyclogobius newberryi*) and its critical habitat.

On December 19, 2018, USFWS responded via email to MBNMS and indicated that they agreed with the USEPA in their determination that re-initiation of consultation was not needed for this EA for the reasons described by USEPA (Appendix O).

4.2 Magnuson Stevens Fishery Conservation & Management Act

In 1976, Congress passed the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801, et seq.). The MSA fosters long-term biological and economic sustainability of the nation's marine fisheries out to 200 nautical miles from shore. Key objectives of the MSA are to prevent overfishing, rebuild overfished stocks, increase long-term economic and social benefits, and ensure a safe and sustainable supply of seafood. The MSA promotes domestic commercial and recreational fishing under sound conservation and management principles and provides for the preparation and implementation, in accordance with national standards, of fishery management plans (FMPs).

Essential fish habitat (EFH [50 CFR 600.10]) describes all waters and substrate necessary for fish for spawning, breeding, feeding, or growth to maturity. The consultation requirements of Section 305(b) of the MSA (16 U.S.C. 1855(b)) provide that:

- Federal agencies must consult with the Secretary on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- the Secretary shall provide recommendations (which may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH) to conserve EFH to Federal or state agencies for activities that would adversely affect EFH; and
- the Federal action agency must provide a detailed response in writing to the National Marine Fisheries Service (NMFS) and to any Council commenting under §305(b) (3) of the MSA within 30 days after receiving an EFH Conservation Recommendation.

“Adverse effect” is defined in the regulations (50 CFR 600.910) as: “any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.”

The trigger for EFH consultation is a Federal action agency's determination that an action or proposed action, funded, authorized or undertaken by that agency may adversely affect EFH. If a Federal agency makes such a determination, then EFH consultation is required. If a Federal action agency determines that an action does not meet the may adversely affect EFH test (i.e., the action would not adversely affect EFH), no consultation is required.

The Department of Commerce's guidelines for implementing the EFH coordination and consultation provisions of the MSA are at 50 CFR 600.905 - 930. These guidelines provide definitions and procedures for satisfying the EFH consultation requirements, that include the use of existing environmental review processes, General Concurrences, programmatic consultations or individual EFH consultations (i.e., abbreviated, expanded) when an existing process is not

available. The EFH guidelines also address coordination with the Fishery Management Councils (Councils), NOAA Fisheries EFH Conservation Recommendations to Federal and state agencies, and Council comments and recommendations to Federal and state agencies.

On November 18, 2016, the USEPA sent a letter to the NMFS providing notification of USEPA's determination that the PWM Project would not adversely affect Essential Fish Habitat (EFH) under MSA for starry flounder (*Platichthys stellatus*). On November 19, 2016, NMFS responded concurring with the USEPA that the PWM Project would not adversely affect EFH, and instead would result in reduced discharge of pollutants to EFH.

As detailed in Section VII, of the USBR Environmental Analysis, the proposed Project modifications would not result in any new significant environmental effects that cannot be mitigated with existing, previously identified mitigation measures in the PWM EIR and the RUWAP EIR. In addition, the Expanded Capacity AWT Facility and shared Product Water Conveyance Facilities as fully described in Section IV, Proposed PWM Project Modifications would not substantially increase the severity of any significant environmental effects identified in the PWM EIR and the RUWAP EIR. The potential environmental effects associated with the modifications to the project would not result in any new environmental effects that were not previously disclosed in connection with the construction of the PWM Project and the RUWAP. The proposed Project modifications would not increase the extent of ground - disturbance and would not increase the overall length of pipeline. The proposed Project modifications would result in changes to the amount and quality of reverse osmosis (RO) concentrate, but these impacts would be consistent with the type, extent, and scope of impacts already analyzed with respect to the operation of the PWM Project. No new adverse environmental effects would occur in connection with the Expanded Capacity AWP and shared Product Water Conveyance Facilities.

No new information has been identified or presented to M1W showing that the Expanded Capacity AWP and shared Product Water Conveyance Facilities would result in: 1) significant environmental effects not identified in the PWM EIR and RUWAP EIR, or 2) an increase in the severity of significant impacts identified in the PWM EIR and RUWAP EIR. Further, no new information has been identified or presented to M1W showing that mitigation measures or alternatives which were previously determined not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, or mitigation measures or alternatives that are considerably different from those identified in the PWM EIR would be feasible and would substantially reduce one or more significant effects of the project.

4.3 National Historic Preservation Act/Native American Consultation

Section 106 of the National Historic Preservation Act of 1966 (NHPA) (54 U.S.C. § 300101 et. seq.) requires federal agencies to take into account the effects of their undertakings on historic

properties in accordance with regulations issued by the Advisory Council on Historic Preservation (ACHP) at 36 C.F.R. Part 800.

The regulations require that federal agencies consult with states, tribes, and other interested parties (consulting parties) when making their effect determinations. The regulations establish four basic steps in the NHPA 106 process: determine if the undertaking is the type of activity that could affect historic properties, identify historic properties in the area of potential effects, assess potential adverse effects, and resolve adverse effects.

On March 3, 2016, the State Water Board sent a letter to SHPO with a determination of “No Historic Properties Affected” by the PWM Project. On April 19, 2016, the SHPO responded concurring with a determination of “No Historic Properties Affected” for the PWM Project. See USBR EA Appendix B. Because this EA is limited to the discharge and potential marine impacts, it was determined that this is not the type of undertaking that is likely to adversely affect historic properties so no additional consultation was initiated.

Indian Trust Assets (ITAs) are legal interests in property or rights held in trust by the United States for federally recognized Indian Tribes or individual Indians. Indian reservations, Rancherias, and Public Domain Allotments are common ITAs in California. The closest ITA to the PWM Project is the 50H CA12519 and is 21.68 miles northeast. The PWM Project does not have a potential to affect ITAs.

Executive Order 13007 (May 24, 1996) requires that federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and avoids adversely affecting the physical integrity of such sacred sites. The PWM Project traverses less than a mile of roadway right-of-way under General Jim Moore Boulevard on U.S. Department of the Army lands. There are no Indian sacred sites in the area, and the PWM Project construction and operation would not affect access to any sacred sites.

Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments” requires federal agencies to establish procedures for meaningful consultation and coordination with tribal officials in the development of federal policies that have tribal implications. NOAA implements EO 13175 through the “NOAA 13175 Policy.” Pursuant to the Policy, NOAA offers affected federally-recognized tribes government-to-government consultation at the earliest practicable time it can reasonably anticipate that a proposed policy or initiative may have tribal implications. “Proposed policies” that may have tribal implications include regulations, legislative comments, proposed legislation and other policy statements or actions. The Policy provides guidance and procedures designed to ensure that NOAA effectively and consistently conducts required government-to-government consultations with federally-recognized tribes. For the reasons stated above, MBNMS does not expect that the authorization of the Preferred Alternative would have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal government and Tribes, or on the distribution of power and

responsibilities between the Federal government and Tribes. As such, MBNMS does not reasonably anticipate that authorization of the Preferred Alternative would have tribal implications.

4.4 Environmental Justice

Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. There is no disproportionately high and adverse human health or environmental effect on minority populations and low-income populations that would occur from the proposed activities. The Preferred Alternative provides additional water and recycled water that would be available to a wide range of the population with no disproportionate impacts on one population. The potential for human health adverse impacts have been fully evaluated in the PWM EIR, and the Title 22 Engineering Report, and the project was found to have no significant adverse health impacts. The Preferred Alternative considered in this EA is limited to authorization of the NPDES permit for the AWPf, and MBNMS does not anticipate any disproportionately high and adverse human health or environmental effects on minority populations and low-income populations from authorizing the amended NPDES permit for the AWPf effluent discharge. The impacts resulting from the Preferred Alternative would be limited to marine water quality and marine biological resources.

4.5 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. 1361 et seq.), as amended, prohibits, with certain exceptions, the “take” of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. The MMPA defines “take” as: “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal.” 16 U.S.C. § 1362. Harassment means any act of pursuit, torment, or annoyance that has the *potential to injure* a marine mammal or marine mammal stock in the wild (Level A harassment); or that has the *potential to disturb* a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering, but does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B harassment). 16 U.S.C. § 1362; <http://www.nmfs.noaa.gov/pr/dontfeedorharass.htm>.

The preferred project is not likely to result in the take of any marine mammal protected under the Marine Mammal Protection Act. While it is recognized that there may be marine mammals in the project area which include California sea lions, Harbor seals, southern sea otters, humpback whales and possibly other animals; MBNMS does not expect that the effluent discharge would lead to take of any of these marine mammals for the following reasons. This EA considers only operational discharges from M1W and its effects on water quality and marine biology. Trussell Technologies conducted an analysis that estimated a worst-case water quality

under numerous different operational scenarios for the wastewater that would be discharged through the ocean outfall and compared that discharge to the Ocean Plan objectives to determine whether there would be a significant effect on marine and ocean water quality. The Ocean Plan objectives are established, in part, for the protection of marine aquatic life. MBNMS has reviewed these results, which show that the Preferred Alternative would not result in a significant effect on ocean water quality because the wastewater discharged through M1W's ocean outfall, including the Preferred Alternative's reverse osmosis concentrate, would consistently meet the water quality objectives of the Ocean Plan. In addition, MBNMS has reviewed the findings in the PWM EIR, as well as the consultations with NMFS and FWS under the Endangered Species Act and the Magnuson-Stevens Act, which did not identify potential adverse effects on threatened or endangered marine species, marine mammals, marine critical habitat, or essential fish habitat.

4.6 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA, 16 U.S.C. § 1451) was enacted in 1972 to encourage coastal states, Great Lake states, and U.S. Territories and Commonwealths (collectively referred to as "coastal states" or "states") to preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone. The CZMA is a voluntary program for states; currently, thirty-four coastal states have a federally approved coastal management program except Alaska, which voluntarily withdrew from the program in 2011. Section 307 of the CZMA is known as the "federal consistency" provision.

The federal consistency provision requires federal actions (inside or outside a state's coastal zone) that affect any land or water use or natural resource of a state's coastal zone, to be consistent with the enforceable policies of the state coastal management program (CMP). The term "effect on any coastal use or resource" means any reasonably foreseeable effect on any coastal use or resource resulting from the activity, including direct and indirect (cumulative and secondary) effects. The federal consistency regulations at 15 C.F.R. part 930 set forth detailed timeframes and procedures that must be followed carefully.

MBNMS has sought technical assistance from the California Coastal Commission (CCC) to determine whether the Preferred Alternative requires a Coastal Zone Management Act (CZMA) consistency review. MBNMS, in informal consultation with CCC staff (pers. comm. Mark Delaplaine 2/1/19), determined that a consistency review is not required for this RWQCB issued NPDES permit and the proposed project would not lead to reasonably foreseeable effects on coastal uses or resources.

5.0 REFERENCES

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- Trussell Technologies, Inc., September 2018. *Effect of the Pure Water Monterey Groundwater Replenishment Project on Nitrogen Loading to the Bay*. Available at: Appendix P.
- U.S. Army Corps of Engineers. January 18, 2017. *Clean Water Section 404 Authorization to Fill Waters of the U.S. from the U.S. Army Corps of Engineers*. Available at: Appendix G.
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- U.S. Fish and Wildlife Service. December 20, 2016. *Biological Opinion for Pure Water Monterey Groundwater Replenishment Project, Monterey County, California*. Available at: Appendix C.

6.0 LIST OF PERSON AND AGENCIES CONSULTED

Dr. Peter von Langen, Central Coast Regional Water Quality Control Board

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Tessa Lenz, State Water Resources Control Board – Division of Financial Assistance

Public Comment on Draft Order and Response:

The RWQCB's public review Draft Order R3-2018-00217 that proposes to reissue the permit was issued on June 18, 2018 and public comments were accepted through July 20, 2018. One comment letter was received from Otter Project. The comment letter questioned the impacts of the issuance of the permit on harmful algal blooms (HABs) in the Monterey Bay and requested that the RWQCB establish a time schedule order for actions to reduce the nitrogen discharges. In response, the RWQCB has engaged with the local research community regarding contributions to HABs from various climate, oceanographic, and water quality changes and inputs. The research community has indicated their support of the Preferred Alternative, in part because the project would result in a net load reduction of nitrogen-containing substances, as detailed in a technical memorandum prepared by Trussell Technologies, dated September 2018 and a presentation by Dr. Mine Berg of Applied Marine Science. In addition, research by Dr. Raphael Kudela and Dr. Clarissa Anderson have demonstrated that currently there is a lack of geographic and timing correlation between formation of harmful algal blooms in Monterey Bay and wastewater discharges from M1W.

7.0 REPORT PREPARERS

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