

# AAEES Annual West Coast Event Climate Change: Water and Wastewater Adaptation and Resiliency

October 17, 2019

## City of Los Angeles Water Recycling Program

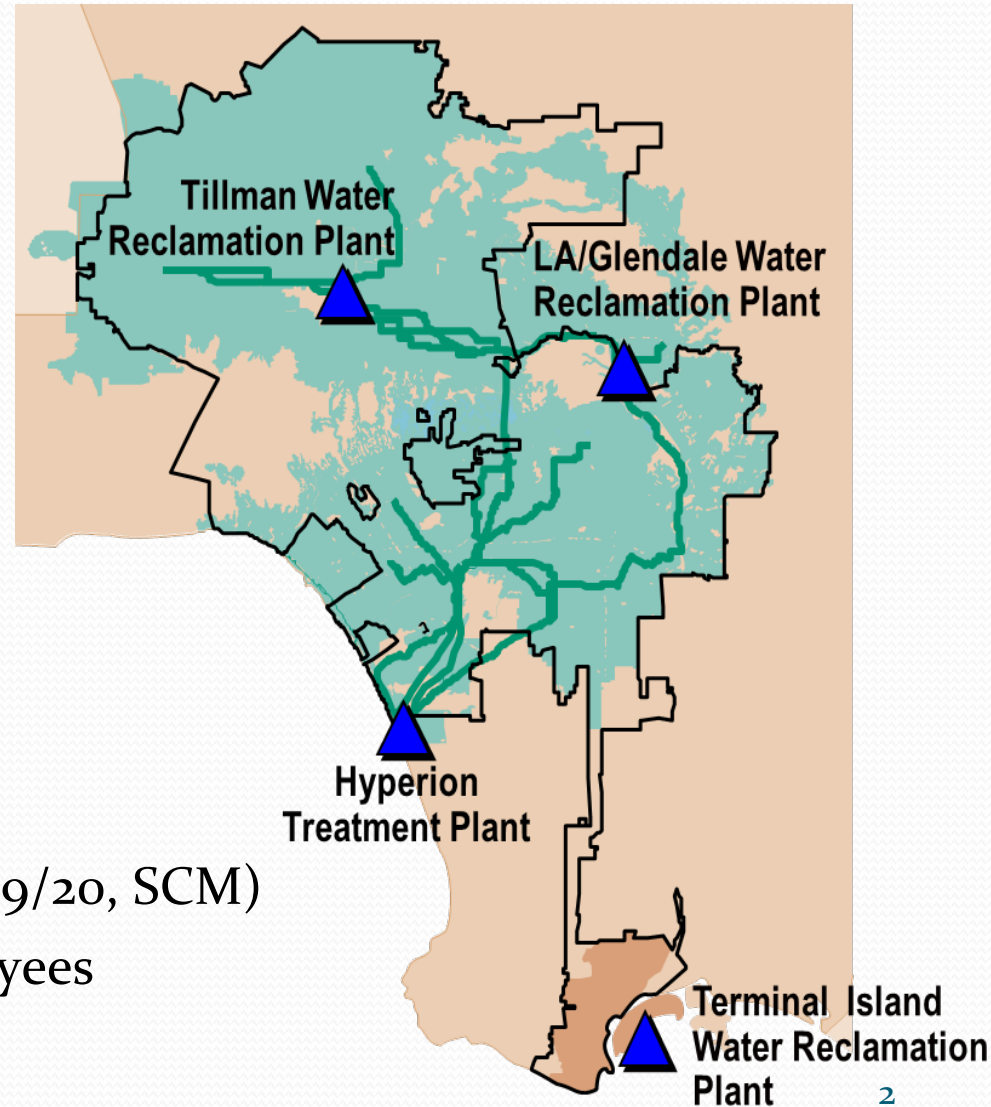
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LA Sanitation & Environment



# Clean Water Program by numbers

- 4.7 million people served
- 600 square miles over two service areas
- 29 contract agencies
- Hyperion Service Area:
  - Tillman WRP
  - Los Angeles Glendale WRP
- Terminal Island Service Area
  - Terminal Island WRP
- 6,700 miles of sewer lines
- 47 pumping plants
- \$ 1.18 billion program budget (FY 19/20, SCM)
- 1,377 Clean Water Program employees



# Recycled Water Progress – Our History

1976

- Los Angeles Glendale WRP

1985

- Tillman WRP Phase I

1995

- Hyperion partners w West Basin MWD for RW

1991

- Tillman WRP Phase II

2002

- Terminal Island WRP Phase I AWPF

2017

- Terminal Island WRP Phase II AWPF

# Water Recycling to Date

WRP	Design capacity (mgd)	Average flow (mgd)	Recycled water (mgd)	Recycled water uses
Hyperion	450	266	68	In-plant water, West Basin, DWP
LA/Glendale	20	14	14	In-plant water, landscape irrigation, industrial use, LA River
Tillman	80	32	32	In-plant water, Japanese Garden, LA River, Balboa Wildlife Lakes
Terminal Island	30	12	2.3	In-plant water, Dominguez Gap Barrier
<b>Total</b>	<b>580</b>	<b>333</b>	<b>117</b>	<b>35% recycled and beneficially used</b>

FY18/19

The opportunity for expansion of RW lies Tillman and Hyperion

# 100% WATER RECYCLING PROGRAM



## DONALD C. TILLMAN WATER RECLAMATION PLANT

- 32 MGD
- 100% Recycled and Beneficially Used
- 10 MGD Ozone Demonstration Project to begin spreading water at Hansen Spreading Grounds in the San Fernando Valley of LA by 2019
- 17 MGD Full-Scale AWPf constructed by 2025

## LOS ANGELES-GLENDALE WATER RECLAMATION PLANT

- 14 MGD
- 100% Recycled and Beneficially Used



## TERMINAL ISLAND WATER RECLAMATION PLANT

- 12 MGD
- 100% of TIWRP inflow processed through AWPf



# LASAN: 100% recycled by 2035



Mayor Garcetti's press conference at Hyperion, February 21, 2019

## **Green New Deal targets**

- Source 70% of LA's water locally by 2035
- Recycle 100% of all wastewater for beneficial reuse by 2035

## **Green New Deal milestones and initiatives**

- Produce 1.5 mgd of recycled water at Hyperion for use at LAWA and others
- Recycle 17 - 25 mgd at Tillman WRP for groundwater recharge

# 100% HWRP Water Recycling Plan

## Current Efforts

- Advanced Water Purification Facility
  - Produce 1.5 mgd of advanced treated water for LAX and others
  - Expand potentially to 5 mgd
  - Demonstrate proof of concept
- Membrane Bioreactor Pilot Program
  - Test three different vendor types of MBRs
  - Obtain design data for conversion to 100% recycled water
  - Facilitate regulatory approval processes

# 100% HWRP Water Recycling Plan

## The Path Forward

- Project implementation is underway
- Data obtained from the MBR Pilot will be utilized to establish design parameters for conversion to 100% water recycling
- Data obtained from the MBR Pilot will be utilized as a starting point to obtain regulatory approval and permits from the SWRCB/DDW and RWQCB
- Implementation of this massive effort to retrofit Hyperion will require close coordination to allow for continued operation while under construction



# 100% HWRP Water Recycling Road Map

- Construct a 1.0-MGD MBR Pilot Facility by April 2021
- Construct a 1.5-MGD AWWPF (Proof of concept) by May 2022
- Finalize Feasibility Report by December 2022
- Finalize Environmental Impact Report by December 2022
- Final Independent Advisory Panel Report by January 2023
- Complete Design of AWWPF for 100% Water Recycling by 2024
- Complete Construction of AWWPF for 100% Water Recycling by 2034

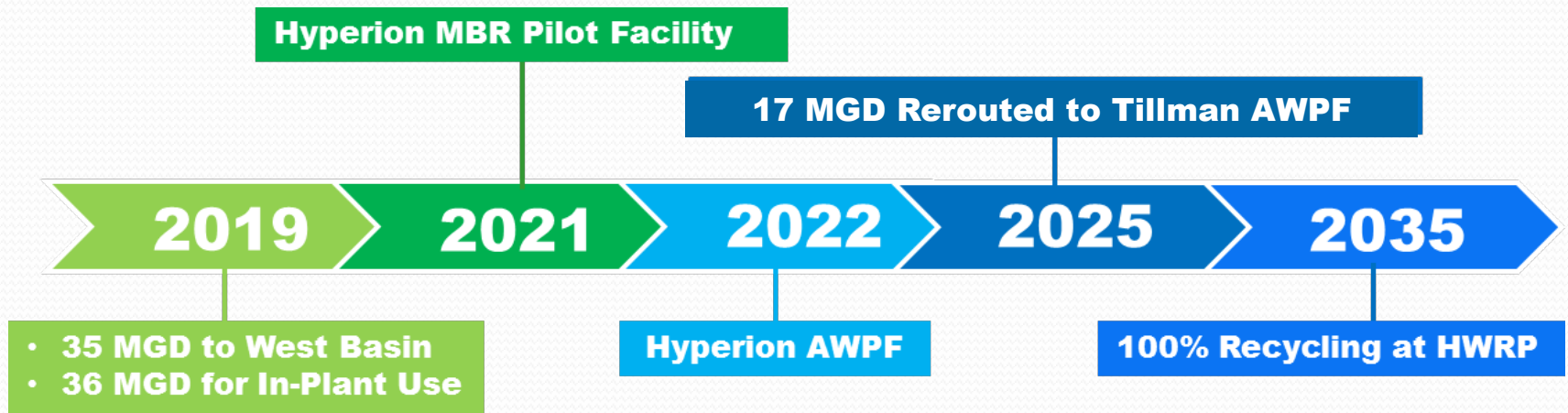
Produce 160 MGD of advanced-treated recycled water by 2035<sub>9</sub>

# 100% HWRP Water Recycling Road Map

- **MBR Pilot**
  - Construct a 1.0-MGD MBR Pilot Facility by April 2021
  - Finalize Feasibility Report by December 2022
  - Final Independent Advisory Panel Report by January 2023
- **AWPF Proof of Concept**
  - Construct a 1.5-MGD AWPF (Proof of concept) by May 2022
- **Ultimate AWPF**
  - Finalize Environmental Impact Report by December 2022
  - Complete Design of AWPF for 100% Water Recycling by 2024
  - Complete Construction of AWPF for 100% Water Recycling by 2034

Produce 160 MGD of advanced-treated recycled water by 2035

# Recycled Water Program at HWRP



1. Membrane bioreactors



2. Reverse osmosis



3. Advanced oxidation

# Balancing Policies and Priorities

## Los Angeles River

- Increase recycled water at DCT and LAG
- Maintain river flow in support of beneficial uses and ecosystems

## Santa Monica Bay

- Transform Hyperion to 100% recycled water
- Minimize impact of brine discharges

## Process Efficiency

- Address stricter water regulations that may require higher levels of treatment
- Improve energy efficiency of recycled water production and reduce carbon footprint



# Questions

# Recycled Water at DCTWRP

## Ozone Demonstration Project

- Spreading at Hansen Spreading Grounds
- 3.5 – 10 MGD
- 2020-2025

## Full-scale Advanced Water Purification Facility

- Spreading at Hansen Spreading Grounds
- Tertiary Influent - MF - RO - UVAOP
- 17-25 MGD
- Progressive DB Delivery
- Completion by 2025

