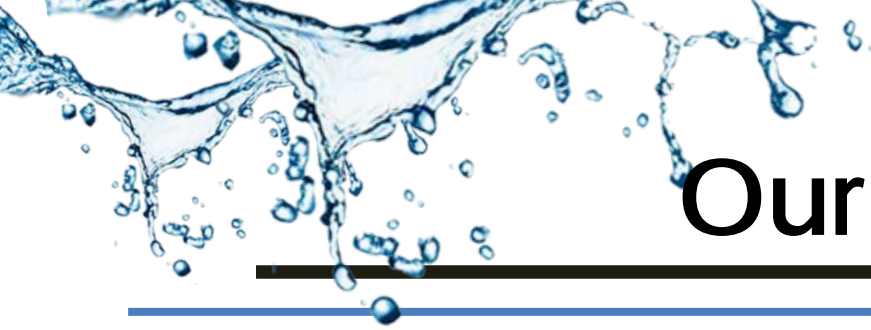




Thursday, August 25, 2022
via ZOOM

Thank you for joining!



Our Coordination Team



Rupam Soni,
Chair
Metropolitan
Water District
of Southern
California



**Patsy
Tennyson**
Katz and
Associates



Mark Millan
Data Instincts



Rebecca Rubin,
Vice -Chair
Soquel Creek
Water District



Gina Ayala
Orange County
Water District



**Melanie Mow
Schumacher**
Soquel Creek
Water District



Agenda

- | | |
|-------------------|---|
| 12:00 P.M. | Welcome
<i>Rupam Soni Metropolitan Water District</i> |
| 12:05 P.M. | Meet the Authors: <i>The Water Recycling Revolution: Tapping into the Future</i>
<i>The Water Recycling Revolution is a new book out that tells the story of the development of potable reuse. Here's an excerpt from Amazon: In this book, William M. Alley and Rosemarie Alley answer our most pressing questions: How do you get people to overcome the visceral reaction known as the "Yuck Factor" and not only drink, but appreciate, recycled water? Join the authors as they tell more about their book and answer this question and others.</i>
<i>Bill and Rosemarie Alley Authors</i> |
| 12:50 P.M. | Update from California <u>WaterReuse</u> Association's Managing Director
<i>Jennifer West <u>WaterReuse California</u></i> |
| 1:05 P.M. | Tool Time: New PowerPoint Resources You Need to Use
<i>Mackenzie Morris Soquel Creek Water District</i> |
| 1:20 P.M. | Round Table Discussion
<i>Gina Ayala Orange County Water District</i> |
| 1:30 P.M. | Wrap Up
<i>Rupam Soni Metropolitan Water District</i> |



MEET THE AUTHORS: *THE WATER RECYCLING REVOLUTION: TAPPING INTO THE FUTURE*

Bill and Rosemarie Alley



The History and Lessons of Potable Reuse in the United States

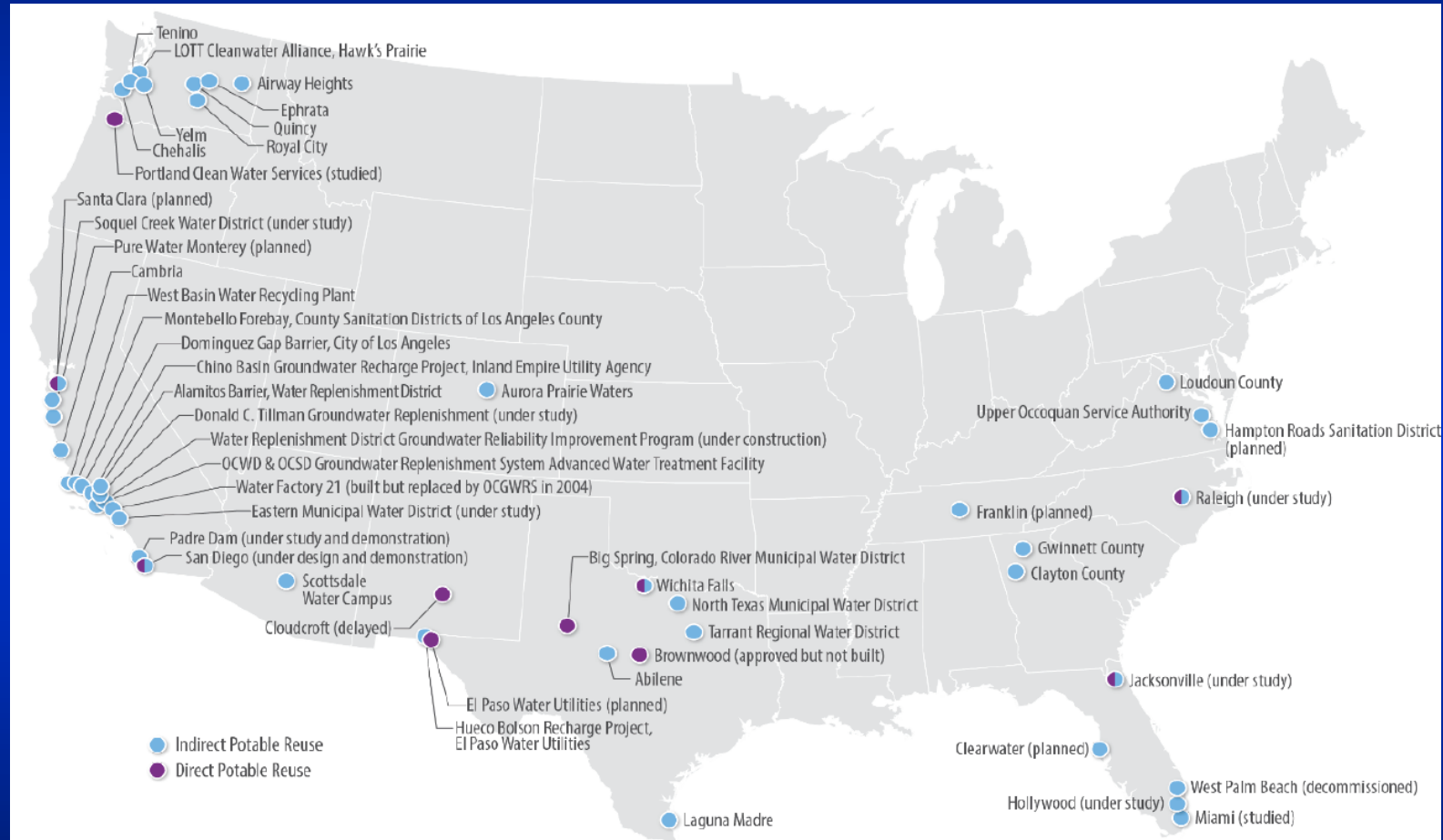


**William M. Alley
Rosemarie Alley**

**California Collaborative
Communications Group**

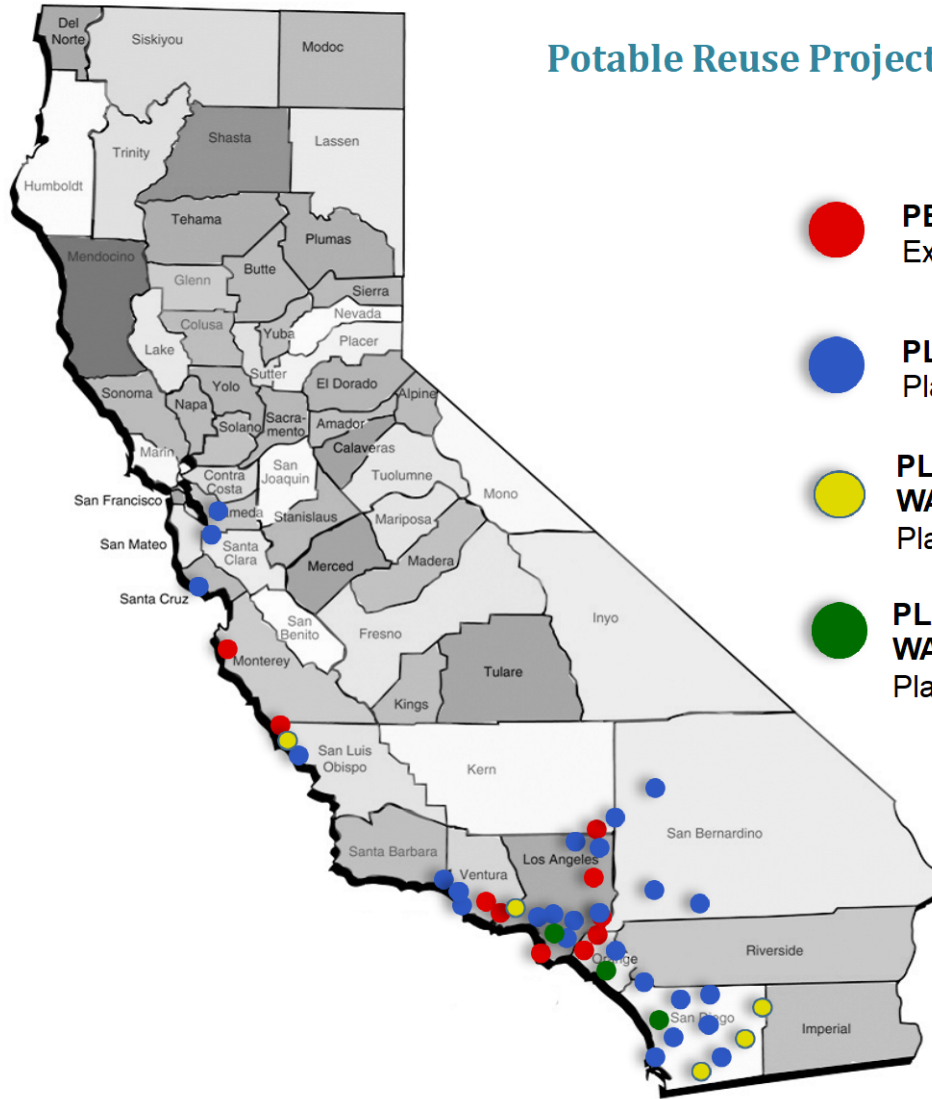
August 25, 2022

U.S. Potable Reuse Projects



Source: US EPA (2017)

Potable Reuse Projects



PERMITTED GROUNDWATER (9)

Existing $\approx 207,545$ AFY ~ 1.66 M People



PLANNED GROUNDWATER (24)

Planned $\approx 310,588$ AFY ~ 2.5 M People



PLANNED RESERVOIR WATER AUGMENTATION (5)

Planned $\approx 119,031$ AFY $\sim 952,000$ People



PLANNED RAW WATER AUGMENTATION (3)

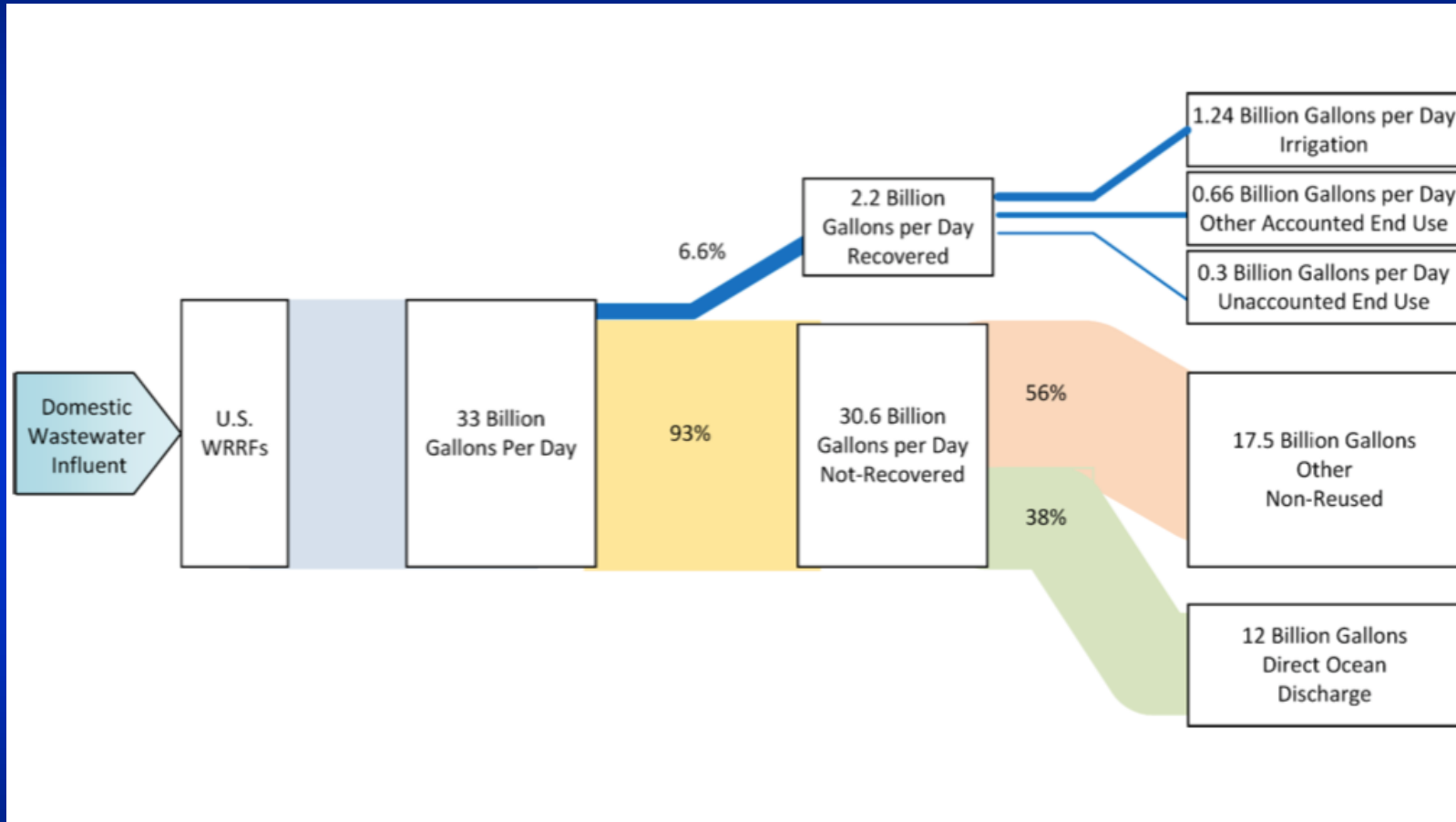
Planned $\approx 91,000$ AFY $\sim 728,000$ People

TOTAL AFY $\sim 728,164$

TOTAL PEOPLE SERVED ~ 5.8 Million



Existing and Potential Water Reuse



Source: US EPA US EPA National Water Reuse Action Plan

National Research Council

- 1998:
“indirect potable reuse is an option of last resort”
- 2012:
The chemical risks of potable reuse “does not exceed the risk in common existing water supplies.”
The microbial risk from potable reuse “does not appear to be any higher, and may be orders of magnitude lower, than currently experienced in at least some current drinking water treatment systems.”

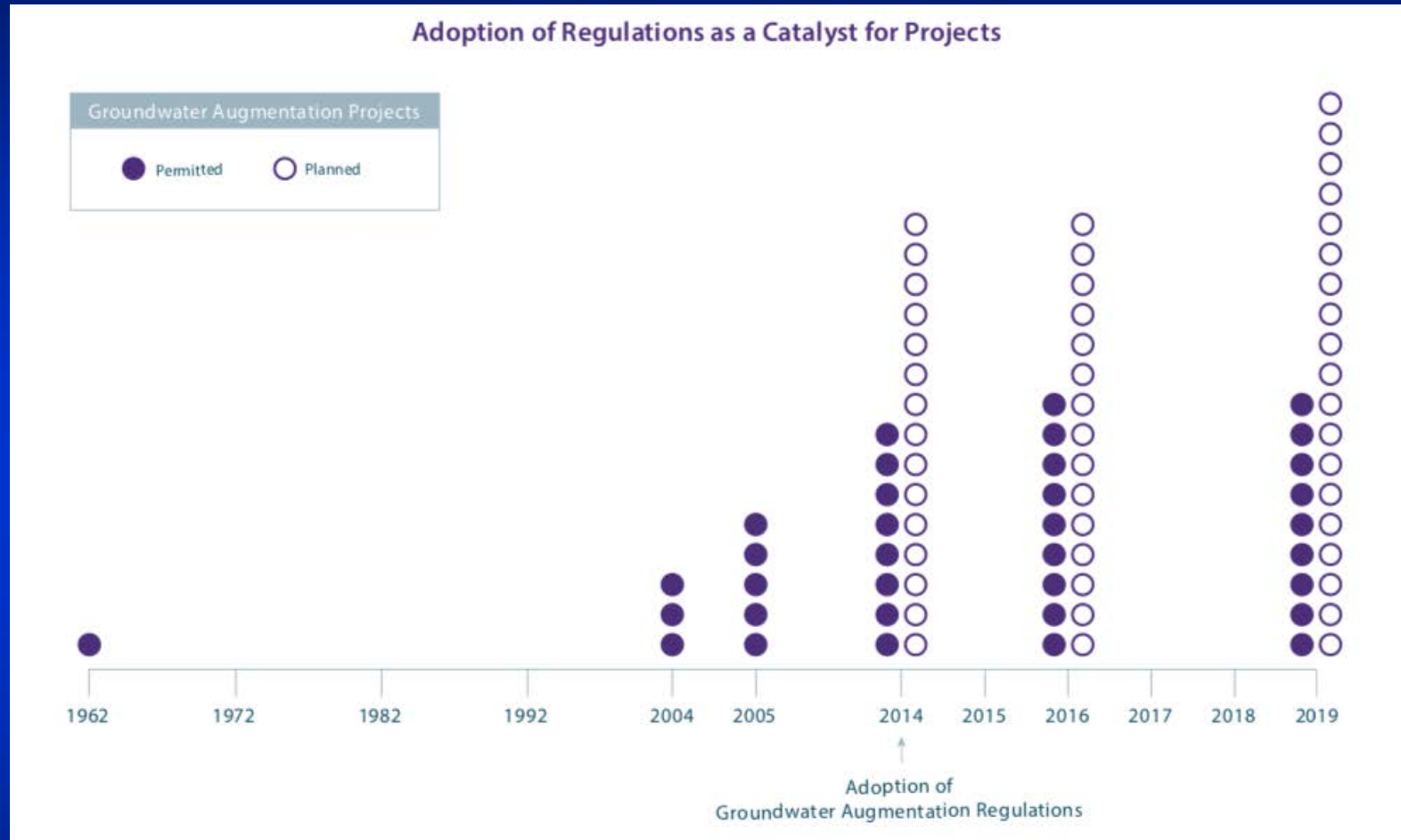
Potable Reuse: Historical Notables

- 1962 Montebello Forebay
- 1976 Water Factory 21
- 1978 Upper Occoquan Service Authority, VA
- 1985 Hueco Bolson Recharge Project, El Paso, TX
- 1986 Water Conserv II, FL
- 1990s San Gabriel Valley, San Diego, San Fernando Valley projects
- 1995 Edward C. Little Water Recycling Facility (West Basin MWD)
- 1998 Scottsdale Water Campus, AZ
- 2009 Groundwater Replenishment System, Orange County
- 2010 Gwinnett County, GA
- 2010 Prairie Waters Project, Aurora, CO
- 2012 Colorado River Municipal Water District, TX
- 2014 Wichita Falls, TX
- 2019 Monterey, CA

Montebello Forebay







Source: California Water Reuse Action Plan (2019)

Water Factory 21 (1976)



OCWD



OCWD brochure

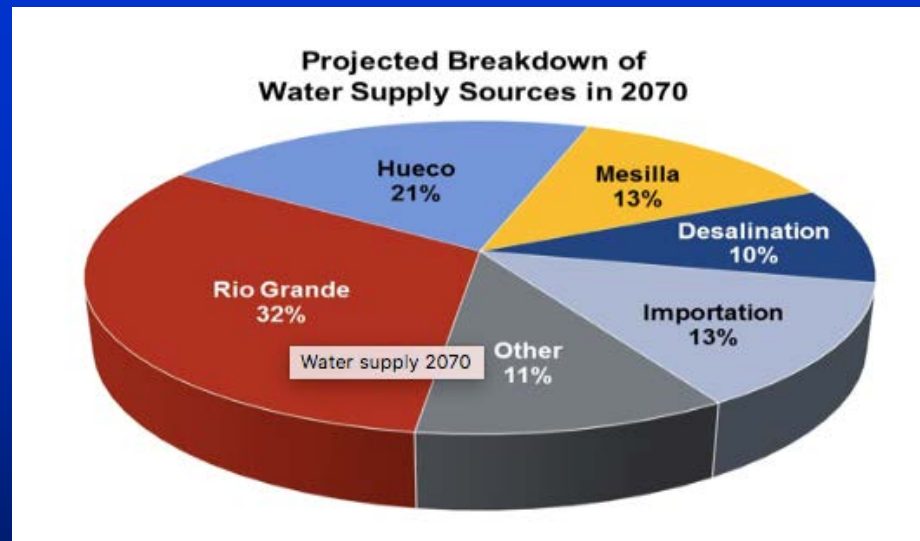
Upper Occoquan Service Authority



El Paso, Texas (1985)



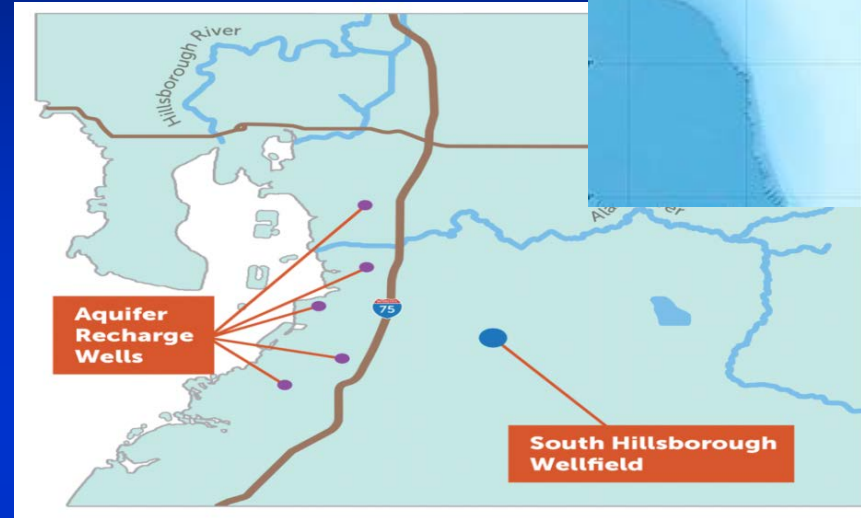
Willie the Waterdrop talks water resources



Tech2O Water Resources Learning Center

Florida

Water Conserv II (1986)



- 533,286 residences
- 512 golf courses
- 1,160 parks
- 405 schools



Ocala Wetland Recharge Park

The 1990s: Era of “Toilet-to-Tap”

- **San Gabriel Valley**
 - Challenged by Miller Brewing in 1993
 - Origen of “toilet-to-tap”
- **San Diego**
 - Mayor and city council shutdown effort in 1998 after \$15 million and two decades of research
- **San Fernando Valley**
 - Tied to landmark Mono Lake decision
 - Caught up in mayoral and other politics
 - Shutdown \$55 million pipeline in 2000 after just few days of operation

Edward C. Little Water Recycling Facility ("Fit-for-Purpose" 1995)

- Irrigation Water (tertiary treated)
- Industrial Cooling Towers (processed to remove ammonia)
- Low-Pressure Boiler Feed Water (microfiltration and RO)
- High-Pressure Boiler Feed Water (second RO round)
- Seawater Barrier and Groundwater Replenishment (advanced treatment)

Scottsdale Water Campus (1998)



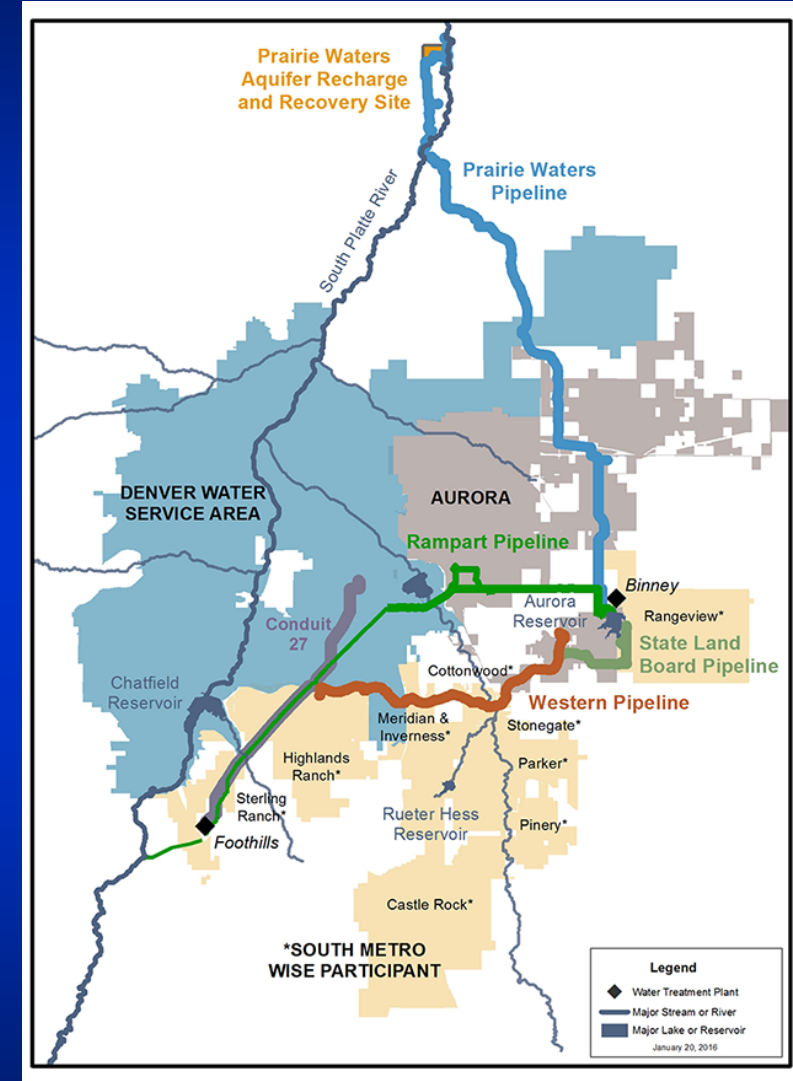
Groundwater Replenishment System (2009)



Gwinnett County, Georgia (2010)



Prairie Waters Project Aurora, CO (2010)



San Diego



Point Loma Wastewater Treatment Plant



San Diego Union Tribune, Late 1990s

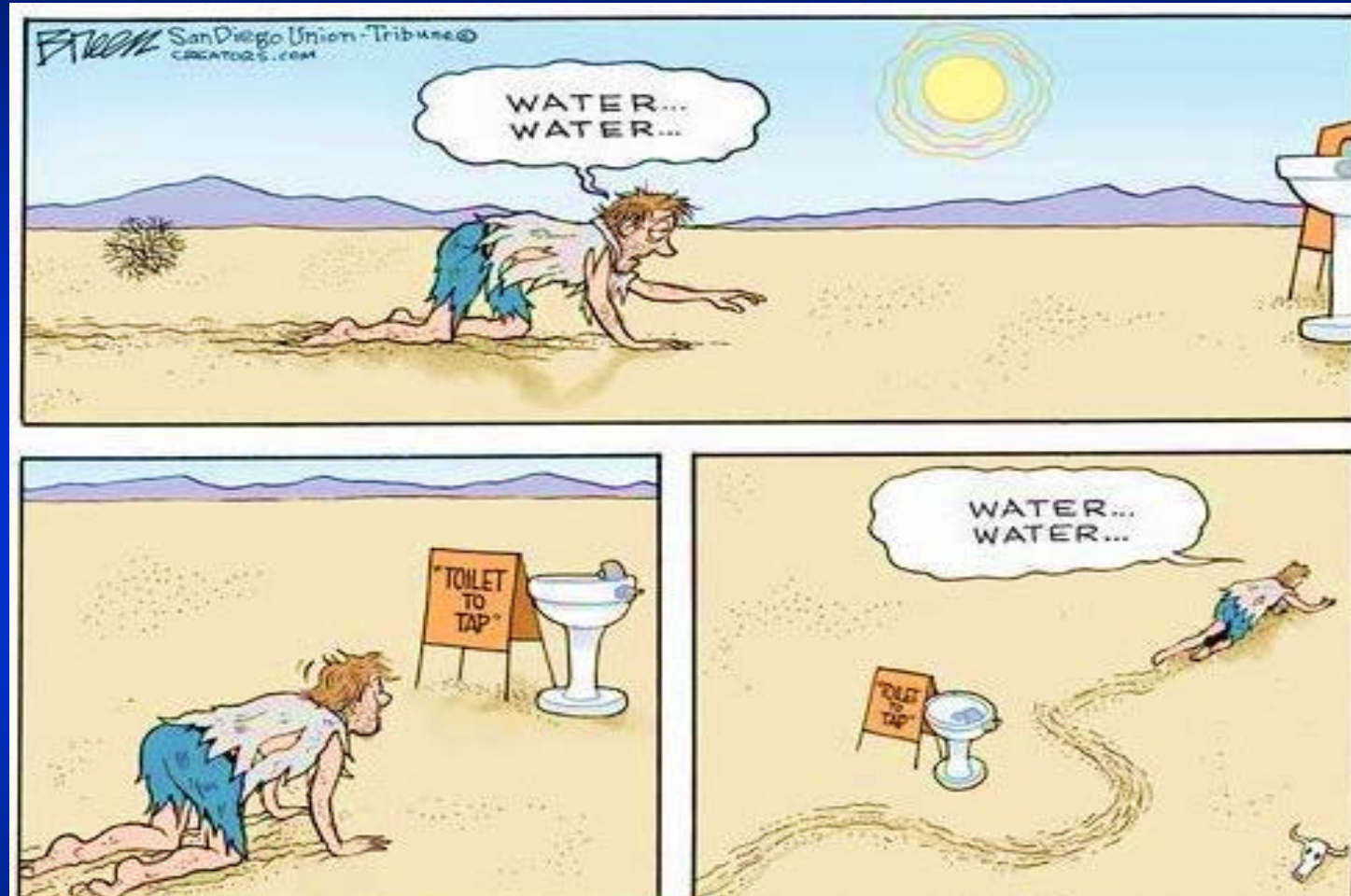
“It’s one of those deals where the people who support it don’t really care about it, while people who oppose it care a great deal—which is what makes it a good campaign issue.”

Political consultant upon abandonment of project
(1998)



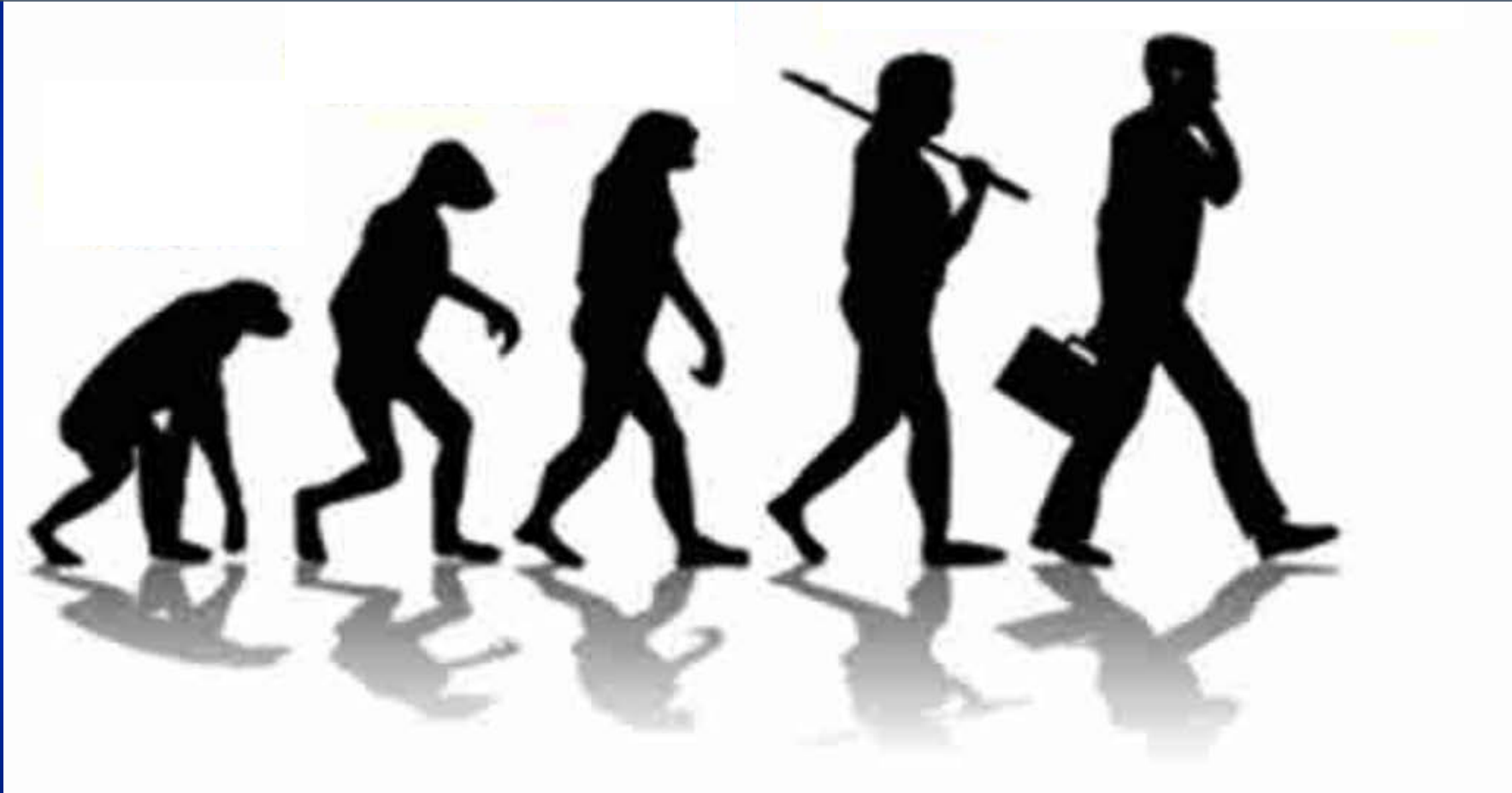
What changed?

- Public engaged from the the outset in developing and selecting alternatives
- Limited market for nonpotable reuse water
- Coalition of community leaders ranging from Chamber of Commerce to Surfrider Foundation
- Droughts
- Public support for potable reuse increased from 26 percent in 2004 to 73 percent in 2013
- Persistence pays



San Diego Union-Tribune, May 2017

Evolution of Water Reuse



Disposal

Reclaimed Water

**Indirect Potable
Reuse**

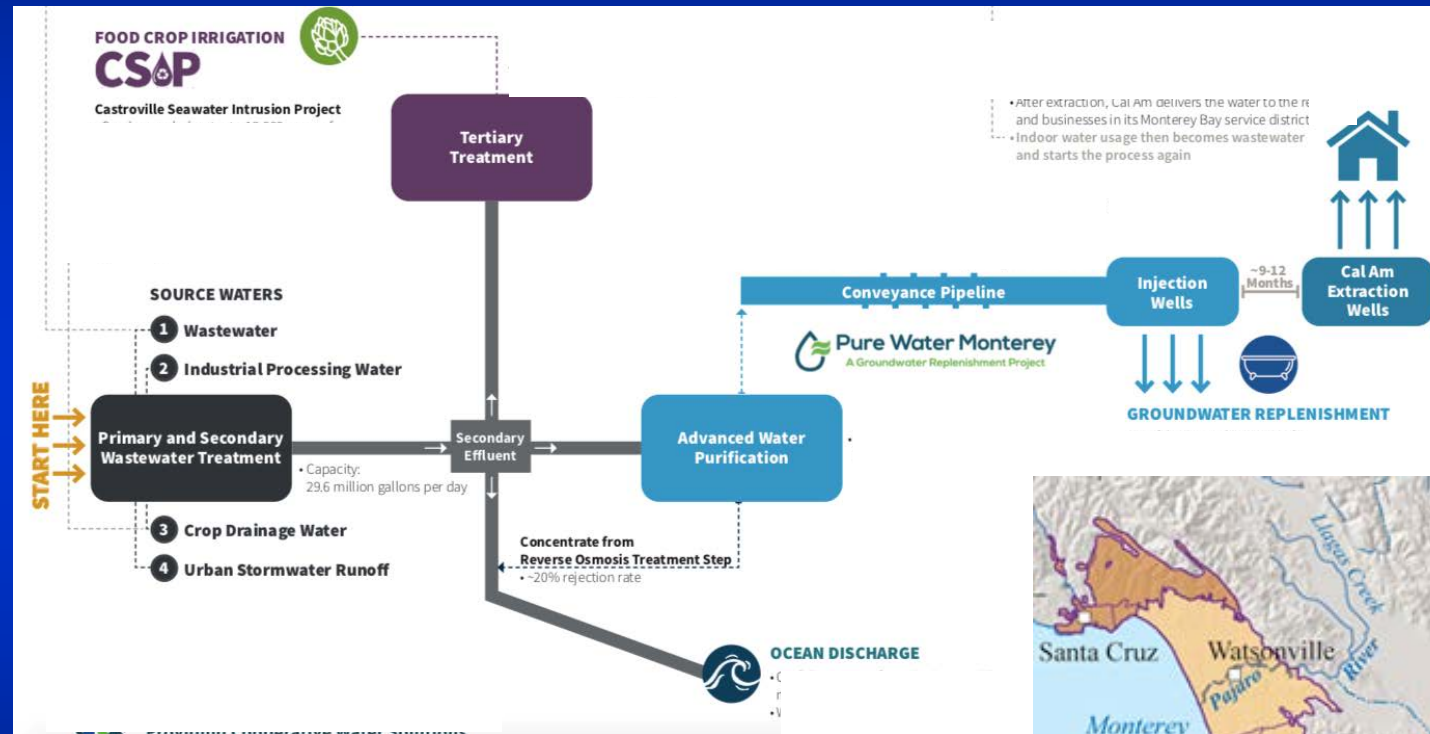
**Direct
Potable Reuse**

Source: El Paso Water

Direct Potable Reuse

- 2012-present: Colorado River Water Municipal District (Big Spring, TX)
- 2014: Wichita Falls, TX
- Potential for higher water recovery, lower treatment costs, and less infrastructure for water transport
- Lack of environmental buffer—short response time in event of treatment failures
- Only option for potable reuse in areas without suitable GW basin or SW reservoir
- AZ, CA, CO, FL, NM, and TX exploring guidance and regulations

Pure Water Monterey



Modified from Monterey One Water



Treatment Trains



Achieving Acceptable Risk

Operations

- 4R's
 - Reliability
 - Redundancy
 - Robustness
 - Resilience
- Monitoring surrogates for treatment process performance (TOC, UV absorbance, conductivity, etc.)
- Trained operators
- Advanced analytics

Outreach



Constituents of Emerging Concern (CECs)

- Expert advisory panel (CA)
 - Monitor selected CECs (NDMA, 1,4 dioxane, NMOR)
 - Two *in vitro* bioassays that measure endocrine active chemicals
- Source control within the “sewershed” (inspections and sampling industries)
- Public education programs (3P’s)
- Testing by utilities: For example, Orange County Water District tests for more than 500 compounds from about 1500 locations, annually
- PFAS!

Other Stories Covered

- Altamonte Springs, FL
- Austin, TX
- Castle Rock, CO
- Clayton County, GA
- Clearwater, FL
- Cloudcroft, NM
- Denver, CO
- Eastern Municipal Water District
- Grand Canyon Village
- Hampton Roads, VA
- Irvine Ranch Water District
- Redwood City, CA
- Santee/Padre Dam, CA
- San Francisco
- Australia
- Namibia
- Singapore

Questions

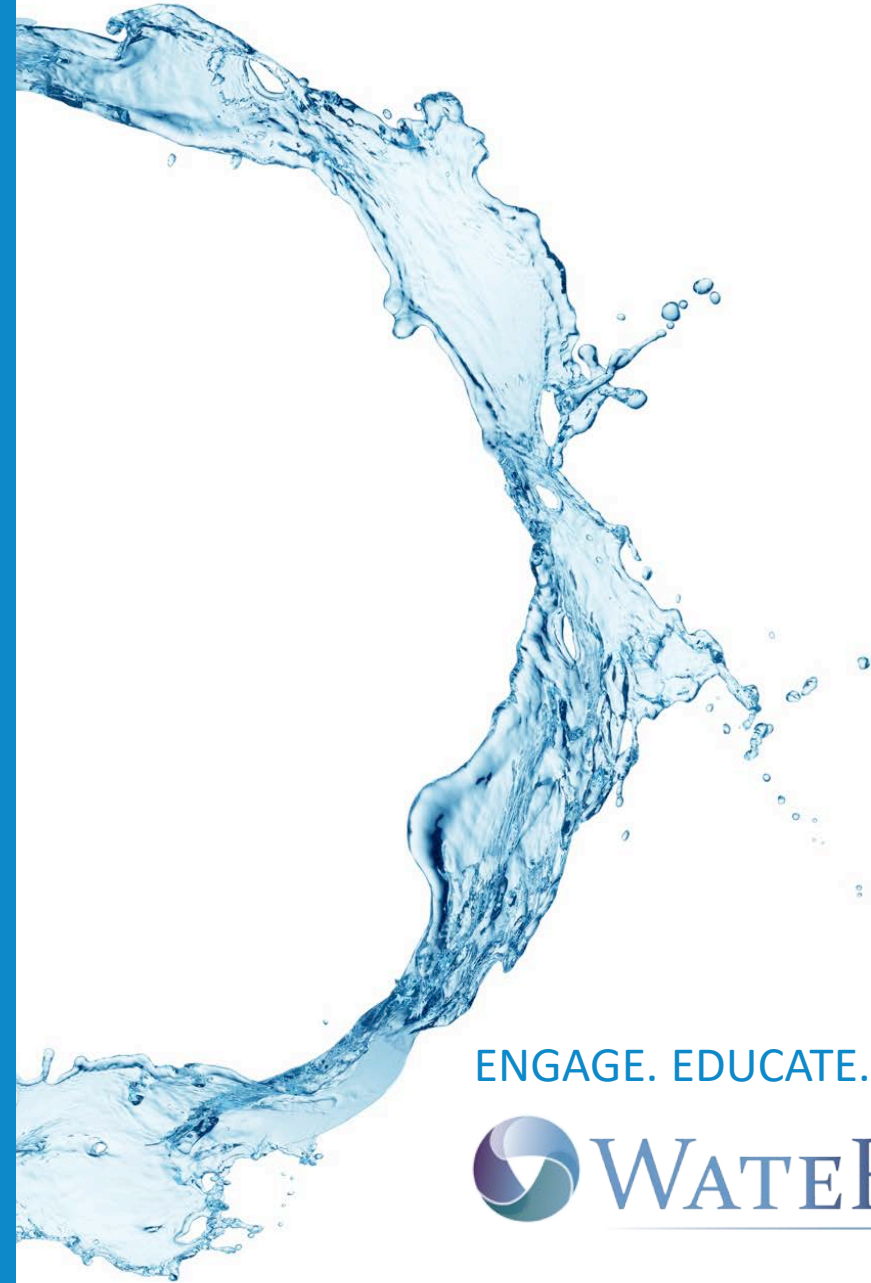


COMMUNICATION COLLABORATIVE GROUP

WRCA UPDATE

JENNIFER WEST
MANAGING DIRECTOR
WATEREUSE CALIFORNIA

AUGUST 25, 2022



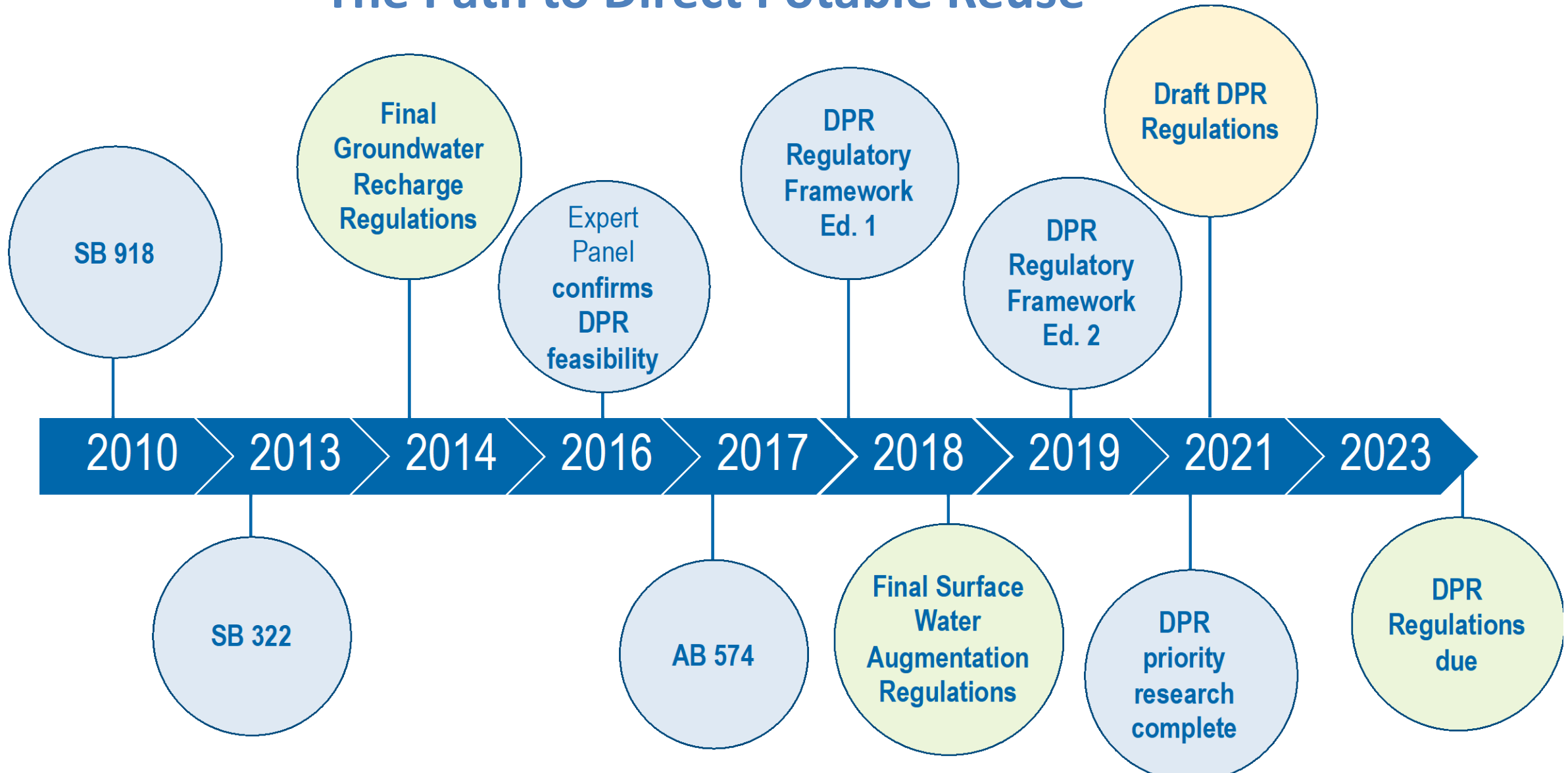
ENGAGE. EDUCATE. ADVOCATE.



A dynamic splash of water, rendered in a light blue, almost ethereal style, forms a large, irregular circular shape on the left side of the slide. The water droplets and ripples are clearly visible, giving it a sense of motion.

Legislation and Regulations

The Path to Direct Potable Reuse



AB 574 DPR EXPERT PANEL

*** Co-Chair: James Crook, PhD, PE, Environmental Engineering Consultant**

*** Co-Chair: Adam Olivieri, DrPH, PE, EOA, Inc.**

Richard Bull, PhD, Washington State University (Emeritus)

Jörg E. Drewes, PhD, Technical University of Munich

Charles Gerba, PhD, University of Arizona

Charles Haas, PhD, Drexel University

Amy Pruden, PhD, Virginia Tech

Joan Rose, PhD, Michigan State University

Shane Snyder, PhD, Nanyang Technological University

Jacqueline E. Taylor, REHS, MPA, Director, Environmental Protection Branch, Los Angeles County Department of Public Health (Retired)

George Tchobanoglous, PhD, PE, University of California, Davis (Emeritus)

Michael P. Wehner, MPA, Orange County Water District (Retired)



WRCA Requested DPR Reg. Changes

- **Expand Alternative Clause – Same as other regs**
- **Pathogen Removal Requirement – Use DPR #2 Research**
- **Sewershed online monitoring – Just at headworks of plant**
- **Use CEC Monitoring from Recycled Water Policy**
- **Streamline reporting TMF requirements**



A dynamic splash of water, rendered in a light blue, semi-transparent style, forms a large, irregular circular shape on the left side of the slide. The water droplets and ripples are clearly visible, giving it a sense of motion.

Funding -- Legislation

Drought Package --Recycled Water Funding

- \$165 million (2021) + \$50 million (2022)= \$215 Million Statewide
- \$50 million (2021) for City of San Diego
- Seeking \$750 million statewide
 - Seeking “Large Project” Funding Separate from Statewide
- Last week LAT -- "\$500 million in state funding would be a smart investment not just for residents of L.A. but for the entire state."



Advanced Registration Closes September 2!



A dynamic splash of water, rendered in various shades of blue, forms a circular shape on the left side of the slide. The water droplets and ripples are clearly visible, giving it a sense of motion.

Questions?

IN COLLABORATION WITH
THE WATER RESEARCH
FOUNDATION

WATERREUSE[®] 2023 SYMPOSIUM

MARCH 5-8, 2023 • MARRIOTT MARQUIS ATLANTA
ATLANTA, GA

REIMAGINING
WATER
TOGETHER



Call for Presentations

-  Open through Sept 30, 2022
-  Thought leaders & young professionals encouraged to submit

submit online at
watereuse.org/symposium





TOOL TIME: NEW POWERPOINT RESOURCES YOU NEED TO USE



Mackenzie Morris
Soquel Creek Water District





RECORDING A PRESENTATION





AutoSave ☐ Off | sample • Saved to this PC | Search (Alt+Q) | Rebecca Rubin | | | |

File Home Insert Draw Design Transitions Animations Slide Show Record Review View Help Acrobat

Preview | From Beginning | From Current Slide | Screen Recording | Audio | Clear Recording | Save as Show | Export to Video | Learn More

Record | | Share



The image is a screenshot of a video player interface. At the top, there is a dark control bar with buttons for '< Edit', a timer at '00:00 / 00:00', a red recording button, a pause button, a microphone icon, and an 'Export >' button. On the far right of the top bar are icons for help, a list, and a close button. The main area of the player shows a presentation slide. The slide has a dark gray background with a close-up image of a dog's face. Overlaid on the image is the text 'DOGS ARE THE BEST' in large, bold, white capital letters. Below this, in smaller white capital letters, is the text '10 REASONS DOGS MAKE THE BEST PETS'. At the bottom of the slide, there is a small row of icons for navigation. Below the slide, the video player's bottom control bar is visible. It includes a back button, a progress bar labeled 'Slide 1 of 3', a forward button, a toolbar with various drawing tools (pen, eraser, highlighter, etc.), a color palette with 12 color swatches, a user profile icon with a dropdown arrow, and a 'Views' button with a dropdown arrow.

A screenshot of a video player interface. The top bar includes controls for editing, a timer at 00:00/00:00, a red recording button, a microphone icon, and an export button. The main content area displays a presentation slide with a dark background and a close-up image of a dog's face. The slide text reads "DOGS ARE THE BEST" in large white letters, with "10 REASONS DOGS MAKE THE BEST PETS" in smaller text below it. The bottom bar shows navigation arrows, "Slide 1 of 3", a color palette, a user profile icon, and a "Views" dropdown menu.

A close-up, black and white photograph of a dog's face, looking directly at the camera with large, expressive eyes. The dog has dark fur and floppy ears. The background is a solid, light gray.

DOGS ARE THE BEST

10 REASONS DOGS MAKE THE BEST PETS

© 2023 All rights reserved. | [Privacy Policy](#) | [Terms of Service](#)

A close-up, black and white photograph of a dog's face, looking directly at the camera with large, expressive eyes. The dog has a dark coat with some lighter patches around its eyes. The background is a solid, dark gray.

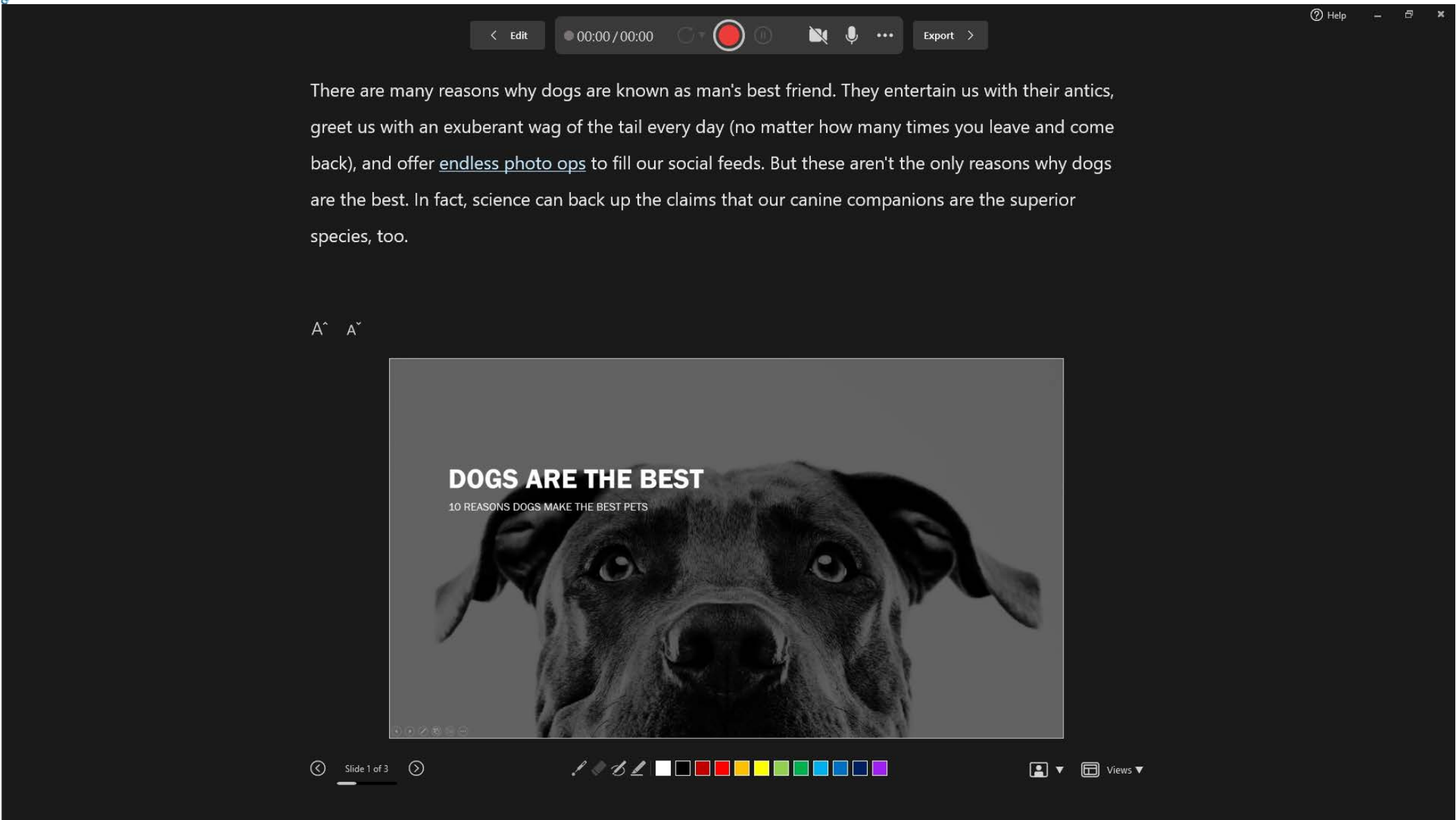
DOGS ARE THE BEST

10 REASONS DOGS MAKE THE BEST PETS

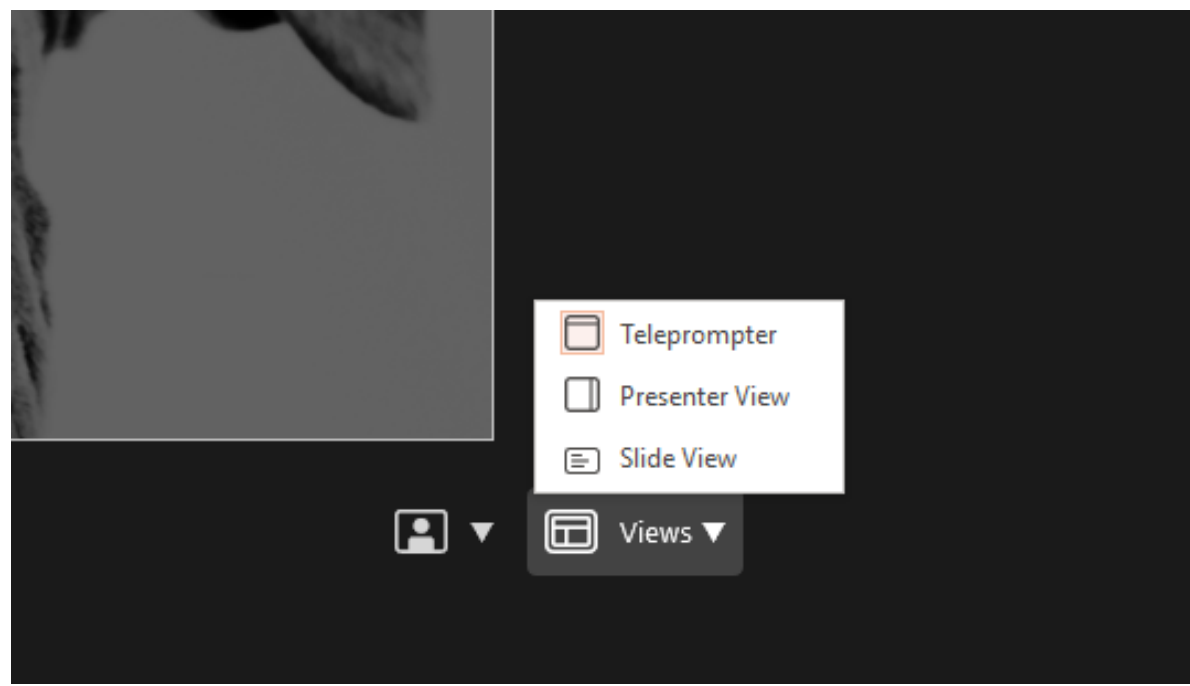
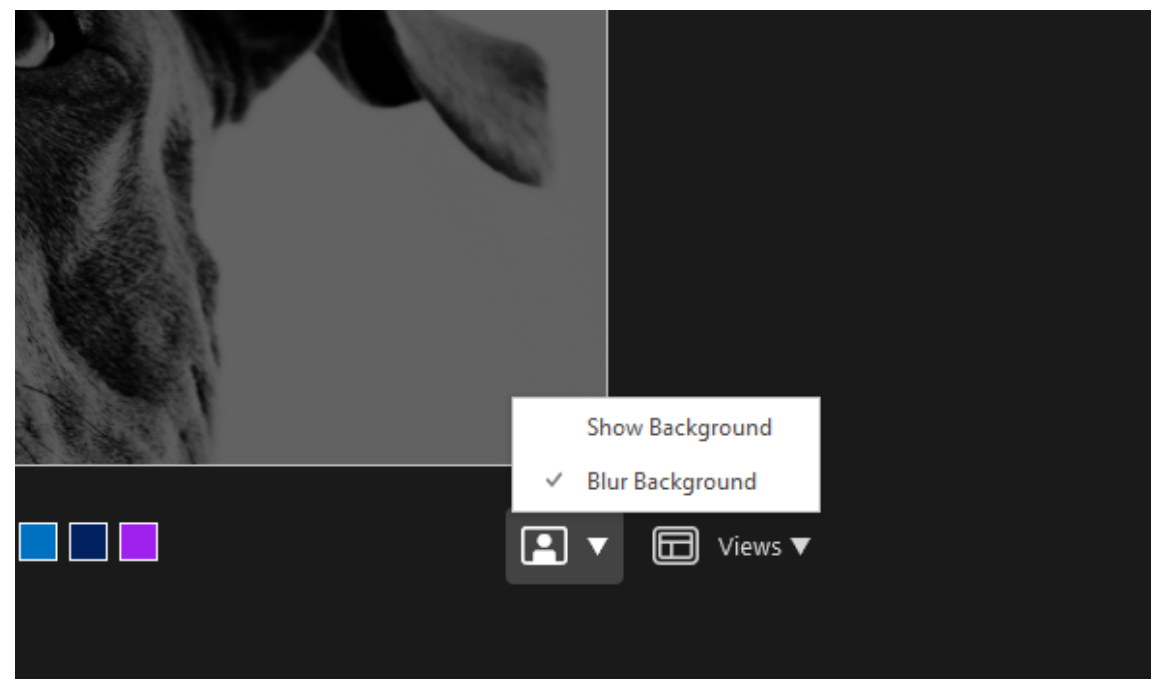
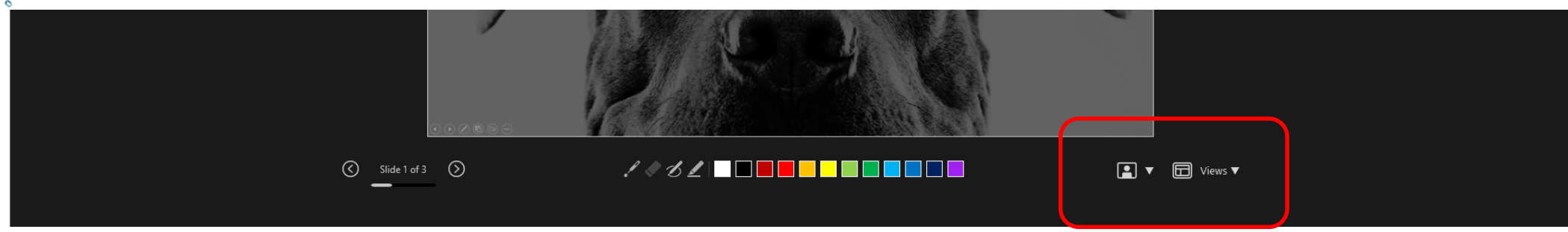
🐾 🐕 🐶 🐩 🐺 🐕 🐶 🐩 🐺 🐕 🐶 🐩 🐺



A screenshot of a video player interface. The top bar includes controls for editing, a timer at 00:00/00:00, a red recording button, a microphone icon, and an export button. The main content area displays a presentation slide with a dark background and a close-up image of a dog's face. The slide text reads "DOGS ARE THE BEST" in large white letters, with "10 REASONS DOGS MAKE THE BEST PETS" in smaller text below it. The bottom of the video player shows a navigation bar with a back button, "Slide 1 of 3", a forward button, a color palette, and a "Views" dropdown menu.




A screenshot of a video player interface. The top bar includes controls for editing, a timer at 00:00/00:00, a red recording button, a microphone icon, and an export button. The main content area displays a presentation slide with a dark background and a close-up image of a dog's face. The slide text reads "DOGS ARE THE BEST" in large white letters, with "10 REASONS DOGS MAKE THE BEST PETS" in smaller text below it. The bottom bar shows navigation arrows, "Slide 1 of 3", a color palette, a user profile icon, and a "Views" dropdown menu.








< Edit


00:00 / 00:00











Export >

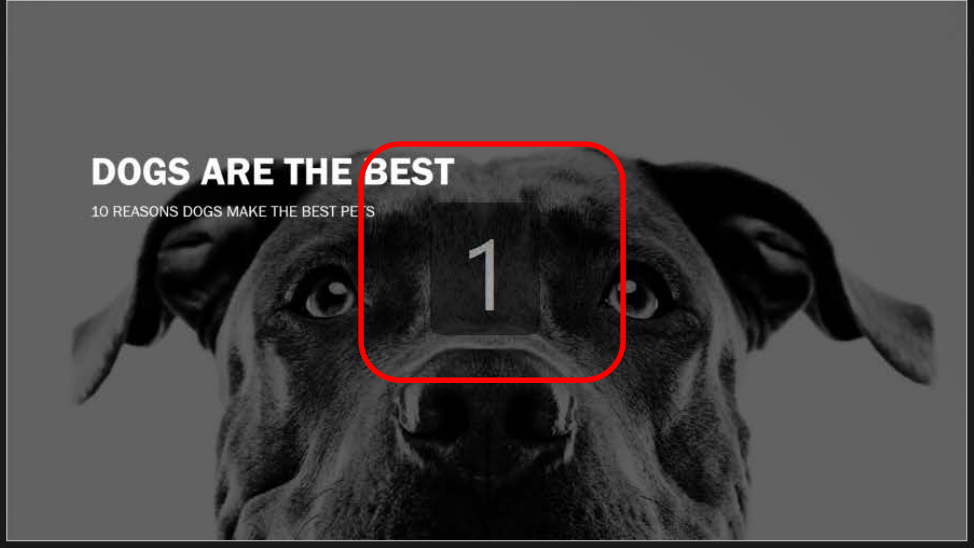
There are many reasons why dogs are known as man's best friend. They entertain us with their antics, greet us with an exuberant wag of the tail every day (no matter how many times you leave and come back), and offer endless photo ops to fill our social feeds. But these aren't the only reasons why dogs are the best. In fact, science can back up the claims that our canine companions are the superior species, too.

A⁺ A⁺










DOGS ARE THE BEST


10 REASONS DOGS MAKE THE BEST PETS






1



< Slide 1 of 3 >



 Views ▾



Retake recording



as reasons why dogs are known as man's best friend. They exuberant wag of the tail every day (no matter how many endless photo ops to fill our social feeds. But these are that, science can back up the claims that our canine companions are the superior

antics, come dogs

Microphone

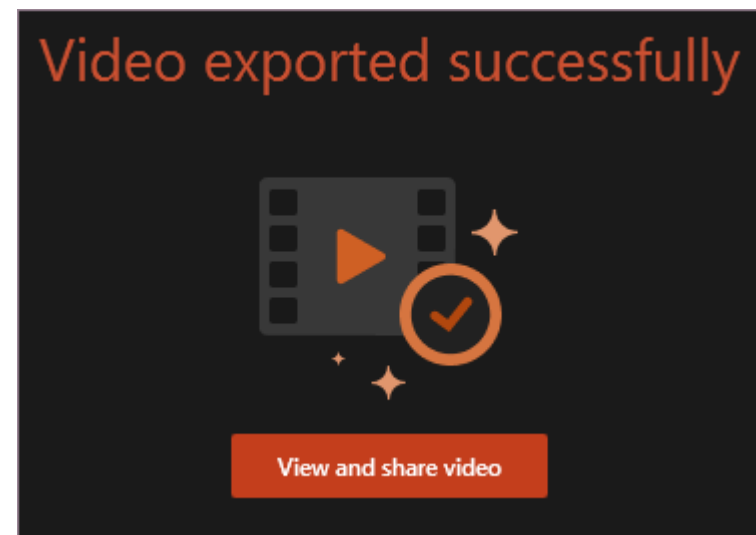
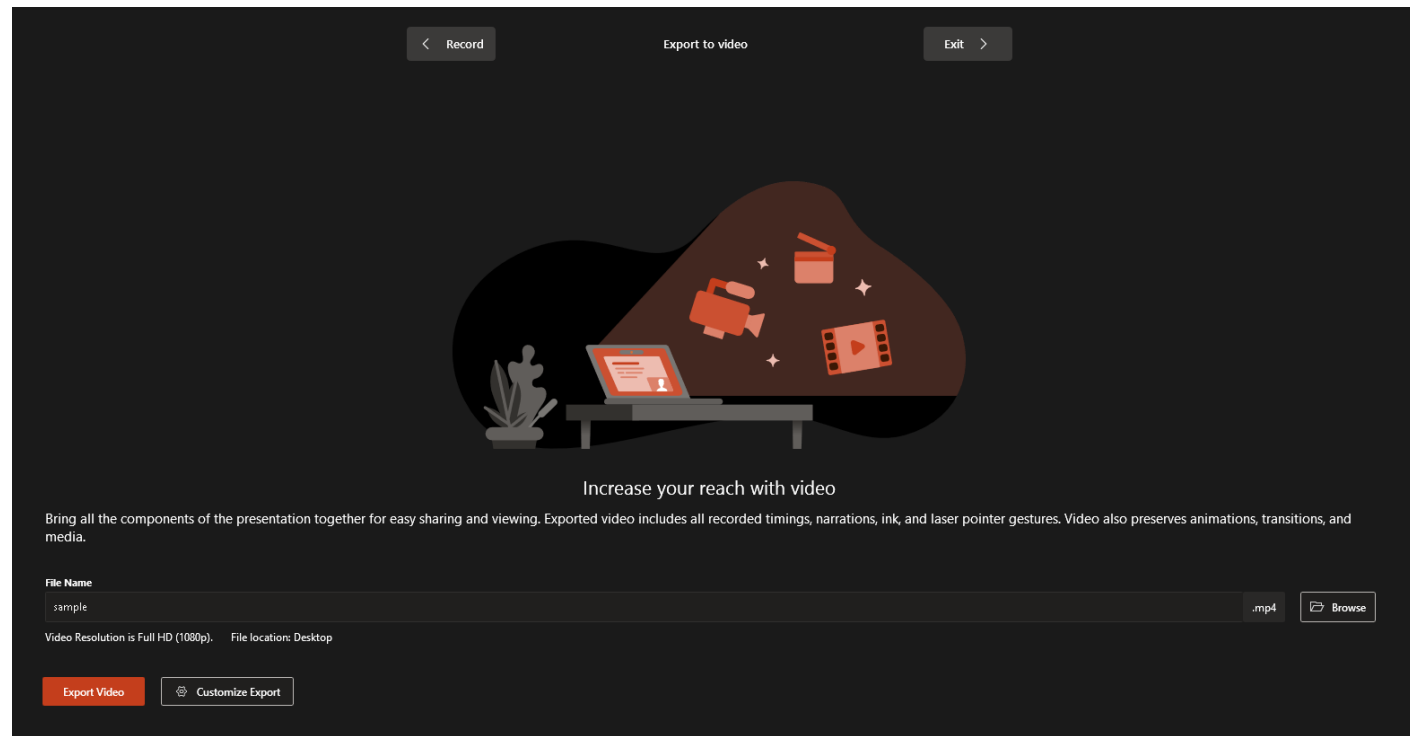
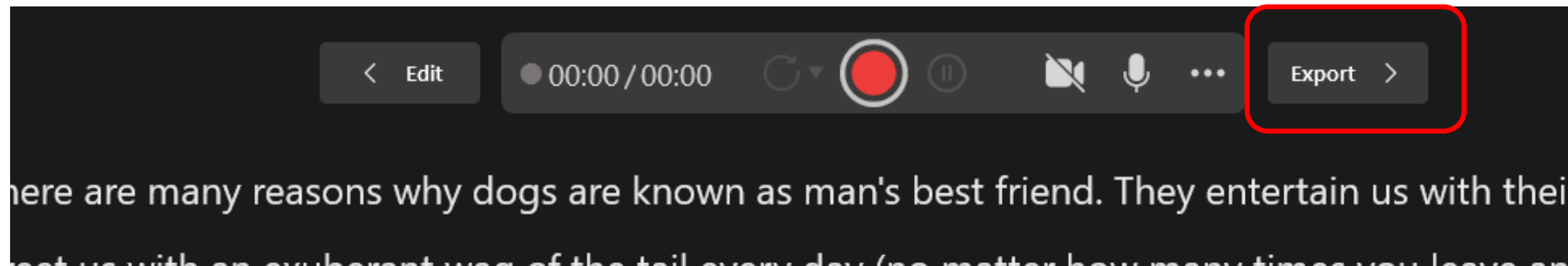
- Microphone (HD Pro Webcam C920) >

Camera

- HD Pro Webcam C920 >

Clear Recordings

- On Current Slide
- On All Slides





AutoSave ☐ Off sample • Saved to this PC Rebecca Rubin

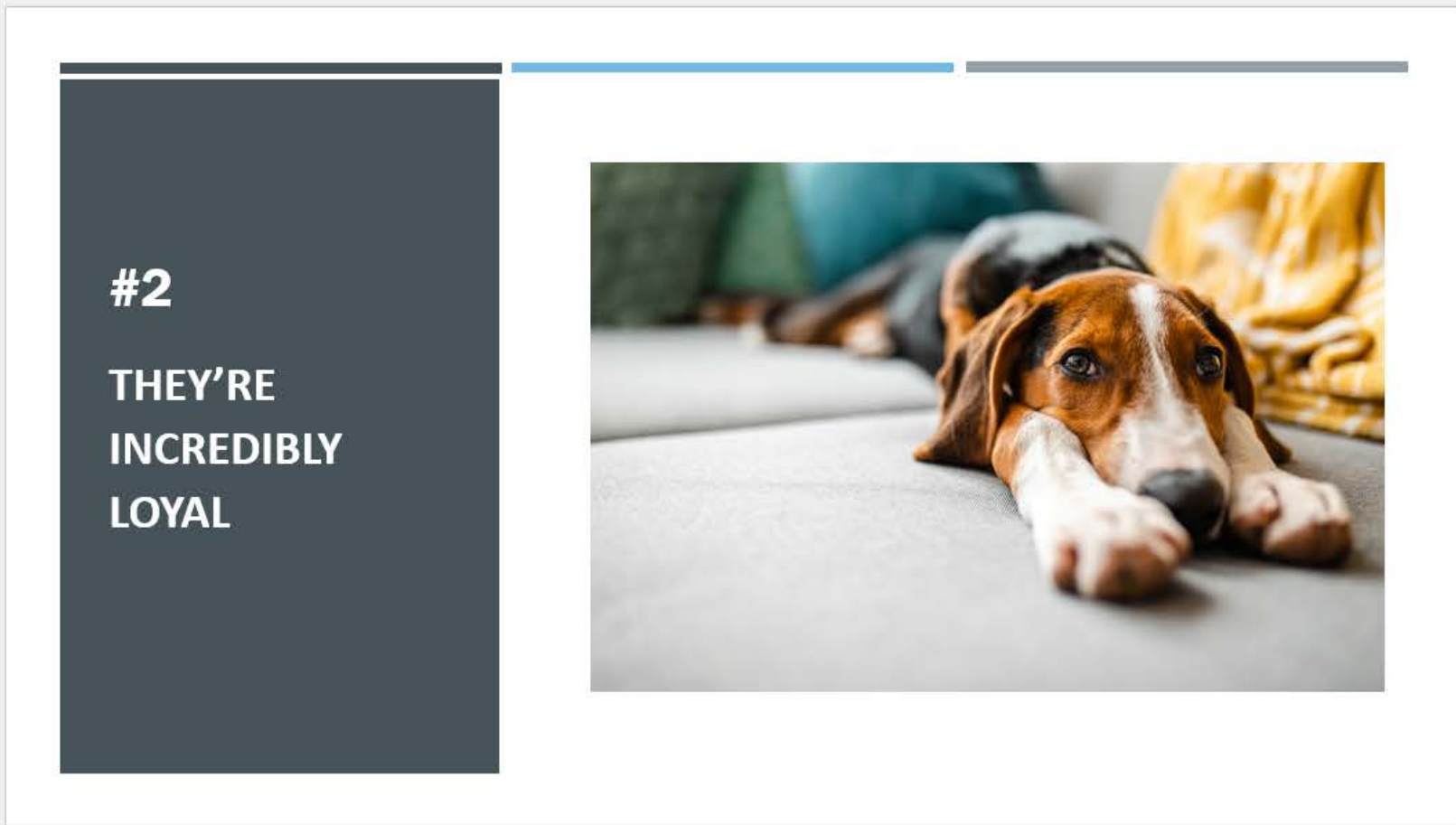
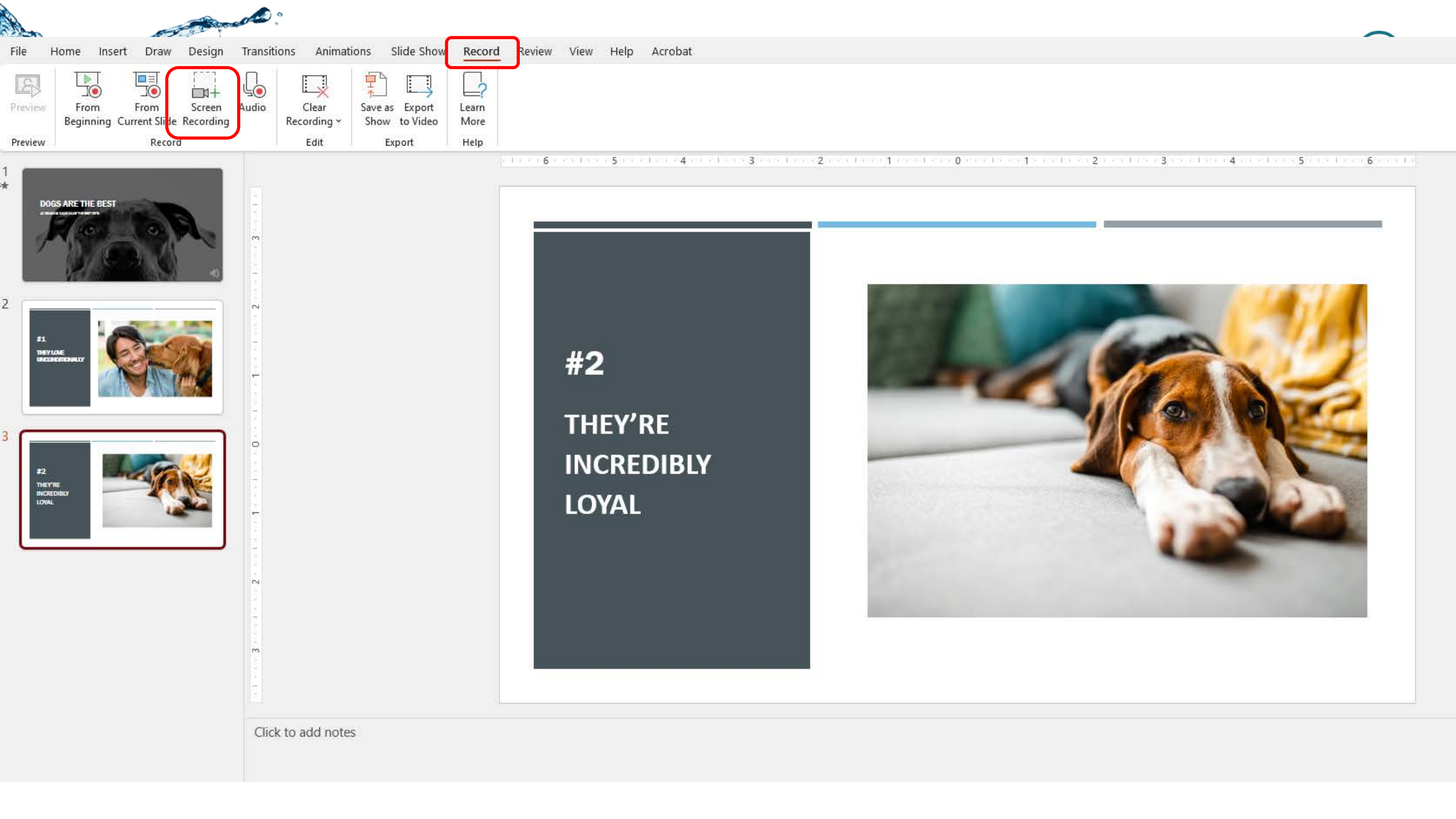
File Home Insert Draw Design Transitions Animations Slide Show Record Review View Help Acrobat

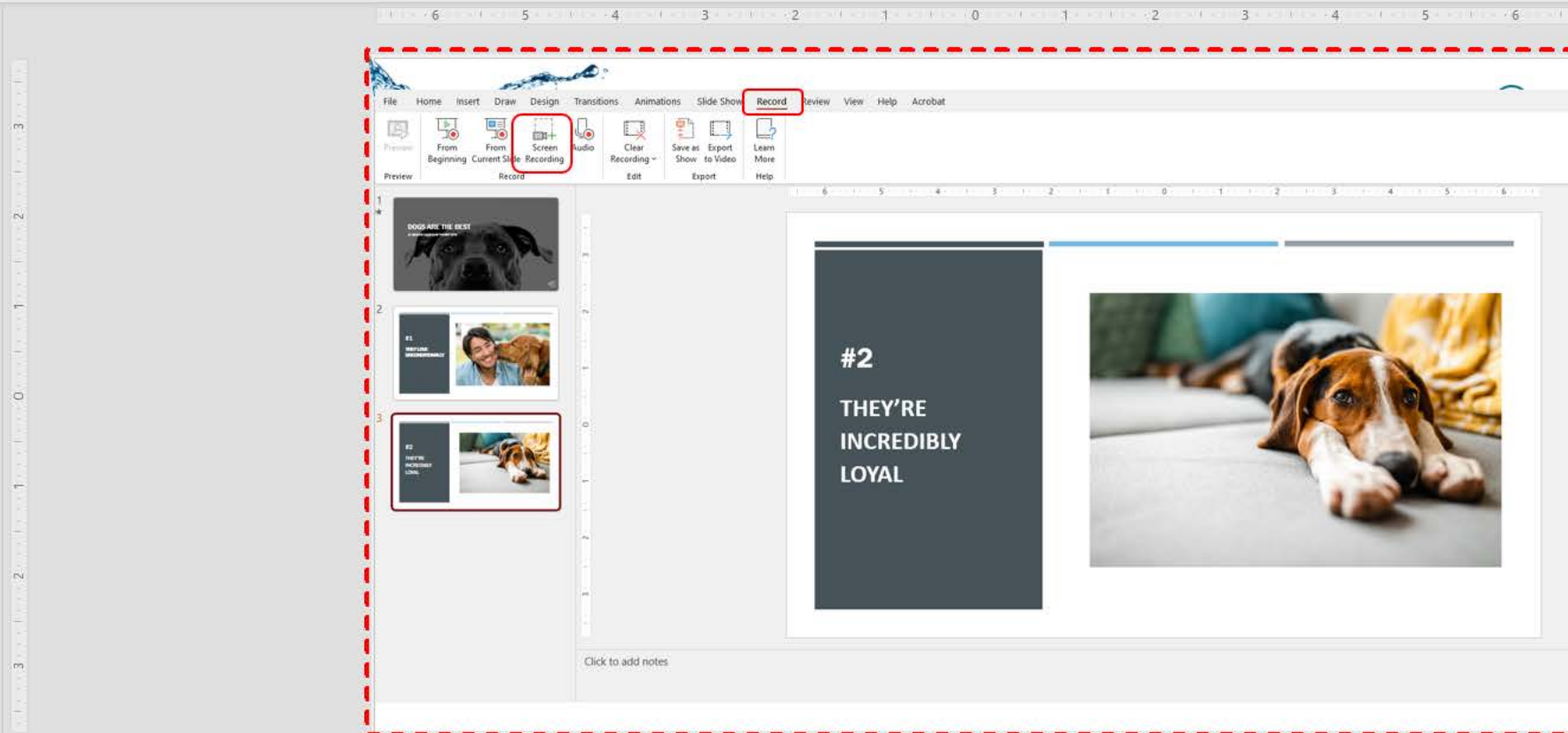
Preview	From Beginning	From Current Slide	Screen Recording	Audio	Clear Recording	Save as Show	Export to Video	Learn More
Preview	Record				Edit	Export		Help



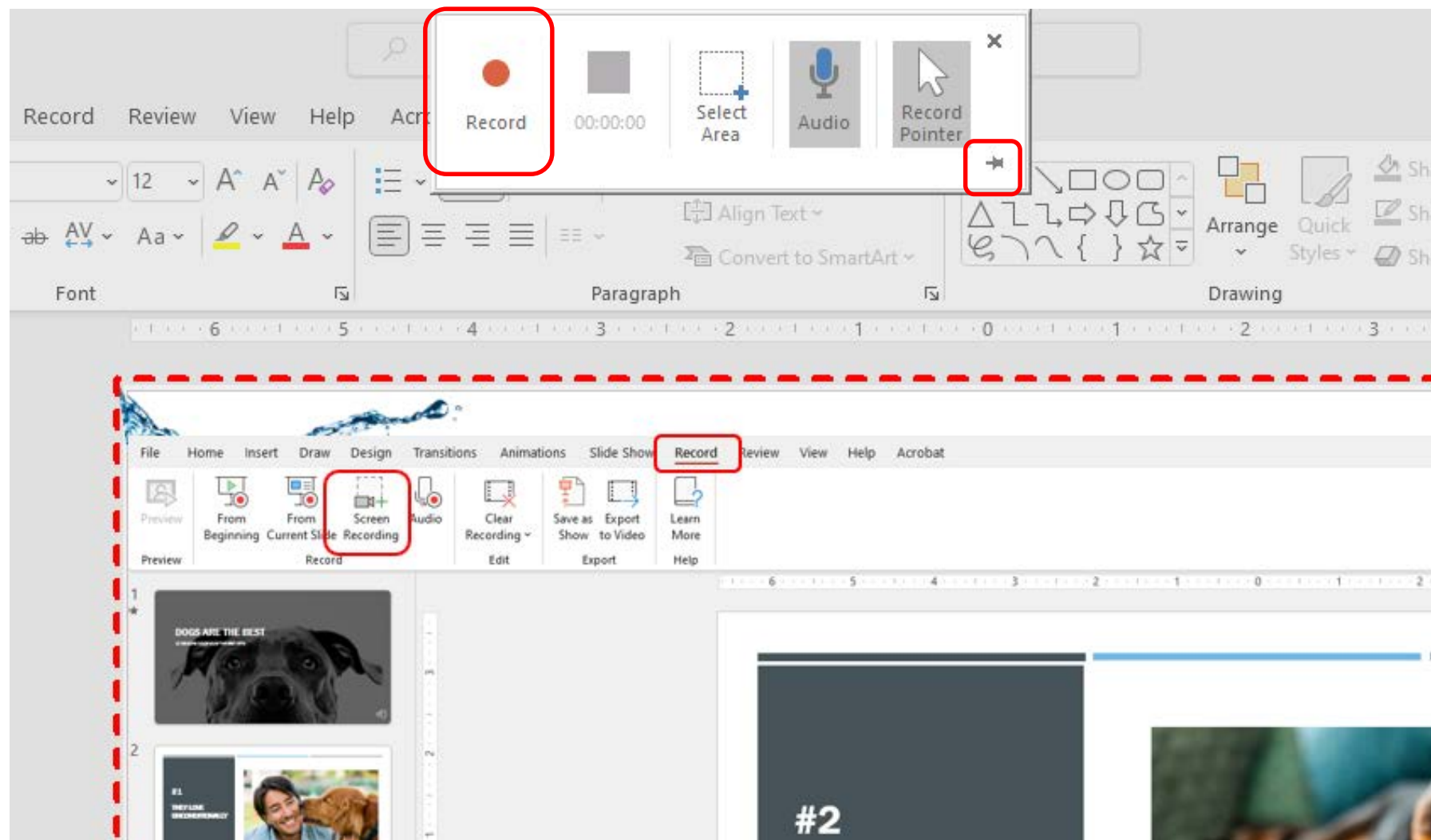
SCREEN RECORDING







- Slide 11 of 11 Accessibility: Investigate



Layout

Reuse Slides

Reset

Section

Font

Paragraph

Drawing

Editing

Designer

Find

Replace

Select

Create and Share Adobe PDF

Dictate

Design Ideas

6

5

4

3

2

1

0

1

2

3

4

5

6

#2

THEY'RE INCREDIBLY LOYAL

Style

Trim

Start

New Comment

Saved to this PC

In Click Sequence

Automatically

When Clicked On

00:00.00



Saved to this PC

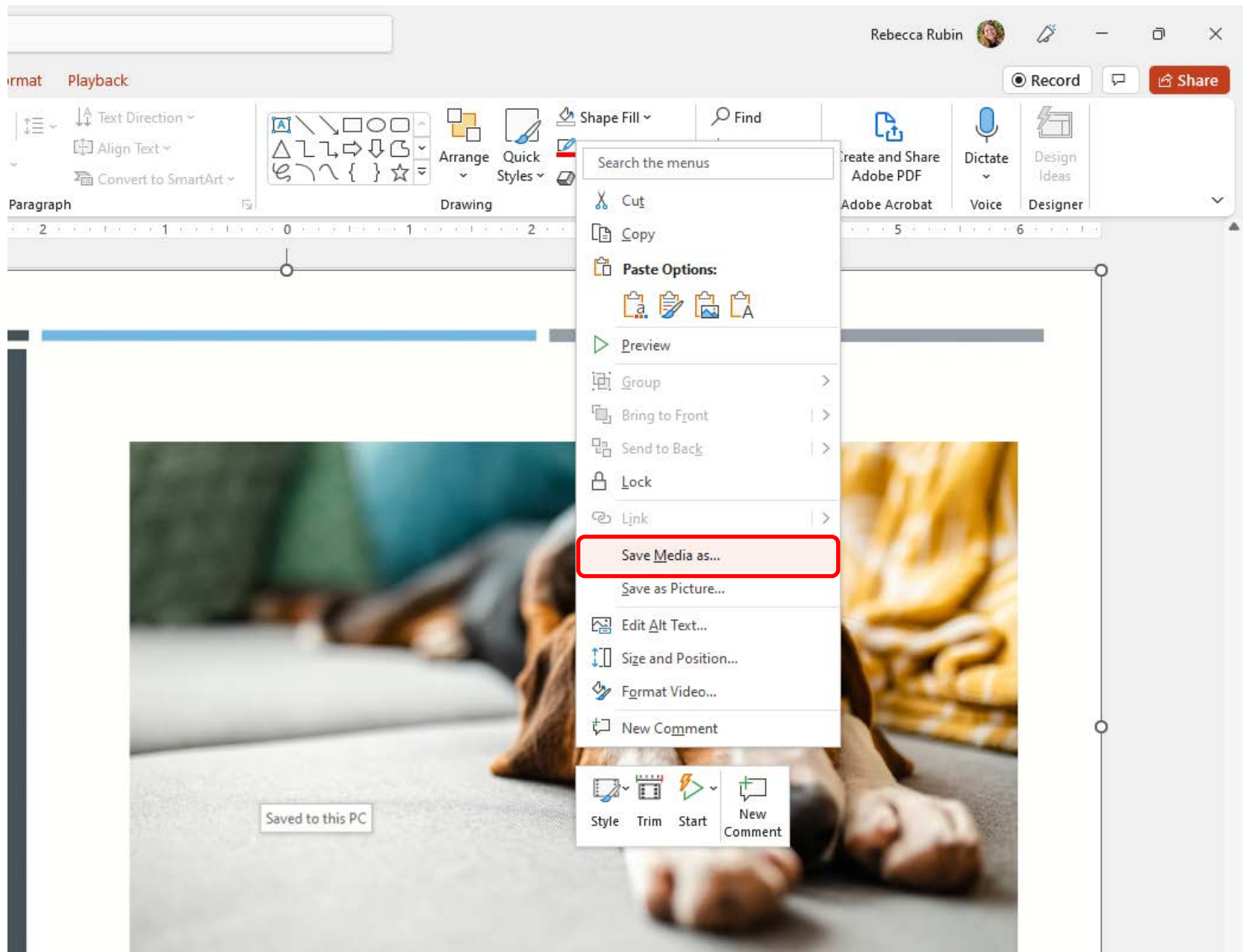
Style Tim Start New Comment

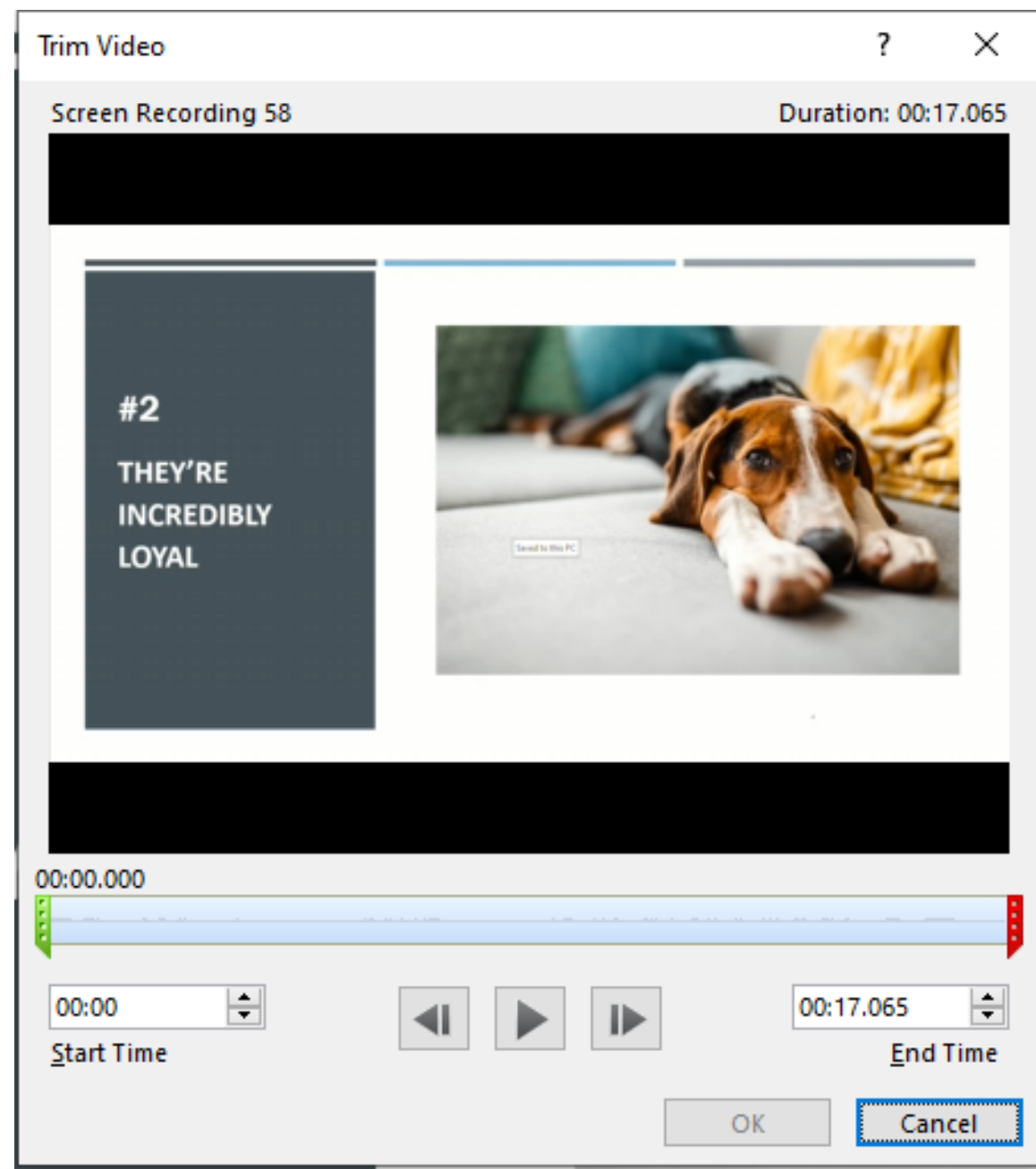
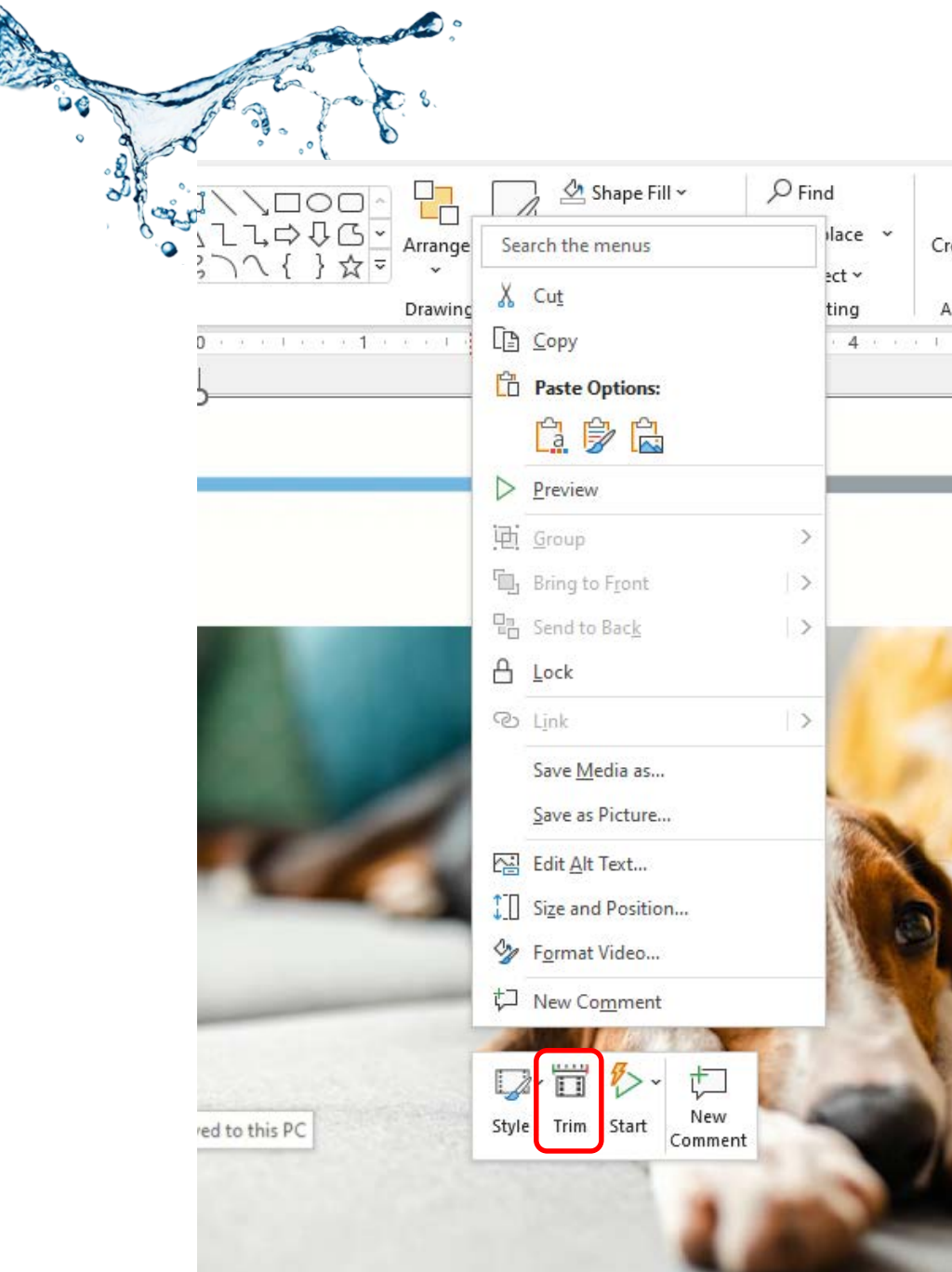
Subtle

Moderate

Notes 108% 12:19 PM 8/22/2022

The image shows a Beagle dog lying down on a grey surface. A presentation software interface is overlaid on the image. A red rectangle highlights the 'Style' button in the top toolbar. Below the toolbar, a 'Style' menu is open, showing two categories of background themes: 'Subtle' and 'Moderate'. Each category contains five landscape-themed icons. The 'Notes' application is visible at the bottom of the screen, showing a 108% zoom level and the time 12:19 PM on 8/22/2022.







cute beagle





ROUNDTABLE DISCUSSION



Gina Ayala,
Orange County Water District





Thank you
for participating!

