

# Morro Bay Water Reclamation Facility



## City of Morro Bay Water Reclamation Facility Project Overview

**David Buckingham**  
City Manager  
City of Morro Bay  
dbuckingham@morrobayca.gov  
703-505-5503

**Jamie Irons**  
Mayor  
City of Morro Bay  
jirons@morrobayca.gov  
805-550-6595

# Project Summary and Status



- **Description:** The Morro Bay Water Reclamation Facility replaces a 62-year old beachfront wastewater treatment plant that dumps 1M/gal of water a day into the ocean under an expiring 301H waiver. The new advanced water treatment reclamation facility two miles inland will allow the city to recapture and recycle 80% of its waste water, injecting the treated recaptured water into a local aquifer for reuse and freeing up 1300 af/yr of State Water Project water annually for other water-limited communities.
- **Authority:** The City of Morro Bay, CA
- **Cost:** \$167 Million
- **Status:**
  - Facility Master Plan – complete
  - Master Reclamation Plan – complete
  - Funding – Required: infrastructure loan and grants
- **Project Benefits:**
  - Community achieves water independence
  - Returns 1300 af/yr to water-dependent communities
  - Reduces local purchasing cost for water ~50%

### Existing WWTP

- WWTP is 62-Years Old
- Permit - expiring 301H waiver
- Dumps 1M gal/day of water into ocean
- Within 100-yr floodplain
- Situated in tsunami inundation zone
- Visible from PCH
- Contributes to upstream flooding
- Adjacent to:
  - High School
  - City Park
  - Coastal Campground
  - City Beach

### New Water Reclamation Facility

- Facility Master Plan Approved Dec 2016
- Planned SBR/MBR w/ Advanced Treatment
  - Microfiltration
  - Reverse Osmosis
  - UV Disinfection
- ~800 af/year of reusable water
- Substantial solar energy opportunities
- Water and wastewater collection and treatment systems integrated physically and operationally

# Presentation Overview



- Introduction
- Project Goals
- Existing Wastewater Treatment Plant (WWTP)
- Managed Retreat Overview
- New Water Reclamation Facility
- Reclamation Overview
- Water Independence
- Timeline and Funding
- Summary

# A One-Water Future



The citizens of Morro Bay are taking measurable financial risk to affect managed retreat of a 62-year old Wastewater Treatment Plant from the beachfront, recover the water resource and reuse to achieve water independence.

- Leads managed retreat due to the effects of *climate-change*
- Mitigates environmental risk – coastal *flood and tsunami protection*
- Achieves *complete IPR reclamation* of ~800af/year of effluent
- Employs *nitrate flushing* to clean up a coastal freshwater aquifer
- Mitigates *seawater intrusion* into the aquifer
- Provides an ideal site for *solar power* generation
- Supports long term *coastal stream enhancement*
- Relieves pressure on *state water* supplies – ~1300af/year
- Creates a 10+ acre *urban park*

# Shovel Ready in Nov 2017



- **Political will to execute – 5 of 5 Council committed to this project**
- **Received SWB Recycled Water Feasibility Study Grant (\$75K)**
- **Facility Master Plan, biological, & cultural studies completed for site**
- **EIR scoped & in progress – to be complete in Nov 2017**
- **Program management team under contract thru project completion**
- **Demonstrated city success meeting grant requirements**
- **Approved for State Water Board planning loan (\$10M)**
- **Coastal Commission staff fully briefed and supportive**
- **Rate increase in place for \$70M project, 2nd increase in Jun 2017**

# Existing WWTP

- WWTP is 62-Years Old
- Permit - expiring 301H waiver
- Dumps 1M gal/day of water into ocean
- Within 100-yr floodplain
- Situated in tsunami inundation zone
- Visible from designated Scenic Highway
- Contributes to upstream flooding
- Adjacent to:
  - High School
  - City Park
  - Coastal Campground
  - City Beach



# Managed Retreat Overview

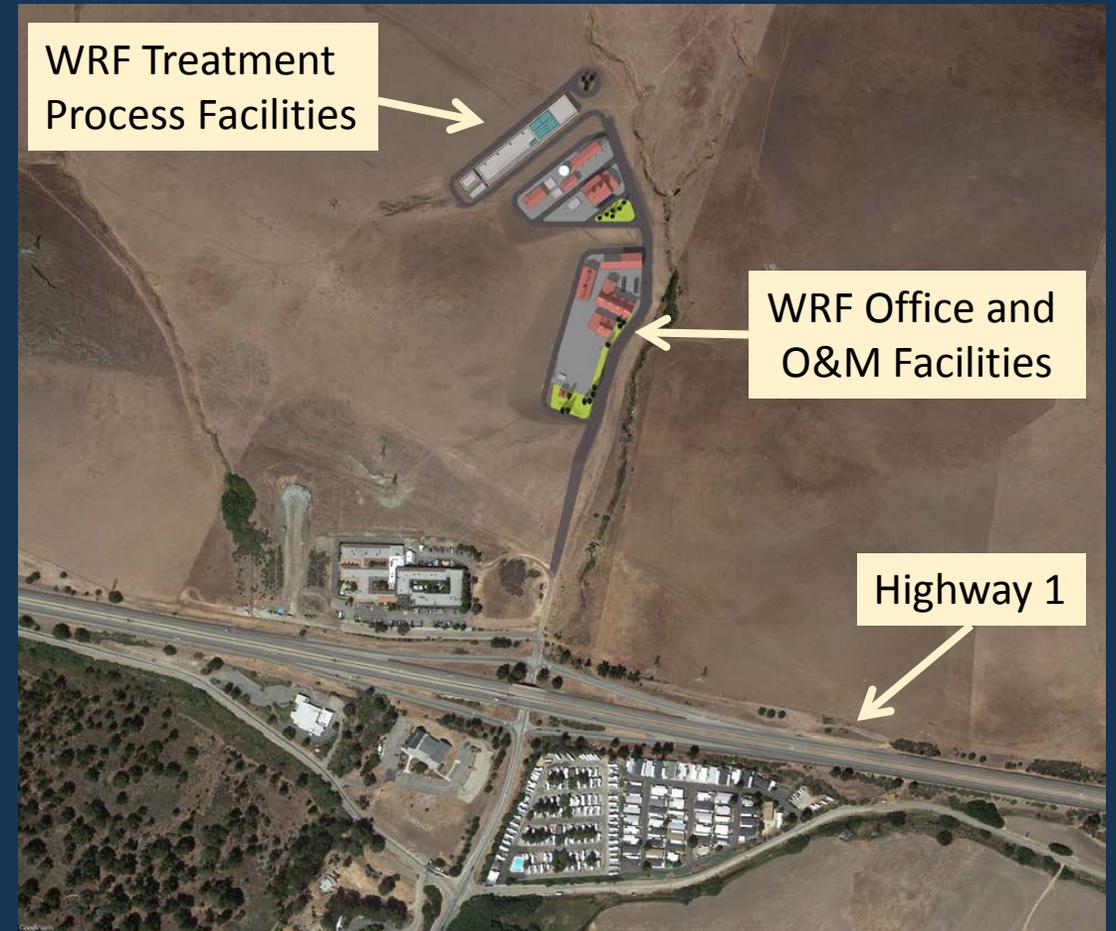
- Conducting managed retreat from coast
- Mitigating climate change risk
- New site is 2.5 miles from the beach
- 30-acre site under contract
- 2000 feet from nearest residents
- Ranchland location preserves view shed
- \$167M project - with 10K residents



# New Water Reclamation Facility



- Facility Master Plan Approved Dec 2016
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  - Microfiltration
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# Reclamation Overview



- Hydrogeology studies of Morro Valley Groundwater Basin complete
- Identified sub-basin within city limits
- Existing city wells located in this basin
- No other users in the sub-basin
- Aquifer will accept 800 af/year via four groundwater injection wells
- Injection will mitigate existing reliability and high-nitrate concerns with the aquifer
- Modeling confirms extraction of 1200 af/year with no seawater intrusion



# Water Independence



- City's current H2O requirement = ~1150 af/year
- Currently contracted for State Water – debt service paid off in ~2022
- WRF project to be complete in 2021
- City will be water independent
  - Reclaimed Water + Existing right = 1200+ af/year
  - Desal plant in place to remove nitrates
- WRF project to return 1300 af/year of state water allocation back to state (through agreements with other agencies)



# Timing and Funding



Timeline – 5-year project complete in June 2021

- 2017 – EIR and Master Reclamation Plan
- 2018 – Design Build Construction Begins

## Funding

- Planning for federal and/or state revolving fund infrastructure loans
- Loan to be funded by sewer rate increases
- Require \$43M in grant funds for community affordability of water reuse.



# Summary

## A Huge Project for a Small Community

- Addressing expiring 301H discharge waiver
- Responding seriously to the effects of *climate change*
- Mitigating environmental risks from *flooding and tsunami*
- *Reusing 800af/year of water* currently dumped into the ocean
- Mitigating *nitrate contamination* of existing aquifer
- Protecting existing aquifer from *seawater intrusion*
- Providing opportunities for *solar power generation*
- Returning ~1300af/year of *State Water for another user*
- Creating a 10+ acre urban park



# Needs and Questions



## Federal Funding Support Needs –

- Infrastructure loan(s) for ~114M
- Water reuse grants for ~43M\*

### \*Notes:

- the City is prepared to raise sewer rates ~150% to fund an infrastructure loan for a new wastewater treatment facility off the beach.
- The water recycling (indirect potable reuse through groundwater injection) facet of the project is a high burden for a small and measurably economically disadvantaged population to pay through rate increases.
- \$43M water reuse grants are highly important to achieving the project's full water recycling potential.
- City is drawing on existing \$10M CA SRF planning loan.



# Current Status

## Council weighing options –

- Significant community concern with large rate increase
- Late April Council directed a pause
  - Likely delay recycling phase until some time in future . . .
  - Consider least expensive possible secondary treatment at SBB site (Ox Ditch or SBR (-))
  - Consider tertiary treatment at SBB site (MBR – “reclamation ready”)



# Points of Contact



City of Morro Bay

<b>David Buckingham</b> , City Manager	<a href="mailto:dbuckingham@morrobayca.gov">dbuckingham@morrobayca.gov</a>	703-505-5503
<b>Mike Nunley</b> , Program Manager	<a href="mailto:mnunley@morrobayca.gov">mnunley@morrobayca.gov</a>	805-574-3202
<b>Rob Livick</b> , Public Works Director	<a href="mailto:rlivick@morrobayca.gov">rlivick@morrobayca.gov</a>	805-674-3393

