



## **FY2020 Water Audit and Water Loss Reduction Plan**

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June 16, 2021

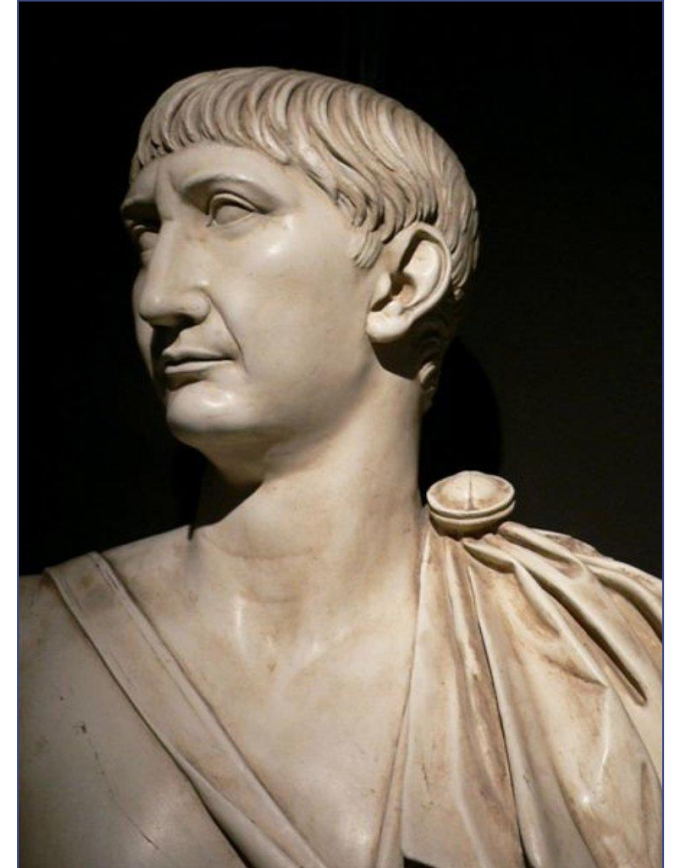
# Agenda

- Historical perspective
- Background
- Water loss defined
- FY2020 water audit summary
- Cost of water loss
- Historical water loss
- Water loss reduction strategies



# Historical Perspective

- Sextus Julius Frontinus (c. 40-103 a.d.)
  - Roman Civil Engineer
  - Wrote *De aquaeductu*
  - Maintained the extensive network of Roman aqueducts
  - Great concern with water loss and theft



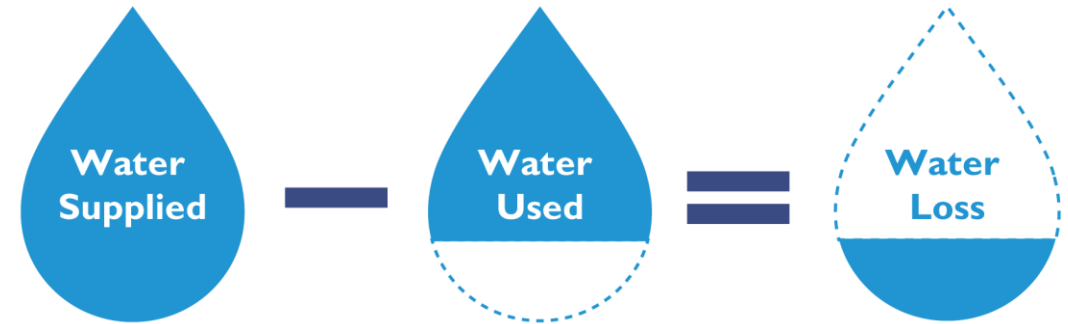
# Background

- Water audit
  - What?
  - Why?
  - When?
  - How?
- Identify water loss
  - Significance to WSSC Water
- Water loss reduction plan
  - Regulatory framework



# Water Loss Defined

- Water loss is the difference between the total amount of water supplied, and the amount of water used.
- American Water Works Association categorizes water loss into two categories:
  - Apparent Losses & Real Losses



# Water Loss Categories

- **Apparent Losses**

- Customer metering inaccuracies
- Theft and illegal connections
- Data handling errors



- **Real Losses**

- Transmission, distribution, and service main leakage



# FY2020 Water Audit Summary

<b>Water Supplied</b>	<b>59,527 MG</b>
<b>- Water Used</b>	<b>- 47,852 MG</b>
<b>= Total Losses</b>	<b>11,675 MG</b>

**80.4% of water  
supplied is used,  
while 19.6% is lost**

- **Estimated Apparent Losses** (metering inaccuracies, theft, data errors)
  - **2,775 MG** (4.6% of water supplied and 23.8% of losses)
- **Estimated Real Losses** (system leakage)
  - **8,901 MG** (15.0% of water supplied, 76.2% of losses)

# Cost of Water Loss

Apparent Loss Causes	Water Loss (MG)	Cost of Water Loss*
Unauthorized consumption	146 MG	\$0.8 M
Customer metering inaccuracies	2,514 MG	\$15.0 M
Data handling errors	114 MG	\$ 0.7 M
<b>Total Apparent Losses</b>	<b>2,775 MG</b>	<b>\$16.5 M</b>

Losses	Water Loss (MG)	Total Cost of Water Loss*
Total Apparent Losses	2,775 MG	\$16.5 M
Total Real Losses	8,901 MG	\$1.9 M
<b>Total</b>	<b>11,675 MG</b>	<b>\$ 18.4 M</b>

*\*Cost of Apparent Losses Based on Retail Cost,  
Cost of Real Losses Based on Production Cost*



# Historical Water Loss

Fiscal Year	Percentage Water Loss
FY2012	17.4%
FY2013	17.1%
FY2014	15.7%
FY2015	17.9%
FY2016	20.9%
FY2017	15.7%
FY2018	17.6%
FY2019	18.2%
FY2020	19.6%

# Water Loss Reduction Strategies

## Current Activities

- Meter accuracy testing
- Detection of unauthorized consumption
- Infrastructure replacement (pipelines and meters)
- Leak detection
- System pressure management

# Water Loss Reduction Strategies

## New and Innovative Activities

- Advanced Metering Infrastructure (AMI) – *Indefinitely Deferred*
- Implementing satellite-based leak management
  - Satellite scan 1,000 miles of pipe four times
  - Follow up with field leak detection
  - Cost-benefit evaluation
- Improve upon water loss quantification
  - New General Permit requirements
  - Potable water discharges
- Pilot Transient Pressure Monitoring Program

# Questions?

