



Conservation Update

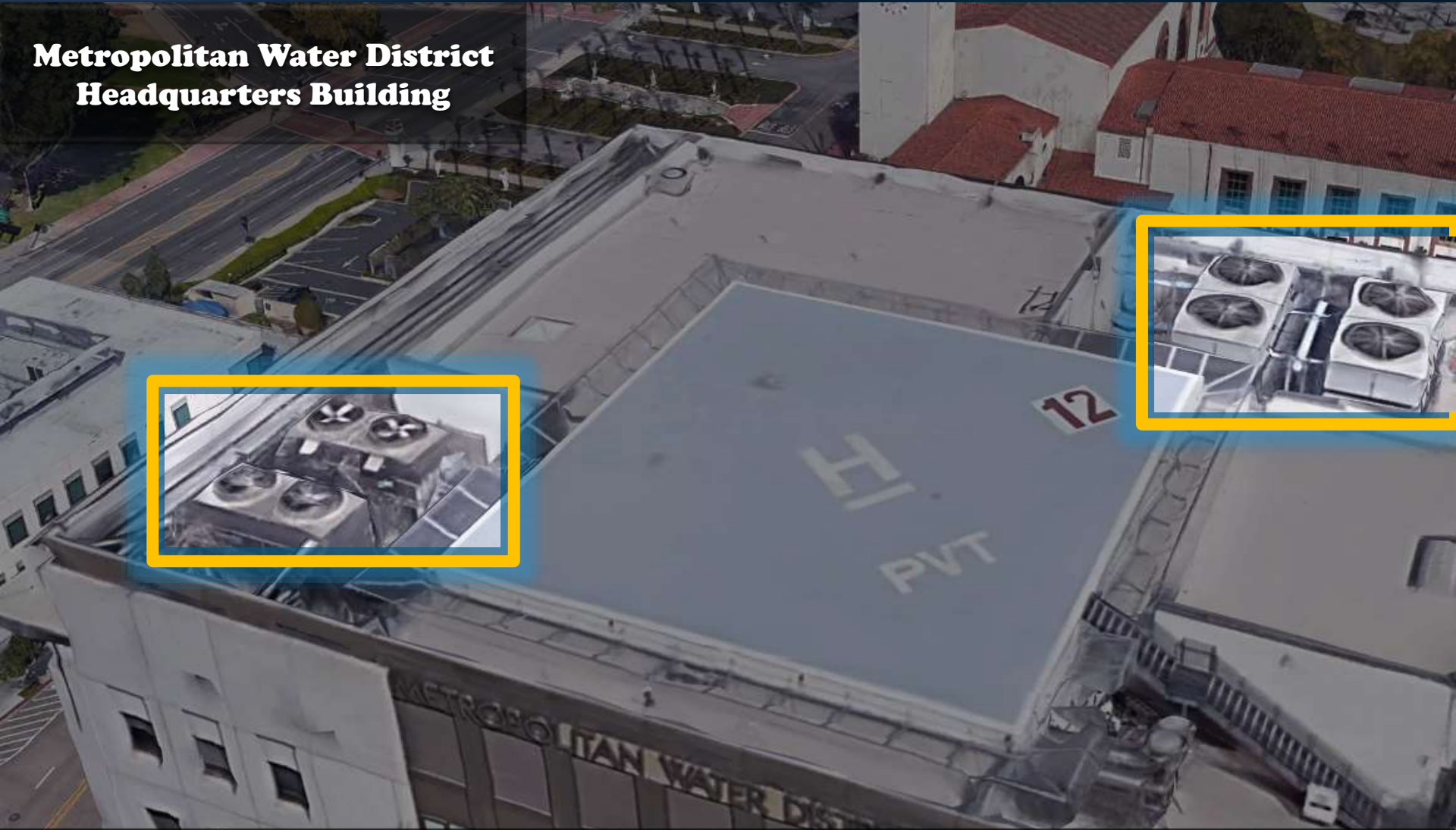
Conservation and Local Resources Committee

Item 4a

July 9, 2019

Cooling Technologies/Cooling Towers

**Metropolitan Water District
Headquarters Building**



Cooling capacity: ~ 2,000 tons

Amount of air conditioned space: ~1,000,000 square feet

Questions for today

What is a cooling tower and how is water used?

How does Metropolitan incentivize water efficiency in cooling towers?

What are we doing to learn more?

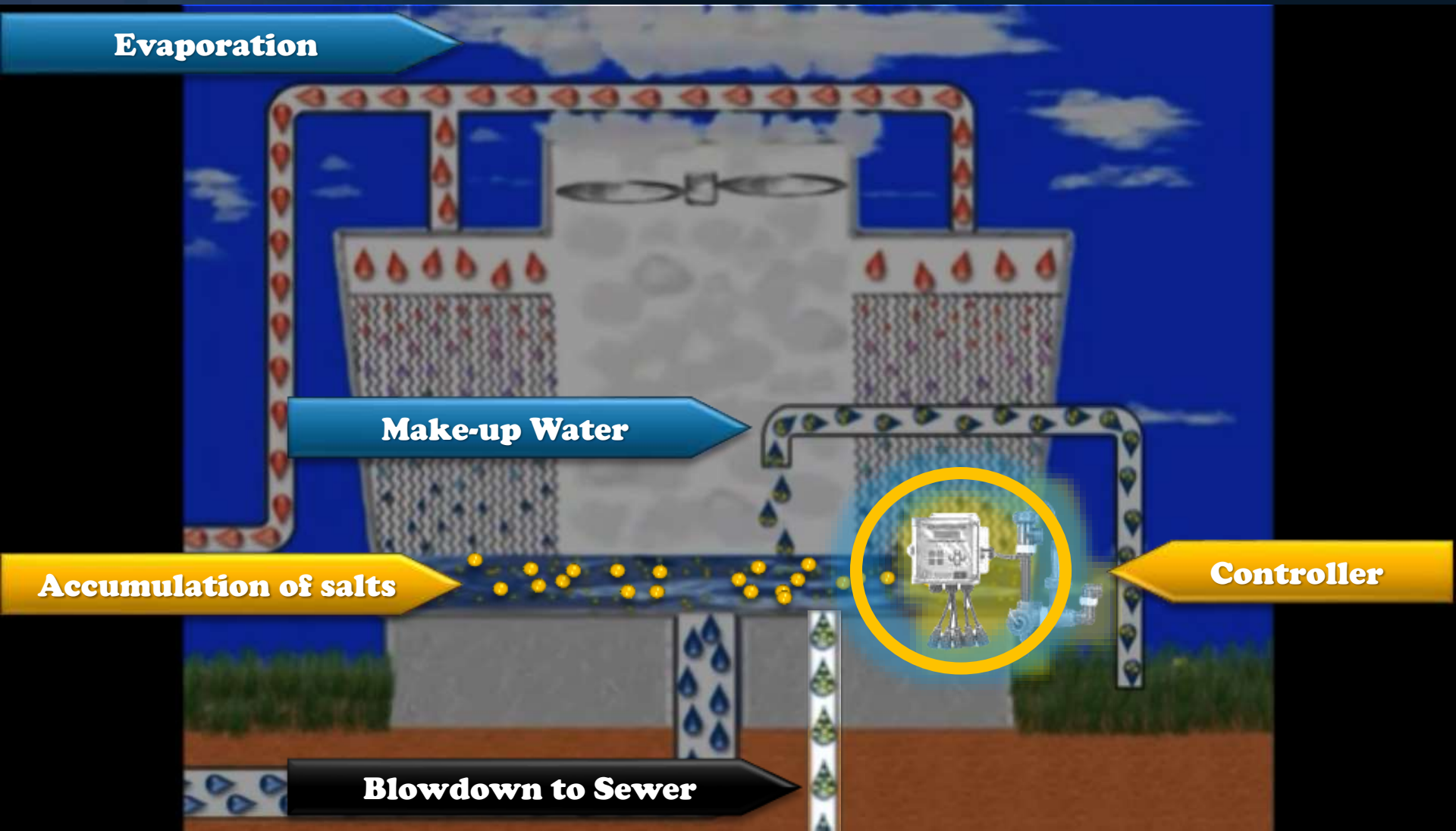
Cooling Towers: Building Air Conditioning Systems

Air is heated inside buildings from humans, computers, & other machines

Warm air is sucked into duct systems & taken to a heat exchanger

Water removes heat from the air & cool air is returned to the building

How Does a Cooling Tower Work?



How to Improve the Water-use Efficiency of Cooling Towers

- Control/Monitor water quality:
 - Pretreatment before basin
 - In-basin treatment
- Substitute potable water with alternate onsite source
 - 100% potable water conservation
 - Monitoring still needed

How does Metropolitan Incentivize Water-Use Efficiency in Cooling Towers?

Metropolitan Provides Rebates for Cooling Tower Controllers



HVAC Equipment

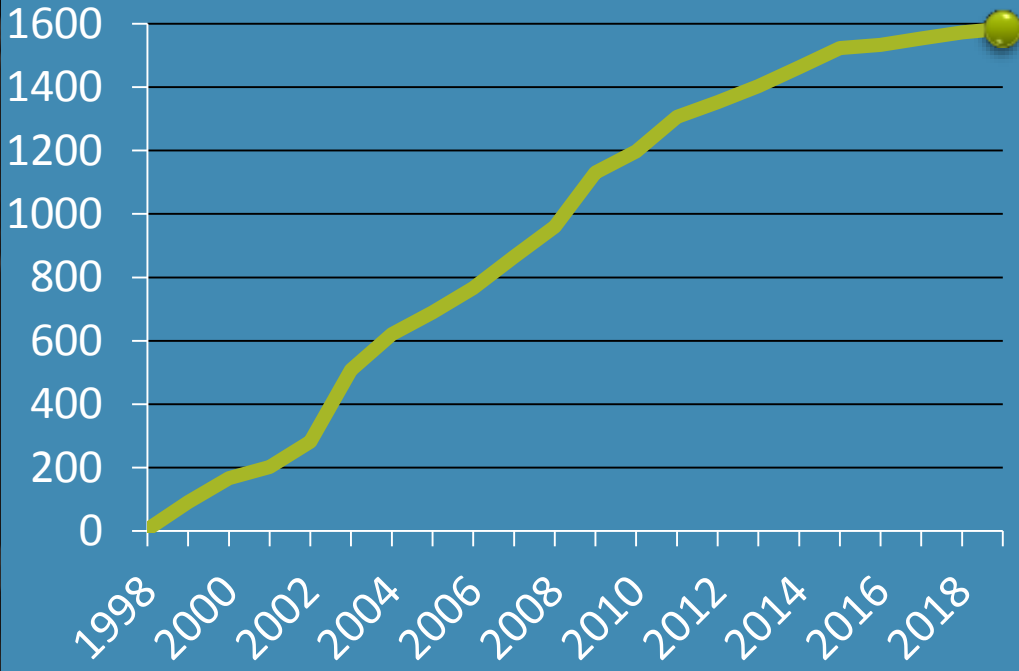
Cooling Tower Conductivity Controllers \$625

Cooling Tower pH Controllers \$1,750

Conductivity Controllers: 3 AF
pH Controllers: 10 AF



Cooling Tower Controllers: Units Rebated to Date



**7,600 - 15,000 acre-feet
Lifetime water savings**

Additional Incentives for Cooling Water-Use Efficiency

- Water Savings Incentive Program (WSIP)
 - Customized incentives for unique projects
 - Third-party water management services

WSIP: Customized Incentives for Cooling Towers

Biola University Zero liquid blowdown system treats/
softens water before entering basin



Saving 12 acre feet per year



WSIP: Customized Incentives for Cooling Towers (continued)

Cedars-Sinai Treating nuisance groundwater to replace potable water for use in cooling towers & other processes



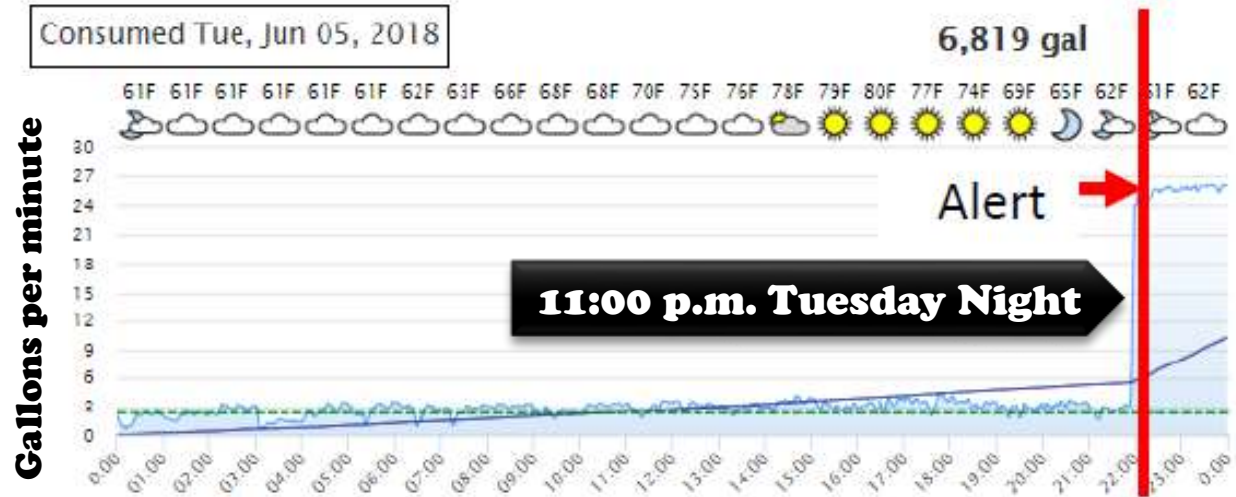
Saving 86 acre feet per year



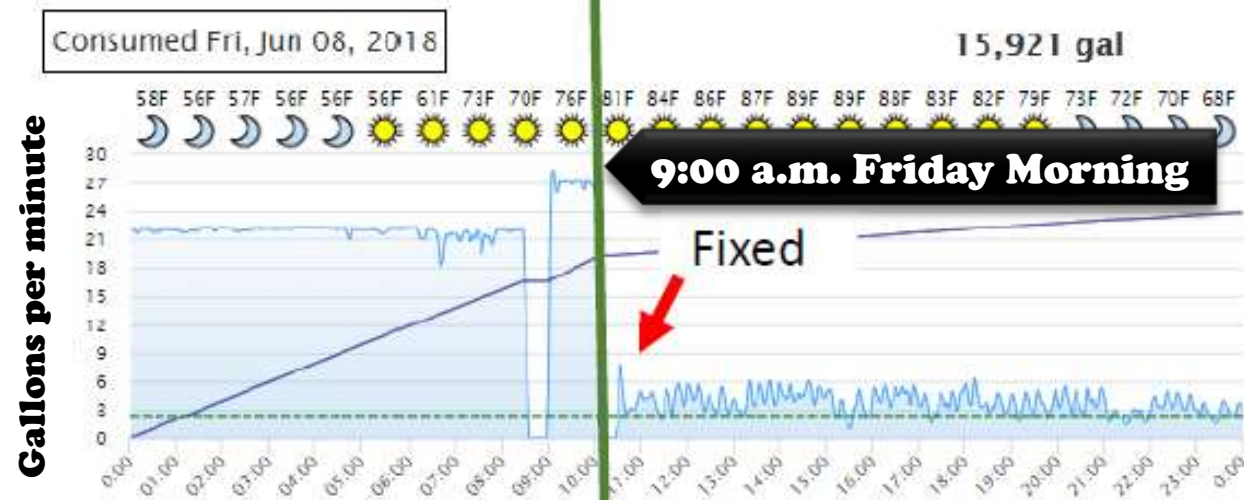
Innovative Conservation Program Project

Apana Inc.

Real-time data used to pinpoint cooling towers system failures



Saved 535,000 gallons



What Are We Doing to Learn More?

Alliance for Water Efficiency (AWE) Cooling Technologies Project

- In partnership with the Pacific Northwest National Laboratory
- Develop best practices to identify facilities with cooling towers
- Will inform potential for Metropolitan service area



AWE Cooling Technologies Project

- Project kicked off January 2019
- Task 1: Data collection: Completed
- Task 2: Develop model: July 2019
 - **Excel-based modeling tool**
 - Based on zip code
 - Estimate number of cooling towers (min/max)
 - Cooling tonnage



AWE Cooling Technologies Project (continued)

- Additional tasks

- Determine the conservation potential:

- Alternative cooling technologies

- Various improvements to traditional technologies

- Develop practical guides to increase the effectiveness of outreach



Next Steps for Metropolitan

- Continue work with AWE on the Cooling Technologies Project
- Explore ways to further promote incentives
 - Third-party water treatment providers
 - Technology vendors
 - Energy utilities
 - Member agency representatives

Conservation Expenditures

FY18/19 -19/20

	Paid ⁽¹⁾	Committed ⁽²⁾
Regional Devices	\$6.3M	\$3.2M
Member Agency Administered	\$1.1M	\$4.8M
Turf Replacement ⁽³⁾	\$1.5M	\$7.0M
Advertising	\$3.8M	\$0.6M
Other	\$1.3M	\$3.6M
Regional Multi-Family Pilot	\$0.0M	\$2.6M
TOTAL	\$14.0M	\$21.8M

(1) Modified Accrual as of 5/31/19. Values include admin fee when appropriate.

(2) Committed dollars as of 6/10/19.

(3) Up to \$50M in applications accepted each year.

Draw from Water Stewardship Fund for expenditures above \$17M.

Conservation Activity

FY18/19 -19/20

Summary of Incentives Provided in May 2019: \$868,117



Turf Replacement Rebates:

May: 284,204 ft² removed

FY18/19-19/20: 2,061,824 ft² removed



Clothes Washers:

May: 2,301 units rebated

FY18/19-19/20: 14,137 units rebated



Smart Controllers:

May: 1,139 units rebated

FY18/19-19/20: 11,306 units rebated



Urinals:

May: 7 units rebated

FY18/19-19/20: 223 units rebated



Rain Barrels and Cisterns:

May: 168 units rebated

FY18/19-19/20: 2,181 units rebated



Toilets:

May: 2,314 units rebated

FY18/19-19/20: 39,717 units rebated

Lifetime Water Savings to be achieved by all rebates in May 2019: 4,605 AF

FY18/19-19/20: 50,540 AF lifetime water savings

