CENTRAL COAST OF CALIFORNIA

MONTEREY ONE WATER
A public utility providing wastewater and water reuse services in northern Monterey County

Monterey One Water
Providing Cooperative Water Solutions
Formed in 1972 in response to the Federal Clean Water Act

265,000 Community Members + 7,000 business in the service area

17 MILLION Gallons, on average, of wastewater processed each day

Monterey One Water
Providing Cooperative Water Solutions

29.6 MGD Wastewater Treatment Facility and Non-Potable Reuse Facility

5 MGD Advanced Water Purification Facility

90 EMPLOYEES

$82 MILLION Operating Budget
MUNICIPAL WASTEWATER
Inside water usage from the residents and businesses of our 10 member cities/districts

DRAINAGE WATER FROM CROP IRRIGATION
Excess water from the irrigation process which drains into channels

INDUSTRIAL PROCESSING WATER FROM FOOD PACKAGING
Water used to wash packaged produce, e.g. bagged salads, pre-washed veggies

URBAN DRY AND WET WEATHER RUNOFF
Outside water usage that drains into a city's stormwater pipe system

4 SOURCE WATERS combine to form influent into M1W’s Regional Treatment Plant
PRIMARY/SECONDARY TREATMENT
THE FORK IN THE ROAD

Regulated Ocean Discharge
Predominantly Wintertime

Non-Potable Reuse
Agriculture Irrigation

Indirect Potable Reuse
Groundwater Replenishment
**OCEAN DISCHARGE**

**Distance:** Regional Treatment Plant to Coastline + 2 miles into the Monterey Bay

**Outfall Pipe:** 60 inch diameter; 100 feet below surface of the water; last 1,000 feet include discharge ports

**Water Quality:** Secondary effluent; meets California Ocean Plan
NON-POTABLE REUSE

CASTROVILLE SEAWATER INTRUSION PROJECT

Challenge: Seawater intrusion/groundwater quality
Solution: Recycled water for food crop irrigation
Production Start: April 1998
Facility Size: 29.6 million gallons per day
Influent: Secondary effluent
Treatment: Tertiary — (1) flocculation, (2) multi-media filters, (3) chlorine disinfection
Serves: 12,000 acres of fertile farmland
Annual Production: 12,300 acre feet (average)
NON-POTABLE REUSE
CASTROVILLE SEAWATER INTRUSION PROJECT

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Providing Cooperative Water Solutions

LEGEND
- Interceptor Pipeline
- Ocean Outfall Pipeline
- Pump Station

Farmlands receiving recycled water

EST. 1998
Challenge: State and court-mandated reductions to surface water and groundwater due to habitat degradation and limited natural replenishment (respectively)

Solution: Recycled water for groundwater replenishment

Production Start: February 2020

Facility Size: 5 million gallons per day

Influent: Secondary effluent

Treatment: Advanced purification — (1) ozone pretreatment, (2) membrane filtration, (3) reverse osmosis, and (4) advanced oxidation

Serves: Private water supplier’s Monterey District of 104,000 residents, almost 5,000 businesses, and more than 9 million visitors a year

Annual Production: 3,500 acre feet for groundwater replenishment

POTABLE REUSE
WHY DO WE NEED PURE WATER MONTEREY?

**Historic Sources**

- **Groundwater:** Seaside Basin
  - 25% of supply

- **Surface Water:** Carmel River
  - 75% of supply

**New Portfolio**

- **Groundwater:** Seaside Basin
  - 774 AFY (9%)

- **Surface Water:** Carmel River
  - 3,376 AFY (37%)

- **Desalination:** City of Sand City
  - 94 AFY (1%)

- **Aquifer Storage & Recovery**
  - 1,300 AFY (14%)

- **Potable Reuse:** Pure Water Monterey
  - Base: 3,500 AFY

*Additional desalination facility also under consideration by private water purveyor*
PROJECT TIMELINE

2013

PILOT STUDY
Pilot study conducted to determine water quality parameters of source water and efficacy of purification process

2014

PROJECT APPROVAL
Approval of project concept granted by CA Department of Public Health*
Planning, design, and environmental processes begin, including formation of an Independent Advisory Panel

*Project approvals now granted by the State’s Division of Drinking Water

2015

ENVIRONMENTAL CERTIFICATION
Final Environmental Impact Report certified by Board of Directors

BIDDING & CONSTRUCTION
Project components go out to bid and construction begins
Groundbreaking ceremony is held with internal and external stakeholders to celebrate this exciting milestone

2017

PROJECT COMPLETION
Inspection and operational approval from the State’s Division of Drinking Water received in February 2020
Operations commence for groundwater replenishment

2020

PROJECT COMPLETION
Inspection and operational approval from the State’s Division of Drinking Water received in February 2020
Operations commence for groundwater replenishment
20 MILLION DIGITAL DATA POINTS PER YEAR

- Real-time, online monitoring throughout the purification process

15,905 LAB-VERIFIED DATA POINTS PER YEAR

- Extensive sampling and testing of product water prior to injection

- Continued sampling of Seaside Groundwater Basin to monitor improvements in quality
Primary and Secondary Wastewater Treatment

1. Wastewater
2. Industrial Processing Water
3. Crop Drainage Water
4. Urban Stormwater Runoff

Tertiary Treatment

• Capacity: 29.6 million gallons per day

Secondary Effluent

Advanced Water Purification

• Capacity: 5 million gallons per day

Concentrate from Reverse Osmosis Treatment Step

• ~20% rejection rate

OCEAN DISCHARGE

Groundwater Replenishment

• After extraction, Cal Am delivers the water to the residents and businesses in its Monterey Bay service district
• Indoor water usage then becomes wastewater and starts the process again

Food Crop Irrigation

Castroville Seawater Intrusion Project

• On some properties, excess irrigation water drains into nearby ditches where it becomes source water and starts the process again

Source Waters

1. Wastewater
2. Industrial Processing Water
3. Crop Drainage Water
4. Urban Stormwater Runoff

Conveyance Pipeline

Injection Wells

Cal Am Extraction Wells

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Providing Cooperative Water Solutions

Pure Water Monterey
A Groundwater Replenishment Project

ONE WATER
MONTEREY MICROGRID PROJECT
ENERGY RELIABILITY • INTER-AGENCY COLLABORATION • UTILITY SUSTAINABILITY

MONTEREY ONE WATER

LANDFILL GAS
ORGANICS TO ENERGY (O2E)
• Anaerobic Digestion
• New O2E Technologies
SOLAR
BATTERY STORAGE
WIND

Increased Supply
Current Supply
New Supply

Increased Supply
Increased Supply
New Supply
New Supply
New Supply

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