



CALIFORNIA DEPARTMENT OF
WATER RESOURCES



American Water Works Association
California-Nevada Section



NEW WAVE OF EFFICIENT FIXTURES AND DEVICES

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JOE FAZIO, FLUME

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CALIFORNIA





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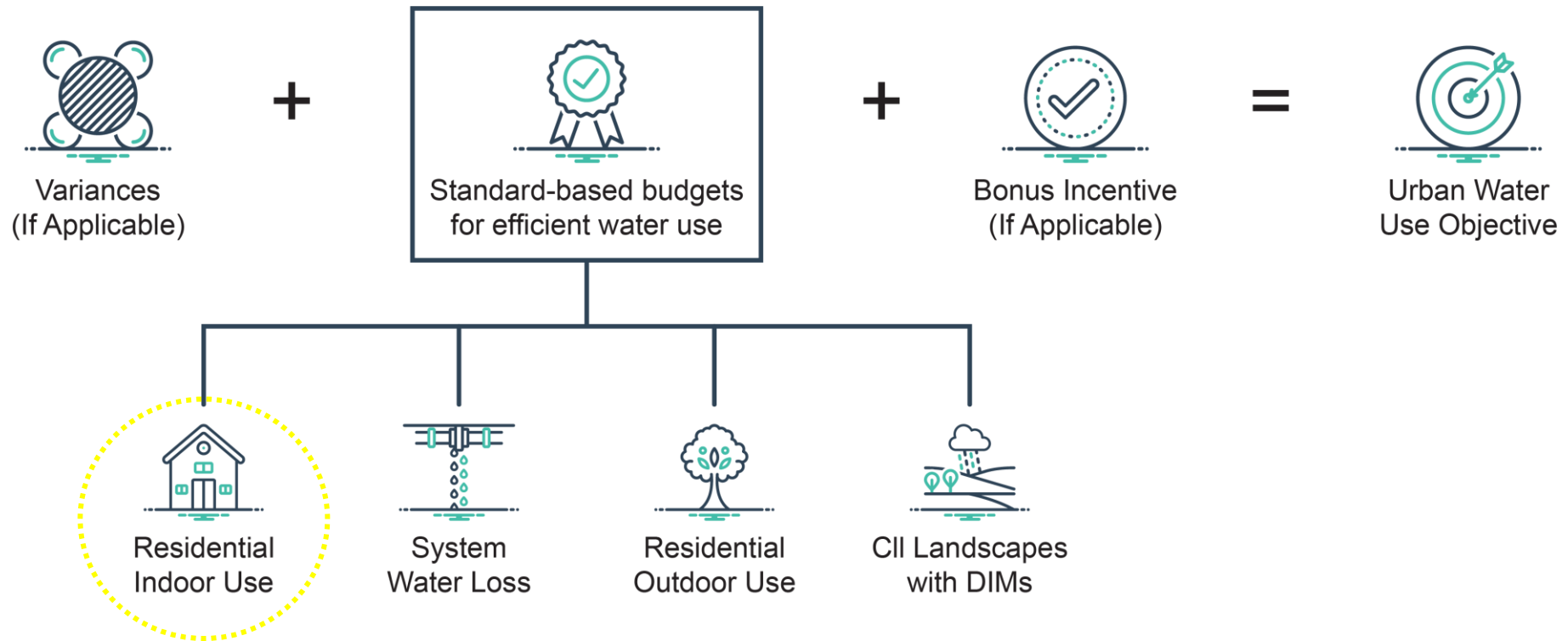
NEW WAVE OF EFFICIENT FIXTURES AND DEVICES

TIA FLEMING, CALWEP

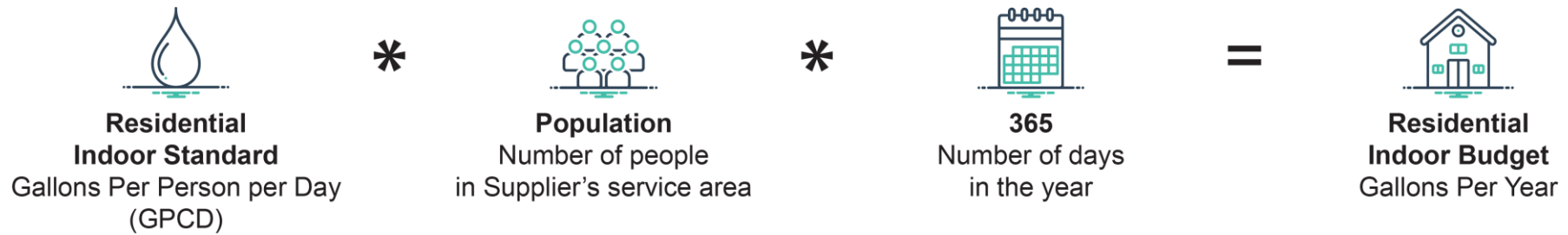


Calculating an Objective

Based on efficiency standards and customized, supplier-specific data



Efficient Residential Indoor Budget



Example budget for Res-Indoor Water Use (2019 data)

47 Gallons Per Person per Day (GPCD) * 508,172 people * 365 days =
~ 26.3 thousand AF

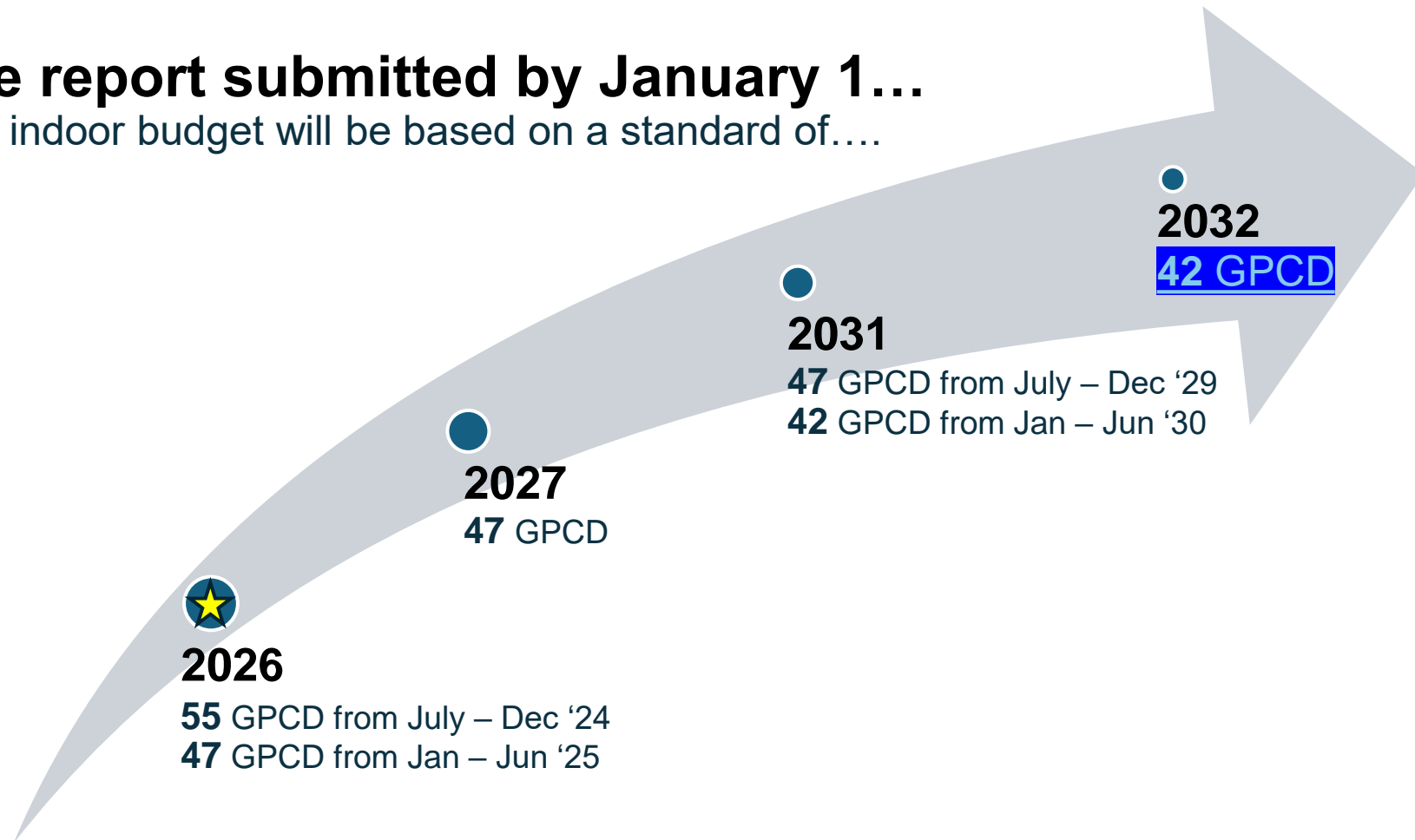
\$967

Residential Indoor Budget

What is required and by when?

For the report submitted by January 1...

The Res- indoor budget will be based on a standard of....



§967

Residential Indoor Budget

What do the data from the 2025 reports show?

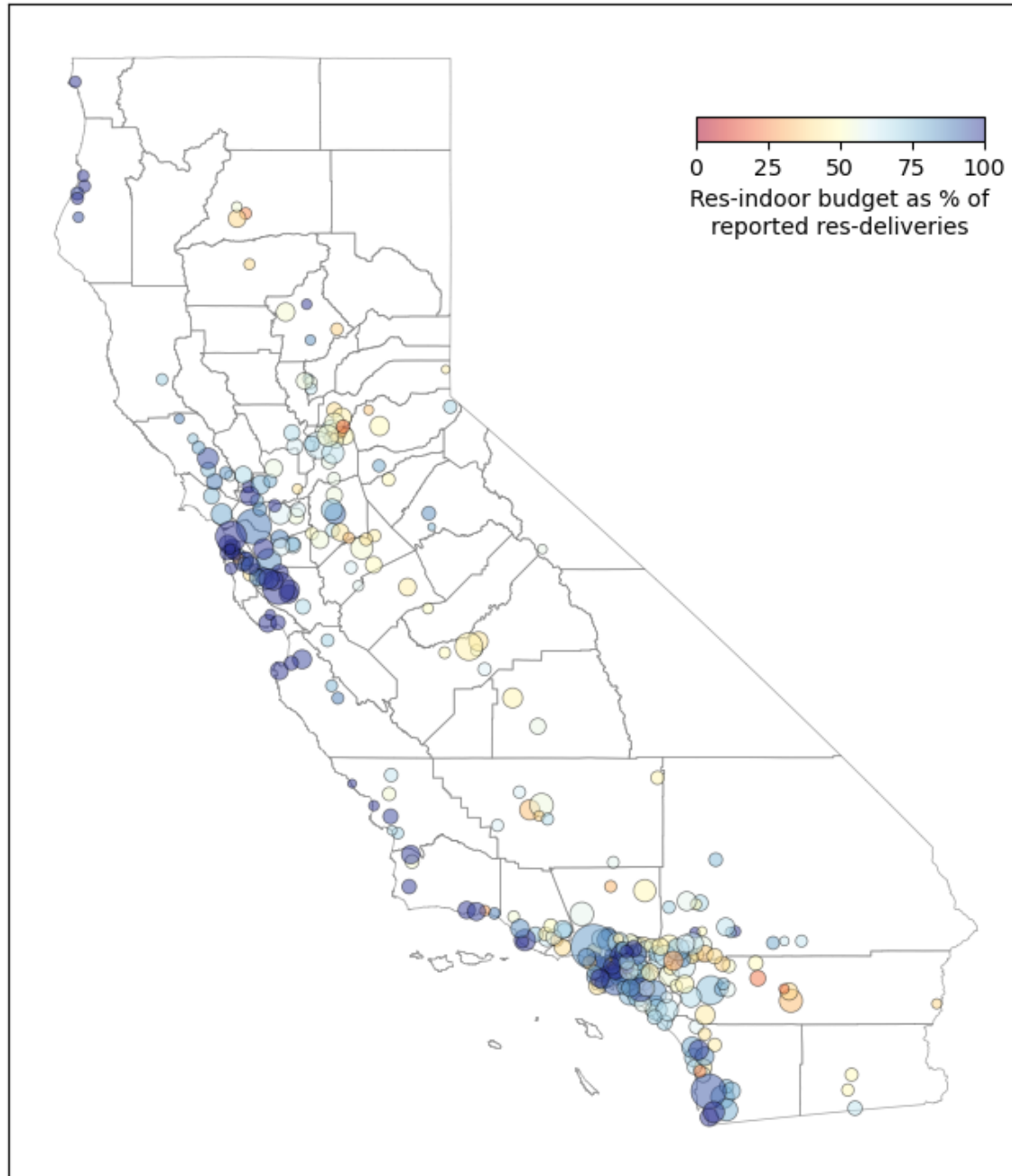
Of the **325** suppliers that submitted reports *with adequate data to calculate objectives...*

- **41** suppliers have a Res-indoor budget that represents 70% or more of their uncapped objective; for **39** suppliers, it represents 30% or less of their uncapped objective.

*The Res-indoor budget represents, on average, **48%** of the uncapped objective.
The median is **46%**.*

Of the **342** suppliers that submitted reports....

- **4** suppliers included data for the seasonal population variance:
 - *Big Bear Lakes*
 - *South Tahoe*
 - *Carlsbad*
 - *Desert Water Agency*
- **1** supplier included data for the evaporative cooler variance:
 - *West Kern Water District.*



\$967

Res-Indoor Budget

What do the data show?

- For most suppliers, the calculated Res-indoor budget represents 50% or more of reported residential water deliveries.

Median = **70%**.

- Suppliers serving coastal areas are more likely to have a large Res-indoor budget relative to reported residential deliveries. For **46** suppliers, the Res-indoor budget is greater than total reported residential deliveries.



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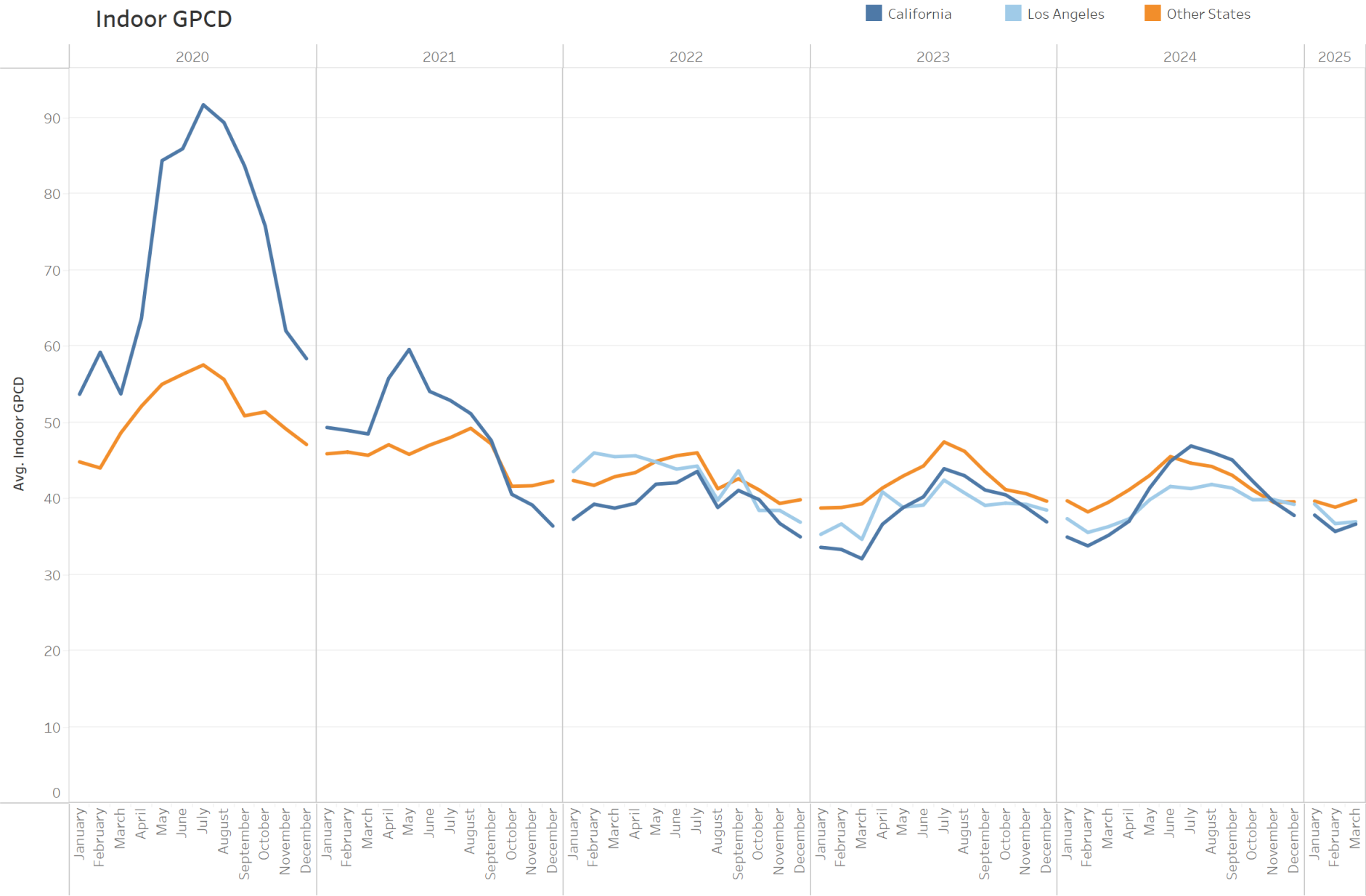
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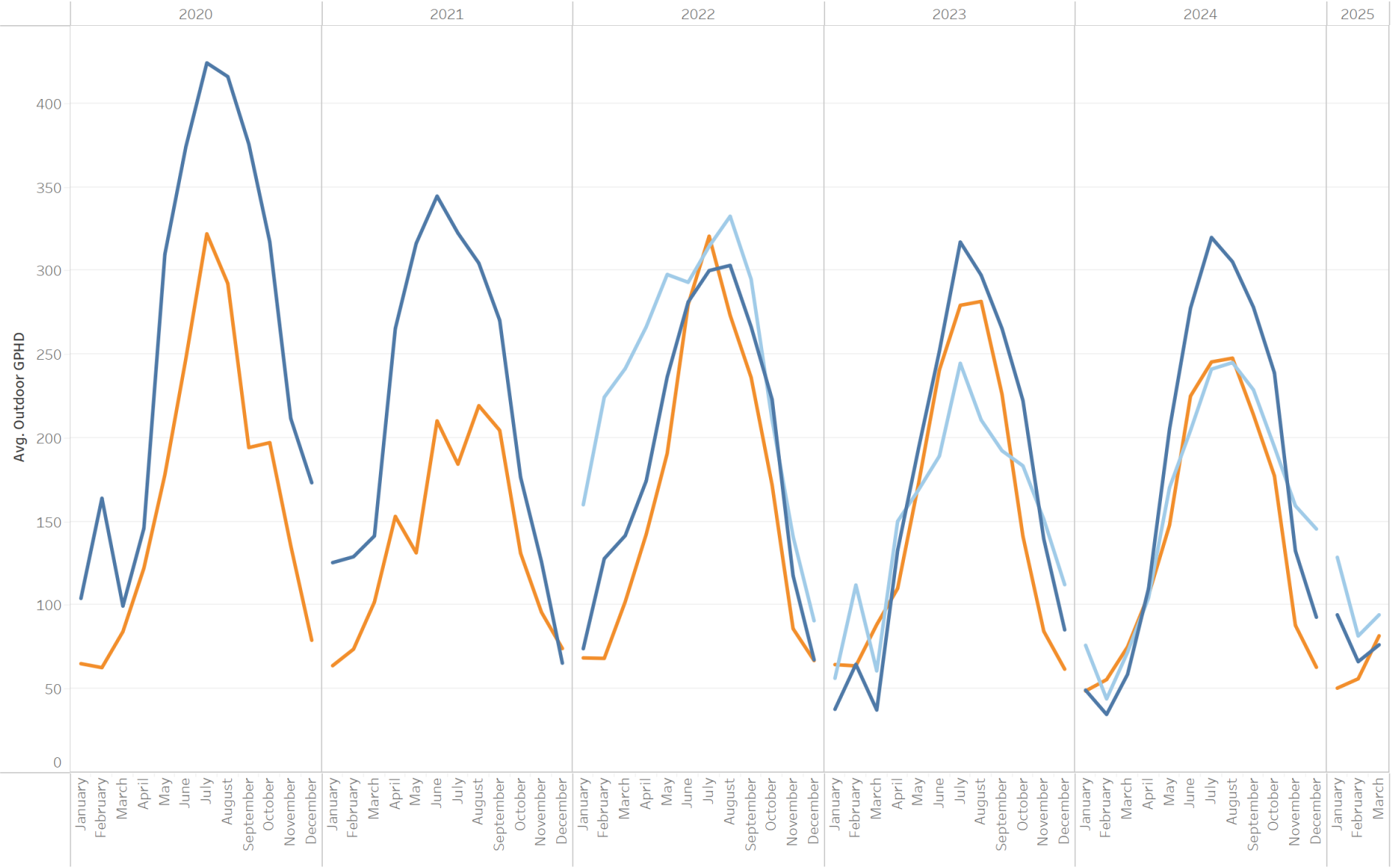
JOE FAZIO, FLUME WATER





Outdoor GPHD

California Los Angeles Other States





Los Angeles Deep Dive 50L Home Pilot

April 10, 2025



Pilot Objectives and Approach

Overall intent: Develop and test in an integrated manner the innovations required to create a path towards superior water and energy efficiency.

Specific goals:

- Gather valuable **consumer insights** and **technical learnings**
- Identify and **articulate incentives schemes (rebates and policy)** that could support the **replication of pilots and fast adoption**
- **Integrate solutions, products, and appliances** from several companies, primarily 50LH members



Phase 2 Innovations

Phase 2 of the project featured best-in-market water-saving showerheads, faucets, and toilets, next-gen washers, as well as eco-friendly consumable products.



Kitchen



Low-flow kitchen faucet
1.5 gpm



High efficiency dishwasher
3.3 gal / cycle



Bathroom



Low-flow
showerhead
1.5 / 1.8 gpm



Low-flow
bathroom faucet
1.0 / 1.2 gpm



High efficiency (1.0 gpf) or
dual-flush toilet (1.1 / 1.6 gpf)



Laundry Room



High Efficiency Washer and Dryer



Each home
is one-story with
2-3 bedrooms
and 2 bathrooms,
housing 2-5
residents.

Phase 2 Data Highlights

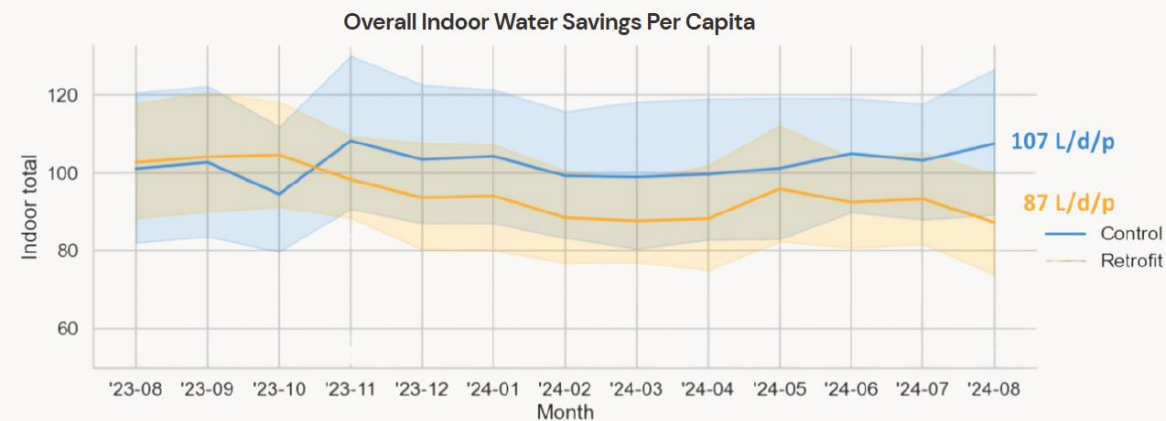


Retrofit Homes average indoor water use = **87 liters/23 gallons per person per day (PPPD)**

- **21% less** than the average use by the **Control Homes**
- **50% less** than the average use in **Los Angeles**

Retrofit Homes Reduction Breakdown (Compared to Retrofit Homes Baseline)

- **Daily hot water use by 23% overall**
- **Daily hot water use by 44% from kitchen faucets**
- **Weekly hot water use by 55% in laundry (per cycle)**
- **Overall water use by 14% in showers, and 23% in high efficiency toilets**



Phase 3 Highlights



Recirculating Shower



Ultra-Efficient Water-Saving Fixtures

Bathroom Faucets
0.5 GPM



Kitchen Faucets
1.0 GPM

Showerheads
1.25 GPM



Full Landscape Transformations and Polyculture Lawns





Water for Life

The Danish Perspective
Becky Henderson, Grundfos

Holistic Approach

- Consumption has been falling since 1987
- Water prices are based on average consumption.
- Stable pricing with a goal of 5% per household
- Wastewater discounts (Industry)
- Wastewater turbines
- Aarhus stormwater collection for non-potable use
- Wastewater monitoring to measure human wellness
- High quality tap water reduces plastic bottles
- Methane and nitrous oxide emissions reduced



Danish Water Sector Reform Act (DANVA)

- Performance standards for water and wastewater utilities (including water loss)
 - Loss exceeding 10% total distribution is fined
 - Better management of groundwater sources*
 - CSR reporting / image
- Water Sector commitment to energy and carbon neutral 2030
- Investment into efficiency is regulated to ensure fairness
- Commitment to UN Sustainable Development Goals

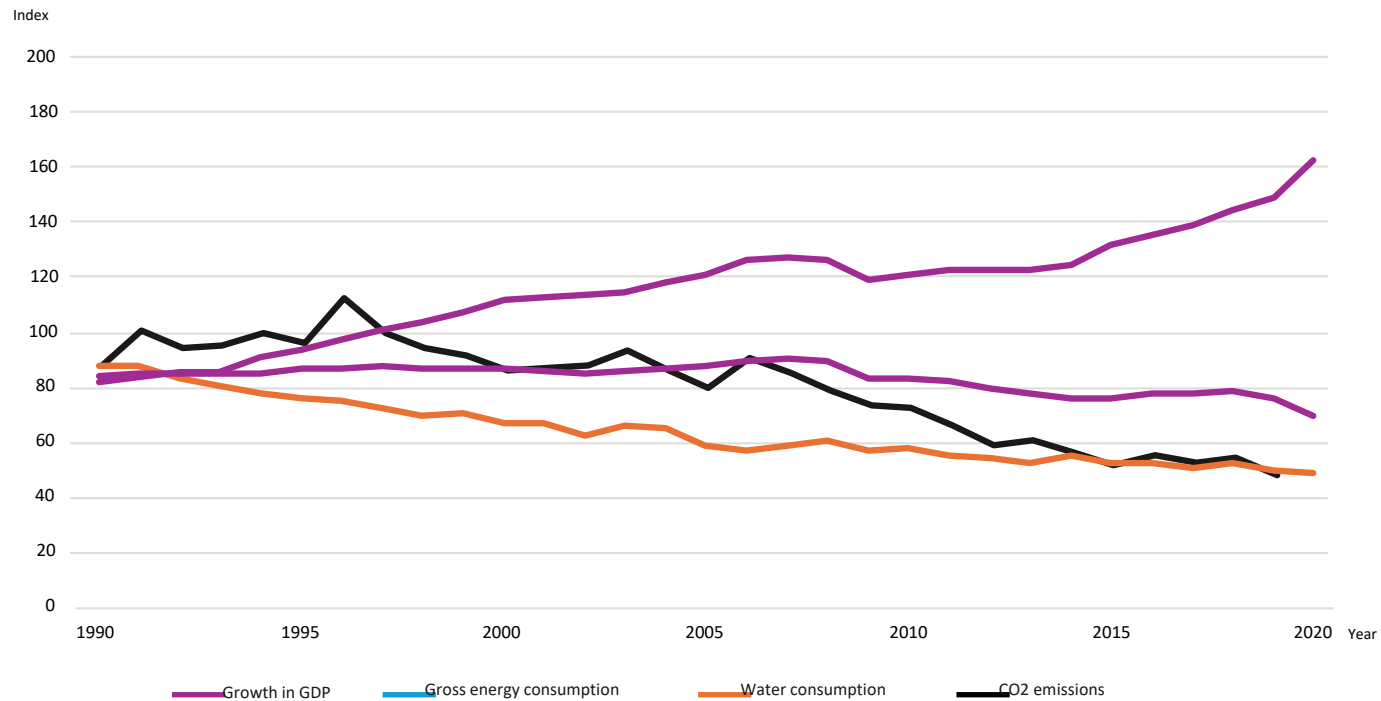
Key Takeaways



- Benchmarking
- Metering – Quick repairs of leaks
 - SRO system, Model-based, Tracer gas and Acoustic equipment
- Compartmentalizing pipeline grids
- Leakage penalty tax
- Infrastructure investment in technology
- Fire hydrant leakage

Denmark

economy, energy, water & CO2 development



62%

growth in GDP

-14%

gross energy consumption

-39%

water consumption

-42%

CO₂ emissions



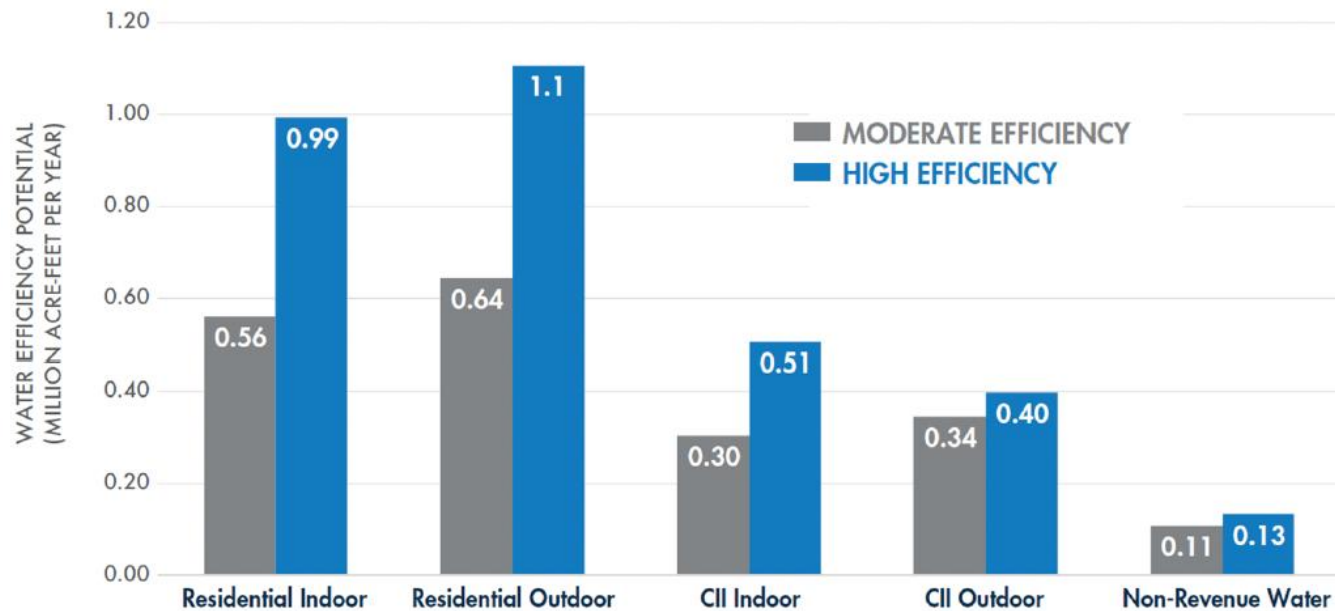
The Water Efficiency Potential in California and across the United States

Global Strategies, Local Action: A Danish-California Dialogue on Water Efficiency and Loss Reduction

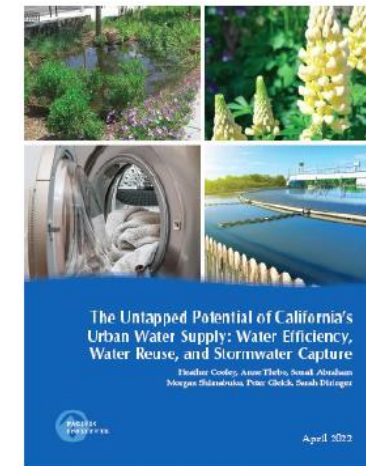
**Heather Cooley
Chief Research and Program Officer, Pacific Institute**

April 10, 2025

The Untapped Potential of California's Urban Water Supply – Released April 2022

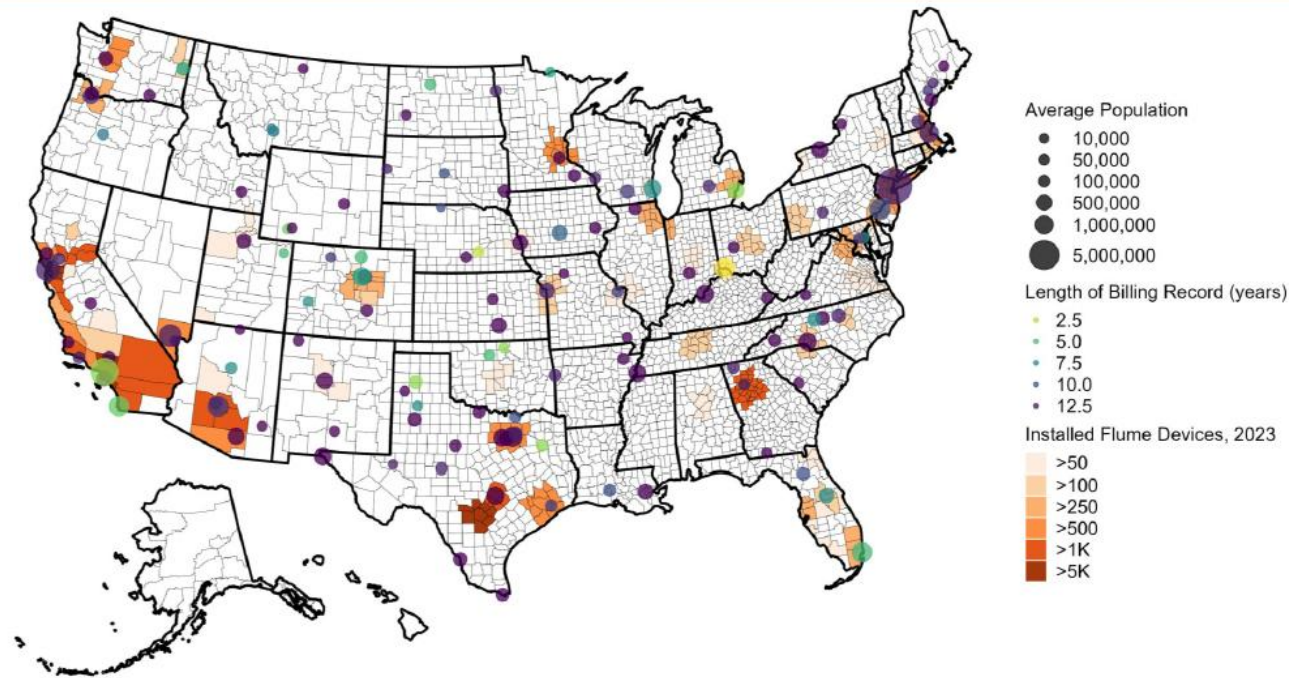


Statewide Potential:
2.0 to 3.1 million
acre-feet per year



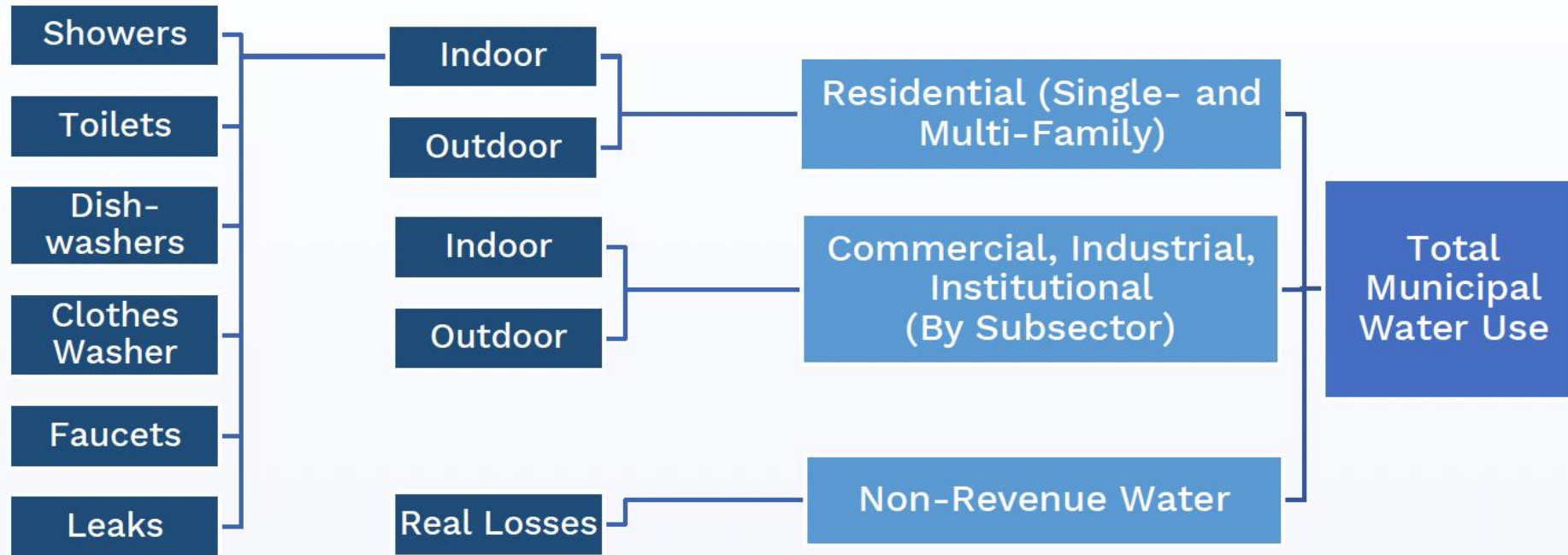
Available at <https://pacinst.org/publication/california-urban-water-supply-potential-2022/>

Study combines Flume and billing data to develop a baseline estimate of municipal water use across the US.



COLORADO STATE
UNIVERSITY

Study examines water savings potential across major sectors, CII subsectors, and residential end uses.



Study uses three water efficiency scenarios.

Scenario #1



Eliminate
overirrigation



Performance: Median



Scenario #2



Medium water-
use plants and
efficient irrigation



Performance: Top 25%



Scenario #3



Low water-use
plants and
efficient irrigation



Performance: Top 5%





PACIFIC
INSTITUTE

Thank you!



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Closing

TIA FLEMING, CALWEP

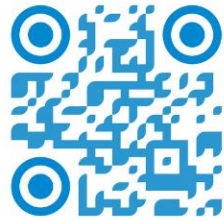
MARIE STEFFENSEN,
Water Technology Alliance



STAY IN TOUCH



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CALIFORNIA
WATER EFFICIENCY
PARTNERSHIP

