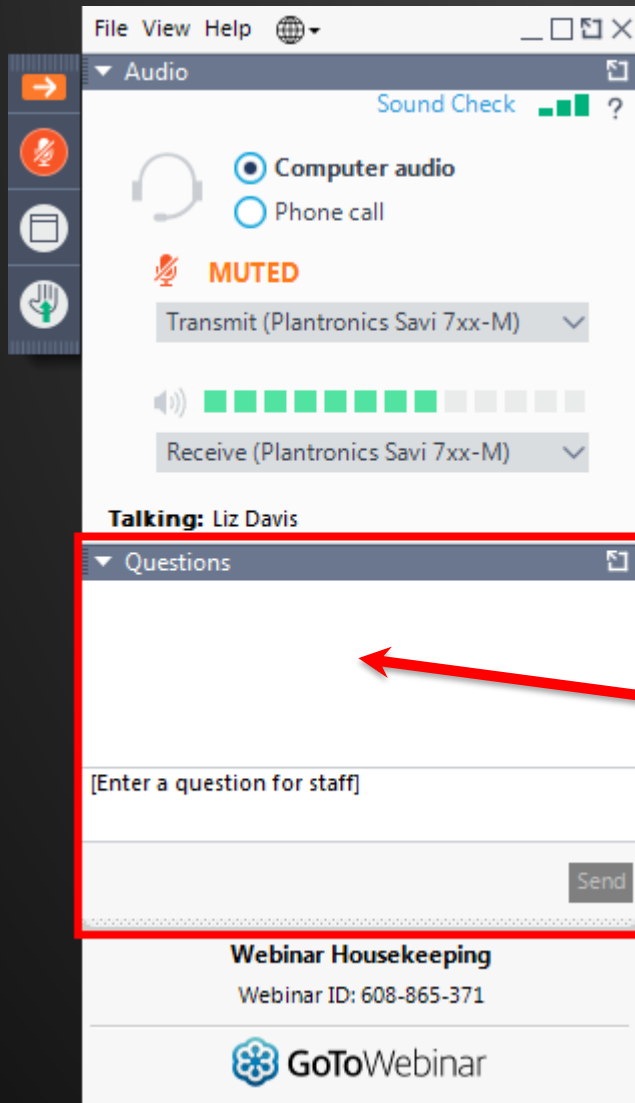




**Water Environment
Federation®**
the water quality people®

How to Participate Today



- Audio Modes
 - Listen using Mic & Speakers
 - Or, select “Use Telephone” and dial the conference (please remember long distance phone charges apply).
- Submit your questions using the Questions pane.
- A recording will be available for replay shortly after this webcast.



Taking the Plunge: Educating the Public on Science-Based Solutions & Clean Water Careers

Communicate, educate, protect.

Our future depends on it

Who we are



Marilyn Hall

Athens-Clarke County Public Utilities (GA)
Water Resources Planner



Eddie Abisaab

Hampton Roads Sanitation District (VA)
Project Manager - Design & Construction



Steve Hill

Alexandria Renew (VA)
Construction Programs
Coordinator



Jennifer Loudon

Raritan Township Municipal Utilities (NJ)
WW Facility Lab Manager



Amanda Scott

Suez Water Technologies & Solutions (CO)
Global Product Manager



Paige Lux

Weston & Sampson (SC)
Project Engineer

~~Fake News~~

Real Facts!

The Importance of
Communicating Science-
Based Information



Marilyn Hall
Athens-Clarke County Public Utilities (GA)
Water Resources Planner

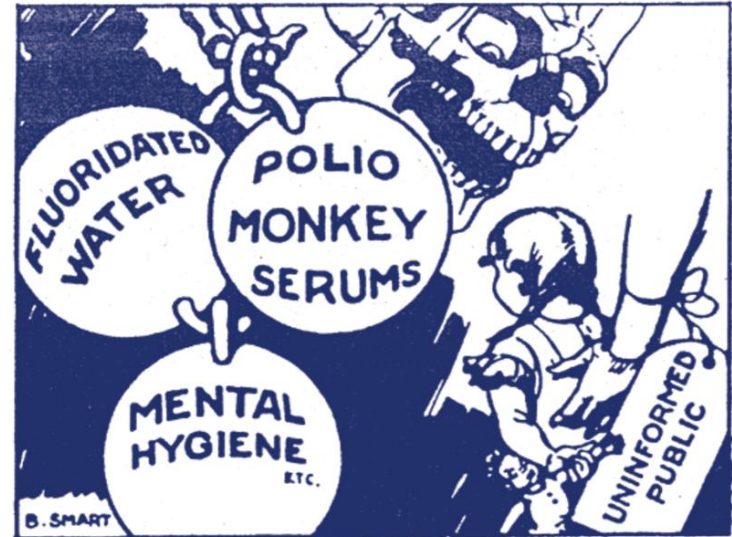
Fluoridation

“Water containing Fluorine (rat poison - no antidote) is already the only water in many of our army camps, making it very easy for saboteurs to wipe out an entire camp personel*. If this happens, every citizen will be at the mercy of the enemy - already within our gates.”

Source: "At the Sign of the UNHOLY THREE", a flier first issued in 1955 to promote fluoridation, vaccinations, and mental health treatment as a communist plot to destroy the U.S.A.

*Misspelling in original flyer.

At the Sign of THE UNHOLY THREE



Are you willing to PUT IN PAWN to the UNHOLY THREE all of the material, mental and spiritual resources of this GREAT REPUBLIC?

FLUORIDATED WATER

1—Water containing Fluorine (rat poison—no antidote) is already the only water in many of our army camps, making it very easy for saboteurs to wipe out an entire camp personel. If this happens, every citizen will be at the mercy of the enemy—already within our gates.

POLIO SERUM

2—Polio Serum, it is reported, has already killed and maimed children; its future effect on minds and bodies cannot be gauged. This vaccinè drive is the entering wedge for nation-wide socialized medicine, by the U. S. Public Health Service, (heavily infiltrated by Russian-born doctors, according to Congressman Clare Hoffman.) In enemy hands it can destroy a whole generation.

MENTAL HYGIENE

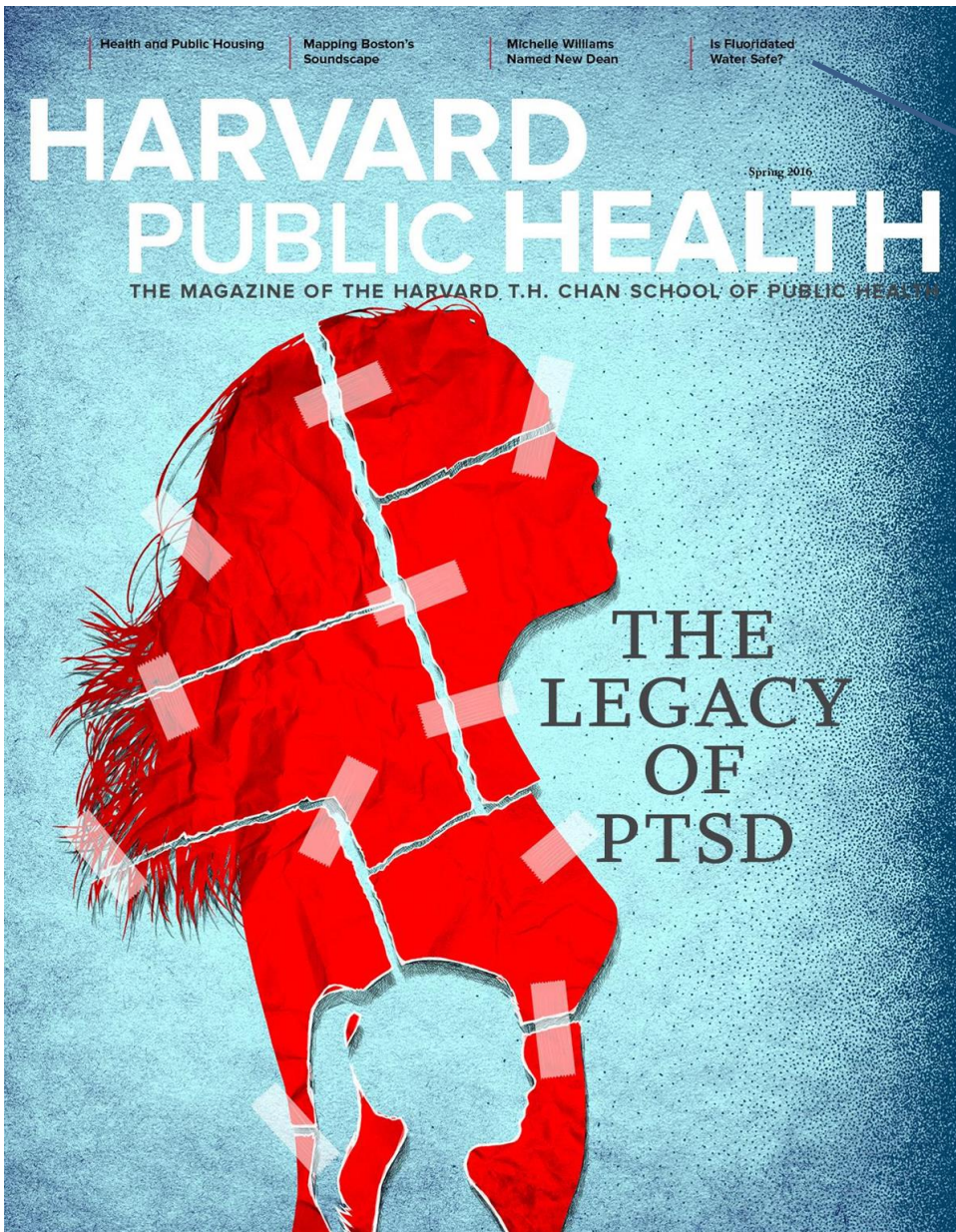
3—Mental Hygiene is a subtle and diabolical plan of the enemy to transform a free and intelligent people into a cringing horde of zombies.

Rabbi Spitz in the American Hebrew, March 1, 1946: "American Jews must come to grips with our contemporary anti-Semites; we must fill our insane asylums with anti-Semitic lunatics."

FIGHT COMMUNISTIC WORLD GOVERNMENT by destroying THE UNHOLY THREE!!! It is later than you think!

KEEP AMERICA COMMITTEE
Box 3094, Los Angeles 54, Calif. H. W. Courtols, Secy.

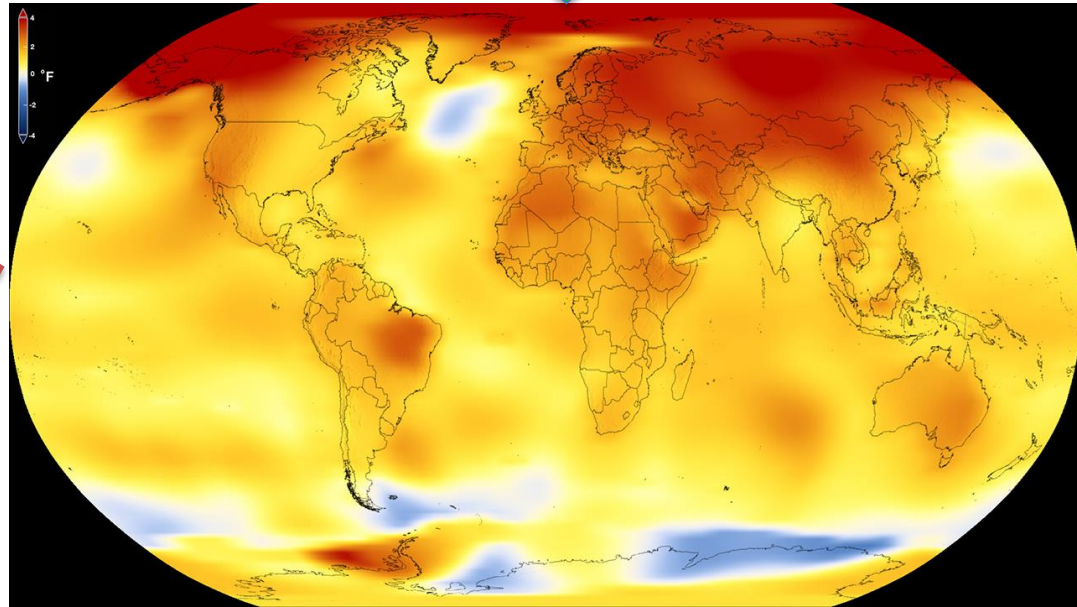
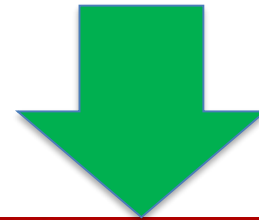
May 16, 1955



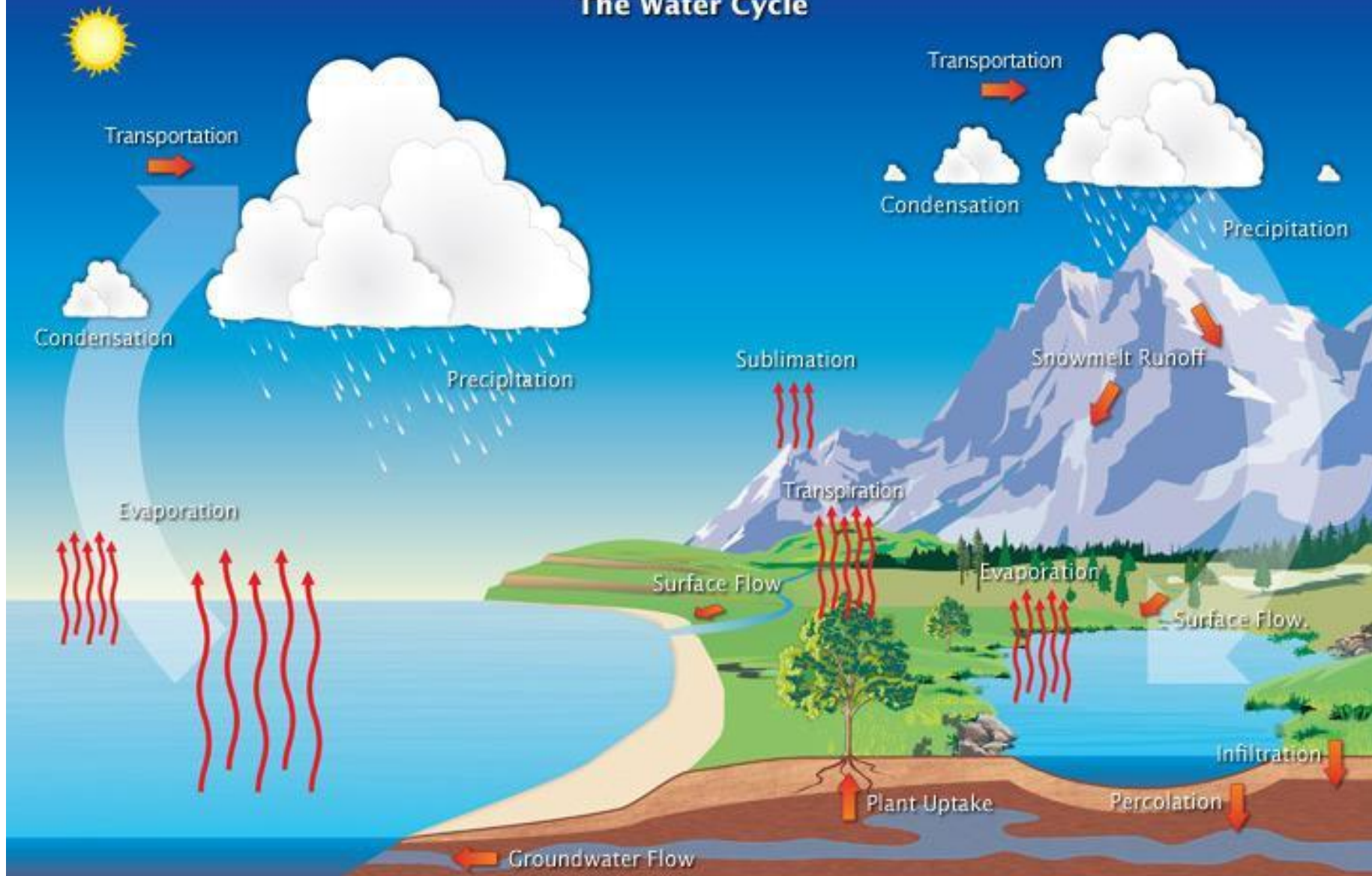
Selection of organizations who submitted letters critical of the article:

- American Academy of Pediatrics
- American Dental Association
- American Public Health Association
- Dean of the Harvard School of Dental Medicine
- American Association for Dental Research

Climate Change



The Water Cycle



Source: <https://pmm.nasa.gov/science/global-water-cycle>

Impacts of Climate Change - Drought



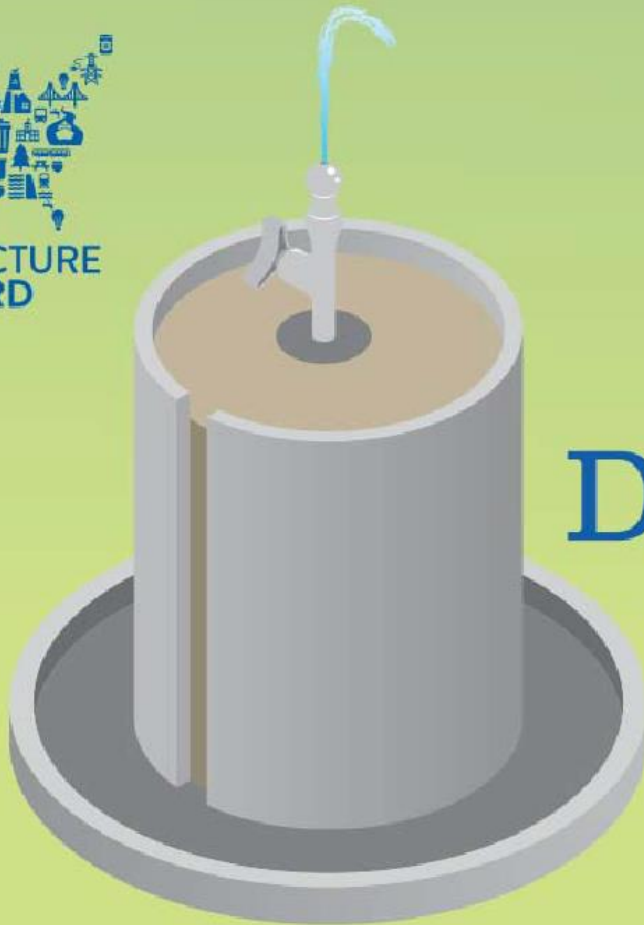
Impacts of Climate Change - Floods



Source: Atlanta Journal Constitution file by Glenn Dyke, Special

Impacts of Climate Change - Algal Blooms





Drinking Water

6 billion gallons of
treated water lost every day



2017
INFRASTRUCTURE
REPORT CARD
ASCE

Wastewater



Demand on treatment plants will grow more than 23% by 2032



The Solution, as recommended by ASCE in Infrastructure Report Card Report

- Dedicate more money to solve the problem
 - State Revolving Fund
 - WIFIA
 - Revisit affordability guidelines
 - Fund land and water protection for source-water protection
- Raise awareness of the true cost of treatment and conveyance.
- Support Green Infrastructure
- Think regionally when planning water supplies

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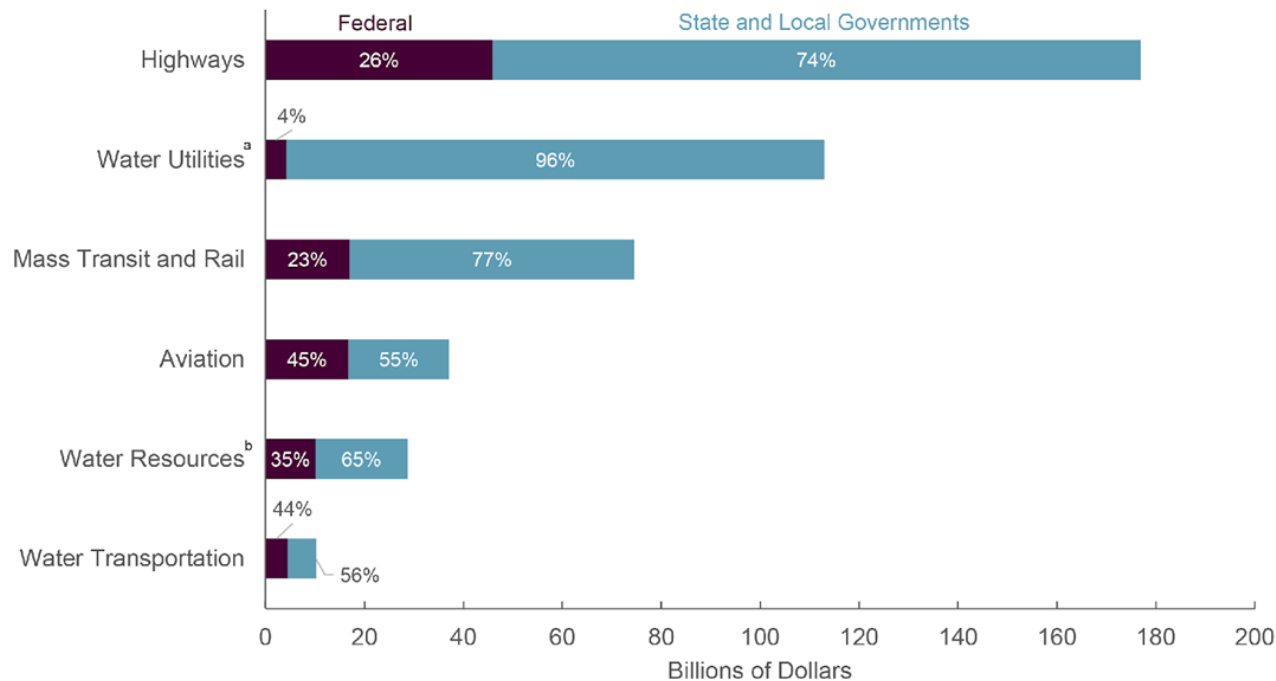
Where does the money come from?



Source: Athens-Clarke County (left) and Atlanta Journal Constitution, Ben Gray (right)

Where does the money come from?

The Federal Government's and State and Local Governments' Spending on Transportation and Water Infrastructure, by Type of Infrastructure, 2017



Source: Congressional Budget Office, using data from the Office of Management and Budget and the Census Bureau.

a. Includes water supply and wastewater treatment facilities.

b. Includes water containment systems (dams, levees, reservoirs, and watersheds) and sources of freshwater (lakes and rivers).

Source: U.S. Congressional Budget Office, *Public Spending on Transportation and Water Infrastructure*



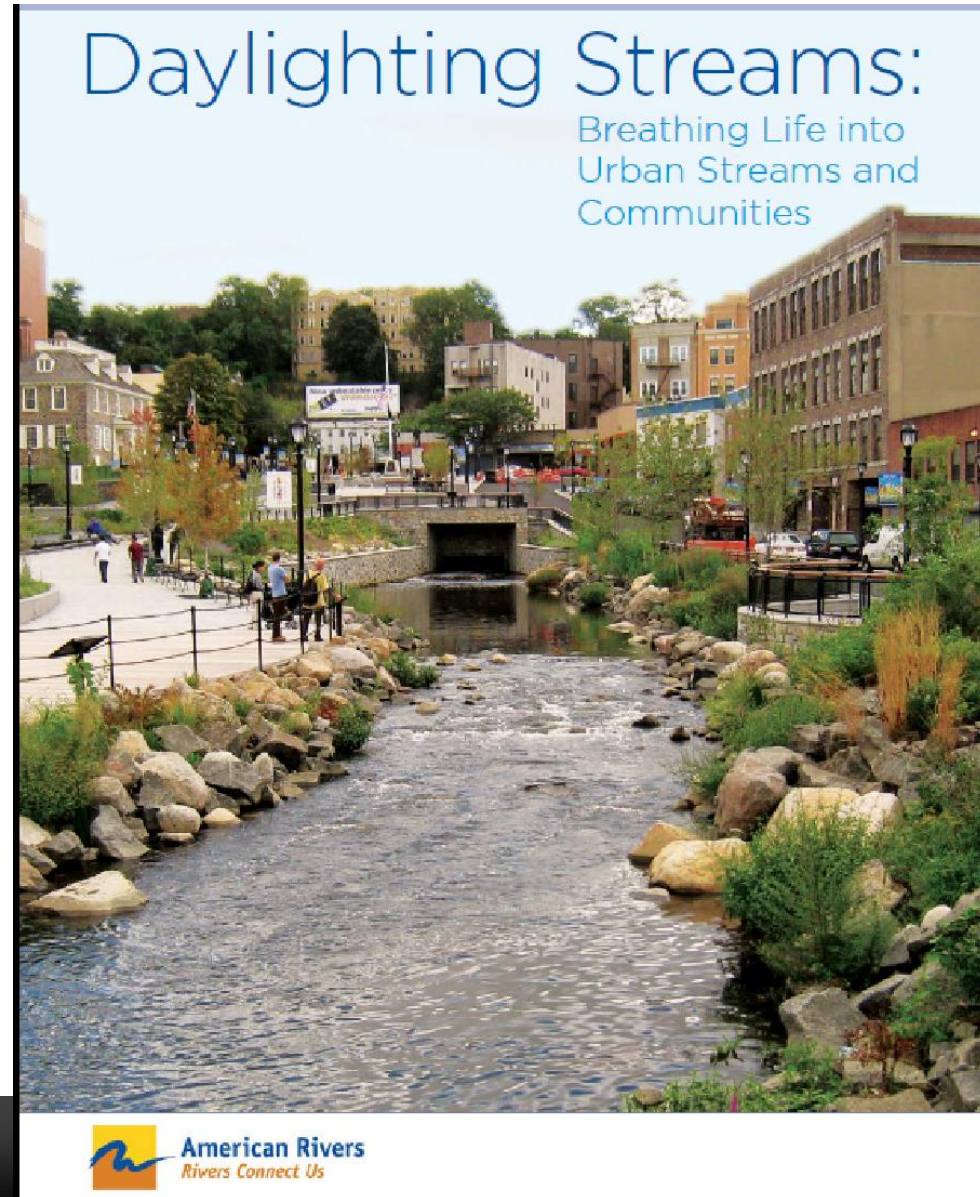
Source: The Oregonian/OregonLive, Updated Jan 10, 2019; Posted Apr 22, 2011

Repairing and Building Public Trust

Daylighting and transparency

Collaboration

Commitment to public education and outreach



Repairing and Building Public Trust

Daylighting and transparency

Collaboration

Commitment to public education and outreach



Additional Resources

CDC Climate Effects on Health

<https://www.cdc.gov/climateandhealth/effects/default.htm>

Water Environment Federation on Climate Change

<https://www.wef.org/resources/topics/browse-topics-a-n/climate-change/>

American Planning Association Water and Planning Network

<https://www.linkedin.com/groups/8596612/>

American Rivers Daylighting Streams

http://americanrivers.org/wp-content/uploads/2016/05/AmericanRivers_daylighting-streams-report.pdf

ASCE Infrastructure Report Card

<https://www.infrastructurereportcard.org/americas-grades/>

EPA Integrated Planning

<https://www.epa.gov/npdes/integrated-planning-community-case-studies>

Communicating with the Public

Strategies to encourage trusting
science-based solutions

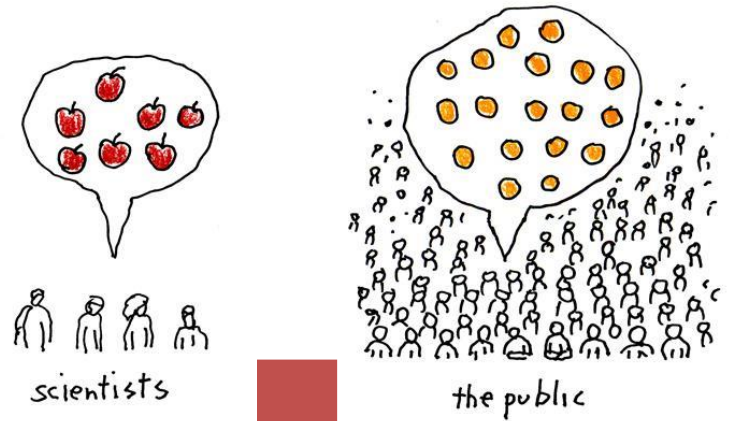


Eddie Abisaab
Hampton Roads Sanitation District (VA)
Project Manager - Design & Construction

Outline

- Goals
- What people need to know
- What we want people to know
- Tips & Tricks
- Examples
- Communication best practices

science communication



[Survival Guide: Public Communications for Water Professionals, WEF 2002](https://static1.squarespace.com/static/54806478e4b0dc44e1698e88/t/548a185fe4b040175fd8d099/1418336351575/survival+book4_10pdf.pdf)

https://static1.squarespace.com/static/54806478e4b0dc44e1698e88/t/548a185fe4b040175fd8d099/1418336351575/survival+book4_10pdf.pdf

Goals

- Establish decision making & communications channels to ensure organized & proactive communications
- Identify target audience and tailor message accordingly



What People Need To Know

- Is it safe?
- How much does it cost?
- What do you do?
- How will I be impacted?

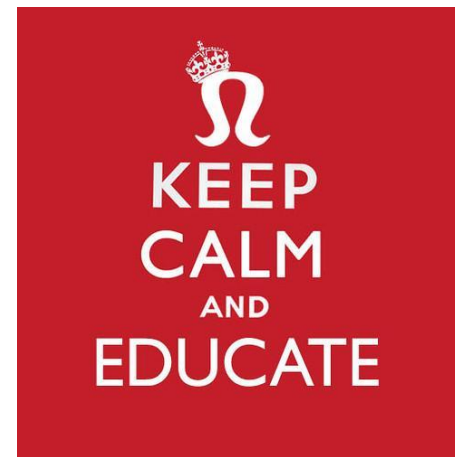


What We Want Them To Know

Sharing Is Caring

- Utility is an open, responsible, & responsive organization that cares about the customers, employees, & the environment

- Educate public on water treatment, water conservation, wastewater issues, and water stewardship, to include the cost of doing business that impacts their rates



Tips & Tricks - WHEN

Variety of issues or incidents can generate public attention

Utility must respond to appropriately and quickly

Ensure smooth flow of information to maintain confidence, reputation, integrity

- Work-related accidents
- Legal issues
- Regulatory matters
- Fires
- Overflows
- Biosolids spills
- Land application
- Infrastructure failures
- Terrorist attack
- Natural disasters



Tips & Tricks - HOW



27 Words
9 Seconds
3 Points



Tips & Tricks - PLAN

- Provide INTERNAL guidelines and training
- Develop a Notification Escalation Path & Plan
 - Designated Spokesperson(s) and Coordinator(s)
- Use varied resources and partnerships with local organizations as platforms and advocates
 - Engage early and often



Tips & Tricks - METHOD

- Define, respect, monitor audience
- Use facts and examples
 - **Avoid Jargon / acronyms**
- Break it down to clear, simple steps
- Have a clear understanding
 - **Be directional & prepared**
- Use active verbs and vivid nouns



- Don't lecture, tell a story with mission for the future
- Explain what the utility is doing to address the issues

Tips & Tricks - METHOD Cont.

Be sure that your message is:

- *Clear & concise – easily understood*
- *Compelling – to your target audience*
- *Contrasting – distinguishes you from others*



- ◆ *Connected (relatable) – to what is important to your audience*

Case Study - EXAMPLE



The long read

'Nothing to worry about. The water is fine': how Flint poisoned its people



Decision without communication



Mismanagement of messaging



Pointing fingers



Delay of action



Unclear root cause



Non-fact based decisions



Lack of accountability



Conflicting messages

“What is already clear is that this man-made disaster and case of environmental injustice is a textbook example of **what not to do in public affairs.**”

http://apps.prsa.org/Intelligence/TheStrategist/Articles/view/11476/1125/Toxic_Communication_How_the_Water_Crisis_in_Flint#.XUnfYJhKi70

Case Study - EXAMPLE

City of Thornton, Colorado decided to get ahead of **LEAD**

- Planned, budgeted, coordinated logistics for proper sampling
- Sampled all taps where human consumption is likely
- Communicated results to public

PERCEPTION WHEN READING DATA.

IE. "HOW CUSTOMERS INTERPRET IT." – AN EYE-OPENER

Building	Location	COPPER (ug/l)	LEAD (ug/l)	CONDENSED SAFE FOR CONSUMPTION	Sample Date	Sample Time
Margaret Carpenter Rec. Center 15555 Colorado Blvd.	Women's Locker Sink	140	ND	⊙	8/23/18	0908
	Men's Locker Sink	130	ND	⊙	8/23/18	0907
	Pool, Left Fountain	210	ND	⊙	8/23/18	0908
	Pool, Right Fountain	180	ND	⊙	8/23/18	0910
	Weight Room Fountain	120	ND	⊙	8/23/18	0912
	Reception Hall, Left Fountain	64	ND	⊙	8/23/18	0910
	Reception Hall, Right Fountain	77	ND	⊙	8/23/18	0914
	Threadmill Fountain	180	ND	⊙	8/23/18	0917
	Basketball Gym Fountain	110	ND	⊙	8/23/18	0920
	Exerc Desk, Right Fountain	110	ND	⊙	8/23/18	0922
	Exerc Desk, Left Fountain	140	ND	⊙	8/23/18	0923
	Running Track Fountain	190	ND	⊙	8/23/18	0928
	Fitness/Dance Fountain	160	ND	⊙	8/23/18	0930
	Staff Lounge Sink	80	ND	⊙	8/23/18	0930
	Gymnastics, Lower Fountain	130	ND	⊙	8/23/18	0936
	Gymnastics, Upper Fountain	160	ND	⊙	8/23/18	0937
	Main Kitchen, Left Sink	110	ND	⊙	8/23/18	0940
	Main Kitchen, Right Sink	170	ND	⊙	8/23/18	0940
	Main Kitchen, Small Hand Sink	150	ND	⊙	8/23/18	0940
	Main Kitchen, Coffee Maker	6	ND	⊙	8/23/18	0947
	Preschool, Pink Sink	140	0.63	⊙	8/23/18	0950
	Preschool, Small Sink	220	ND	⊙	8/23/18	0950
	Childcare, Green Sink	200	0.7	⊙	8/23/18	1000
	Childcare, Small Sink	150	ND	⊙	8/23/18	0900

MORE COMMUNICATION... STICKERS!



- Affixed to faucets that have been screened.
- Passive PR; for the public & employees.
- No dates, no expectation to re-test
 - No future hits to the budget
 - No real concern for "re-contamination"

Courtesy of David Leach, City of Thornton, from 2019 Rocky Mountain Water Quality Analysts Association Meeting

Communicating with Decision Makers

Strategies to encourage decision maker
buy-in to science-based solutions



Steve Hill
Alexandria Renew (VA)
Construction Programs
Coordinator

Goals



Goals - Gain Support

- First and foremost, decision makers need to understand the importance of supporting your message.
- The message should be *polished, concise, only the info they need to know.*
- What is your recommendation? What decision do you want them to make?



Goals - Inspire

- Second, decision makers need to be inspired
- Decision makers care about the needs of their community
- Identify local needs to increase likelihood of support



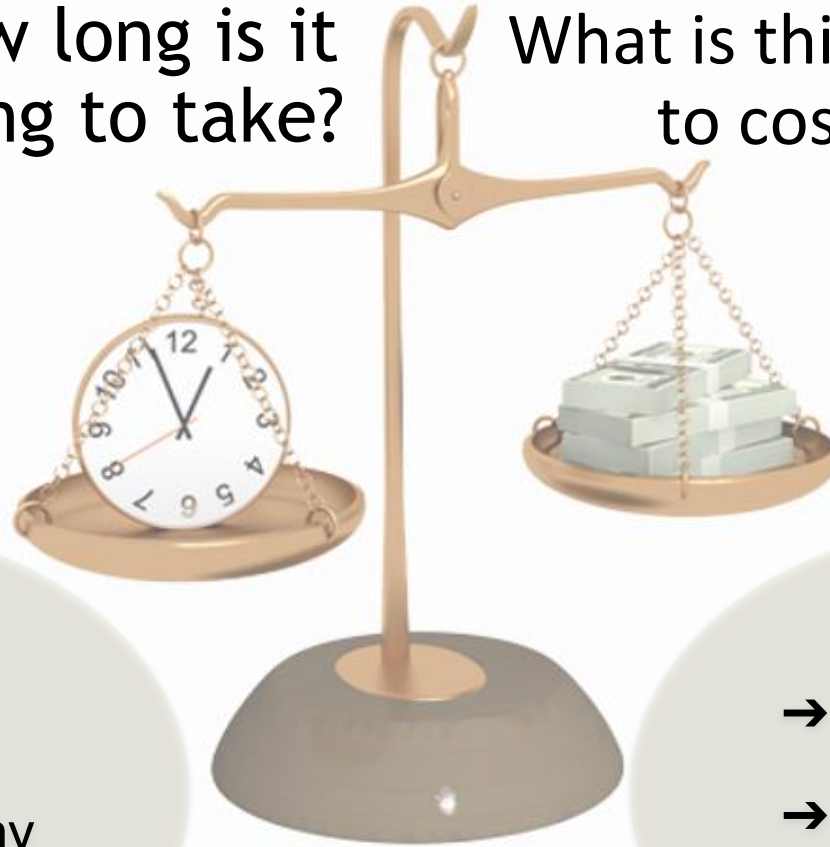
Goals - Expand the Message

- You need them to be an advocate for the solution you propose
- These people have a larger audience for public communication and education as well as an existing reputation and trust
- Having the decision maker(s) buy into the message can advance your goals with the public

What Decision Makers Want to Know

How long is it going to take?

What is this going to cost?



- Discuss anticipated timeline and benefits to local economy
- Be honest about potential setbacks

- Outline costs vs benefits
- Focus on future cost avoidance

What We Want Them to Know:

- The water/wastewater industry is an essential public service
- By supporting your goals, they are supporting the needs of the community at large and investing in the greater good.



You shower.....



.....We clean.....



.....He swims.

Know Your Audience

Identify what they value -
environment, economy,
human health?



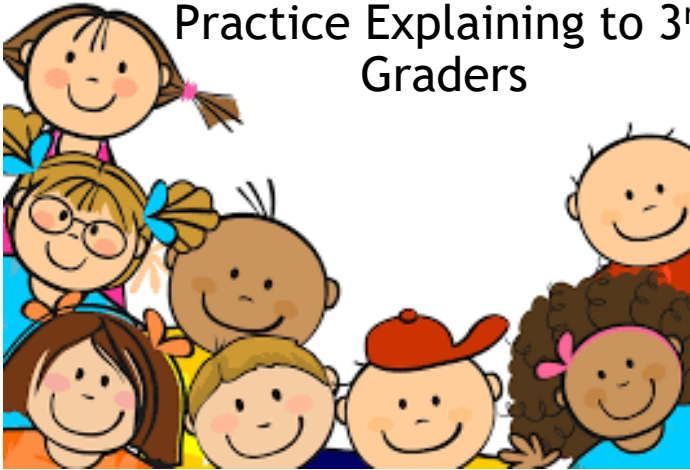
Different levels of decision makers
- Mayor vs City Council

Recognize the differing backgrounds of the decision makers
- various backgrounds mean different perspectives

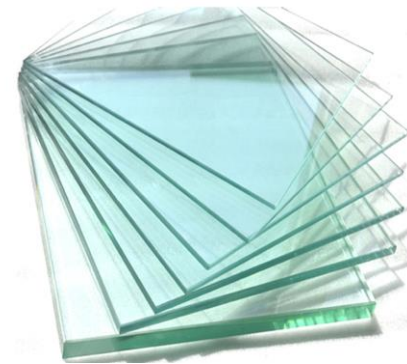


Tips & Tricks

Practice Explaining to 3rd Graders



Be Transparent



Identify a Champion



Allow for Questions



The Art of Persuasion

When you need to sell an idea at work or in a presentation, how do you do it? Five rhetorical devices can help – Aristotle identified them 2,000 years ago, and masters of persuasion still use them today:



Ethos - Establish credibility and character

Logos - Use science based information

Pathos - Speak to elicit an emotional response

Metaphor - Make a familiar comparison

Brevity - Emphasize your strongest points first

Examples - Building a Program

- Under a citizen-appointed Board of Directors, AlexRenew formed an apprenticeship-training program through a partnership with the VA Dept of Labor and the state's Registered Apprenticeship program.
- With the support from our decision makers, this program has given educational opportunities to those interested in learning a trade and protecting the environment.



Examples - CEO Report

Treatment	Daily Average Flow MGD	Carbonaceous Biochemical Oxygen Demand (Monthly Average) mg/L	Total Suspended Solids (Monthly Average) mg/L	Ammonia (as N) (Monthly Average) mg/L	Dissolved Oxygen (Minimum) mg/L	Total Nitrogen ¹ (Annual Average) mg/L	Total Nitrogen LOAD (YTD) lb	Total Phosphorus (Monthly Average) mg/L	Total Phosphorus LOAD (YTD) lb
Permit	54.0	5.0	6.0	Seasonal ²	6.0	3.0	493,381	0.18	29,603
Reported	44.7	<QL	12.8	0.36	9.7	3.1	104,834	0.29	6,026

Clearly states permit levels and actual levels for board to evaluate, not just reported levels.

Examples - CEO Report

Public Engagement and Trust

Overview of how AlexRenew continues to serve the public

Transparency of negative reaction and how it was handled by AlexRenew

Online

- Produced a website story and promoted it via social media. On Facebook to date, we have more than 280 responses to our first social media post with **six negative engagements focused largely around rising rates and the \$20 to \$40 per month range. One negative post confused us with Virginia American Water. We responded within two hours to each post with approved messaging about the next two years and the requirement for cleaner waterways. We also clarified our role and rates versus VAW.** The Facebook post has had 20 shares. On Twitter to date, we have had more than 50 responses and 10 retweets. More than 400 website visitors have read the web story about the proposed increase.
- Continued social media posts about the reasons for the rate changes.
- Presentations or flyer distribution at additional association and organization meetings as they are scheduled.
- Distribution of the rate flyer and in person discussions at Earth Day on April 27.
- An Open House on Sunday April 28 from 3 PM to 5 PM in our Environmental Center lobby.
- **Publication of a joint Board Chair and Mayor OpEd about investment in clean waterways.**
- Tours during infrastructure week (May 13 – 17) for the public, city staff, and city elected leaders.
- Exclusive media pitch to a local newspaper about the need for investment in clean water.

Overall this shows that AlexRenew's actions align with the Board's goals

Getting perspective of Board Chair and Mayor to release to the public. Buy in from decision makers supports communication to the public.

Examples - CEO Report

Tours and Events

During March, we welcomed 340 visitors to our Environmental Center. We hosted 11 events, including the Eisenhower Partnership City Manager's breakfast with 63 attendees, Election Officer Training for 97 citizens by the City of Alexandria Elections Office, and a visit from four teachers with the Arlington Career Center.

Shows support for public education.

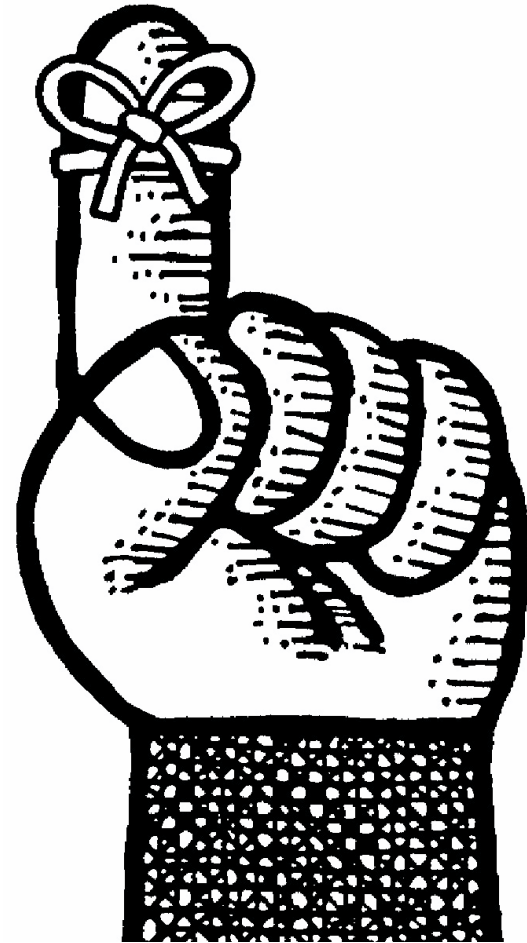
AlexRenew is providing a safe work environment. This show Alex Renew's dedication to its employees.

Adaptive Culture

From April 30, 2018, we have logged 124,840 hours without a lost time accident.

When Communicating to Decision Makers, Remember:

- ★ Be clear and concise
- ★ Answer the questions: *How much and how long?*
- ★ Know your audience
- ★ Keep and open and honest dialogue



Summary

- Why educating the public on water industry science-based information topics is critical
- How to relay information to public & strategies to encourage trusting science-based solutions
- How to relay information to decision makers

Questions



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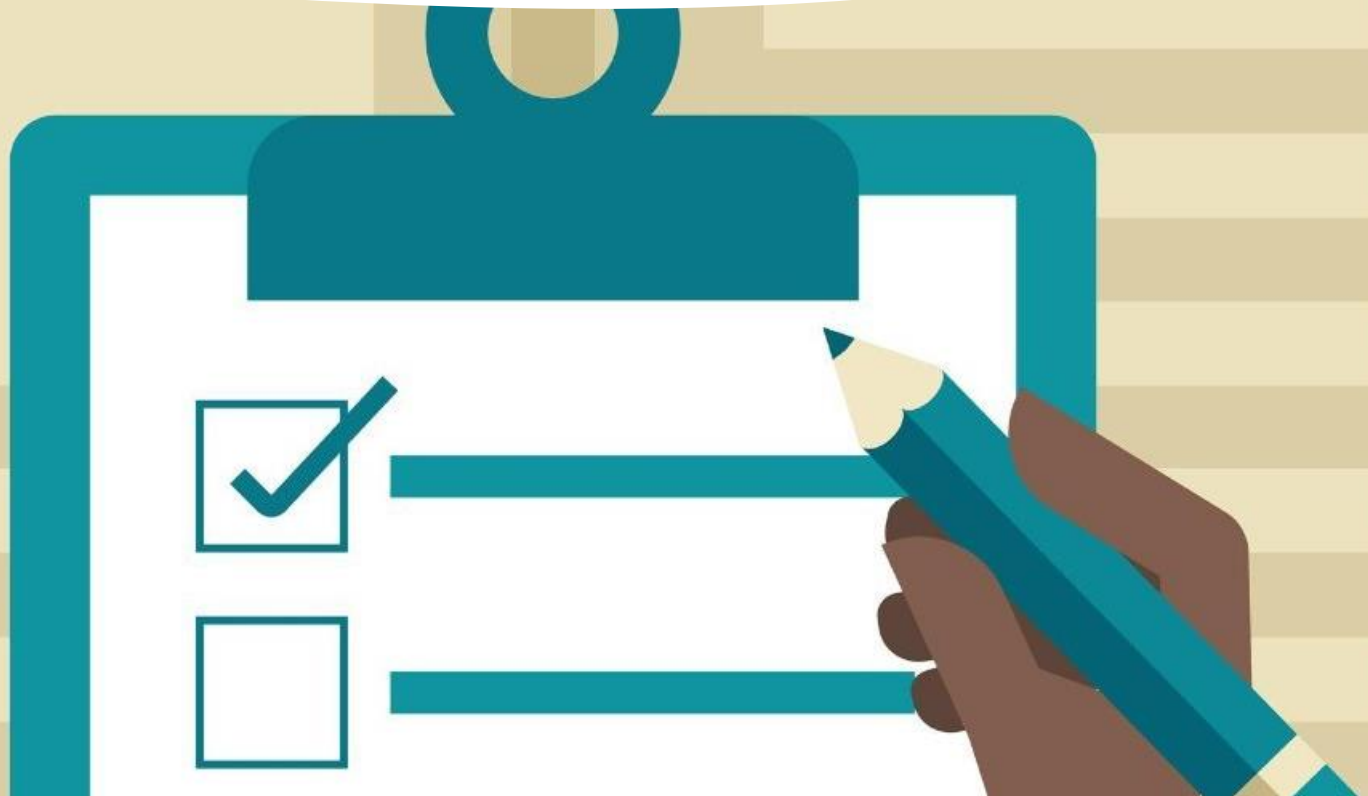
Paige Lux
LuxP@wseinc.com
<https://www.linkedin.com/in/paige-lux-9b26738b/>

A wide-angle photograph of a sunset over the ocean. The sun is a bright orange orb on the horizon, casting a shimmering path of light across the water. The sky is a mix of deep blue, orange, and yellow, with wispy clouds catching the low light. In the foreground, blue waves with white foam are washing onto a sandy beach.

Water Careers: An Ocean of Opportunities

Learning Objectives

- Create public awareness and interest
- Strategies for creating a healthy and diverse workforce
- Selling the Vision





The Need for Talent

- 10,000 baby boomers retire each day. (Washington Post, 2014)
- Some city service managers estimate that 80% of their team will retire in the next five to ten years. (Reester, 2008)

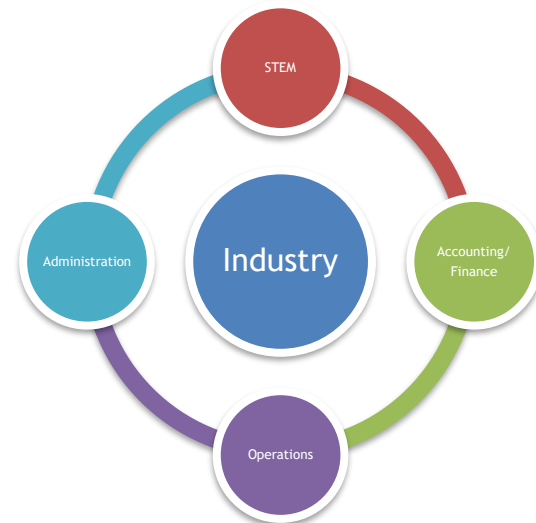


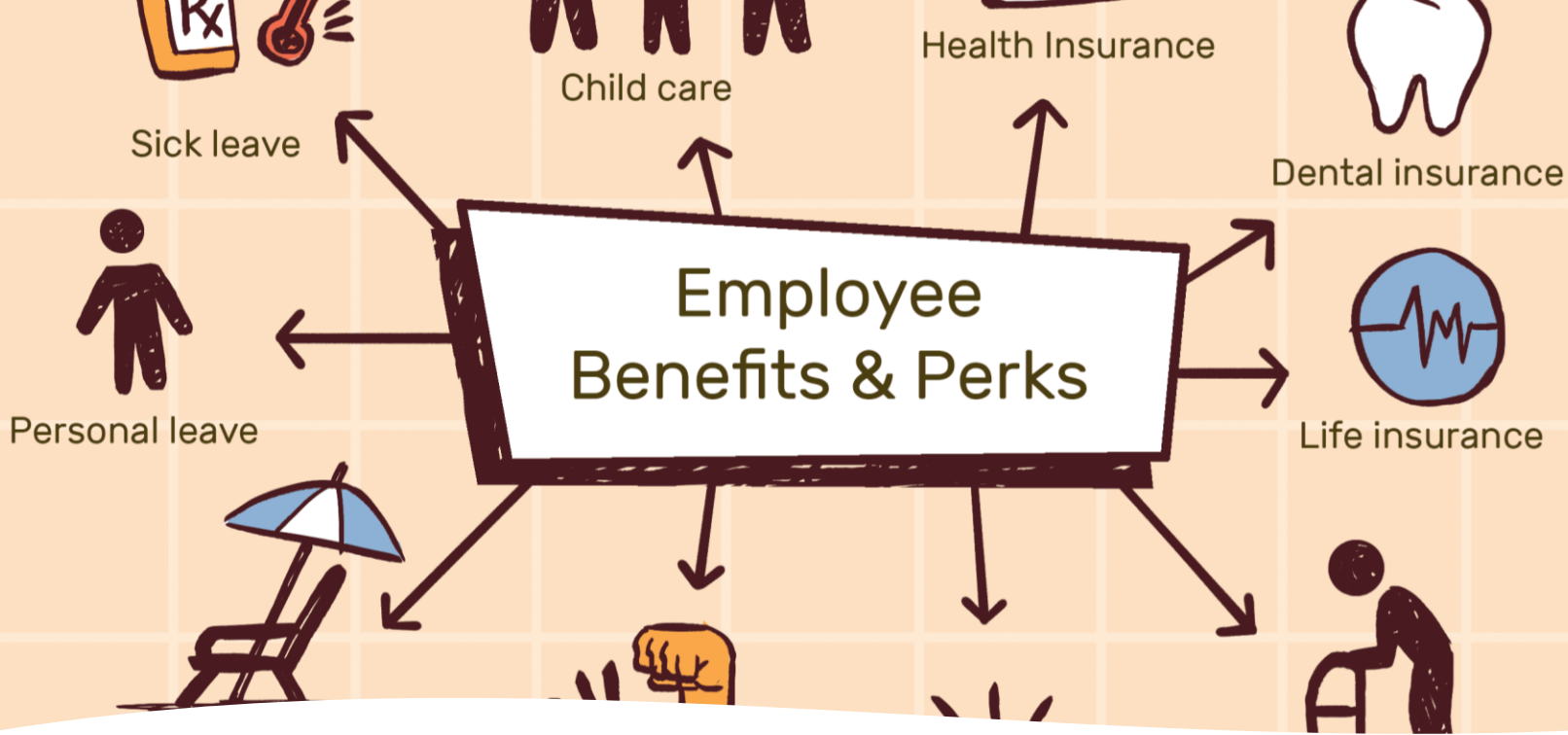
Learning Objective One

Creating Public Awareness and Interest



Types of Careers





Strategies: Awareness of Benefits

- Promotional opportunities
- Education reimbursement
- Work/life balance
- Resilience from economic downturns
- Making a difference in the world



Pairing Workers with Jobs

- Job Boards
- Worker Resources
- Recruitment Videos
- Internships
- Apprenticeships



Learning Objective Two

Strategies for Creating a healthy and diverse workforce

Developing a Formal Recruitment Plan



Illustration by Chris Gash

- Identify skills the organization needs
- Compare current job descriptions
- Develop internal resources to support new hires
- Target marketing efforts
- Establish candidate selection process

Recruitment: Building Skillsets for Entry-level Operators

- Design and launch new bridge programs
- Formalize mentoring opportunities
- Promote local organizations with community partners



Funding Workforce Development

Grants

- EPA Workforce Development Grants

-Career and Technical Education Act

Local Programs

- Rural Community Assistance Partnership
- Maryland Center for Environmental Training
- Environmental Finance Center Network



The Case for Diversity



- One of every three U.S. residents belongs to a minority group (U.S. Census, 2010)
- Benefit: Increased competitive advantage and improved organizational effectiveness



Target Demographic Example: Veterans

- Veteran Employment Grants
- Train HR Staff to understand military ranks
- Leverage VA Toolkits for Employers
- Engage your local VA Office/Legion Post



Learning Objective Three

Selling the Vision

How to Conduct Outreach: Sell the Vision

- Work for a cause
 - Protect public health
 - Preserve the environment
 - Promote a healthy economy





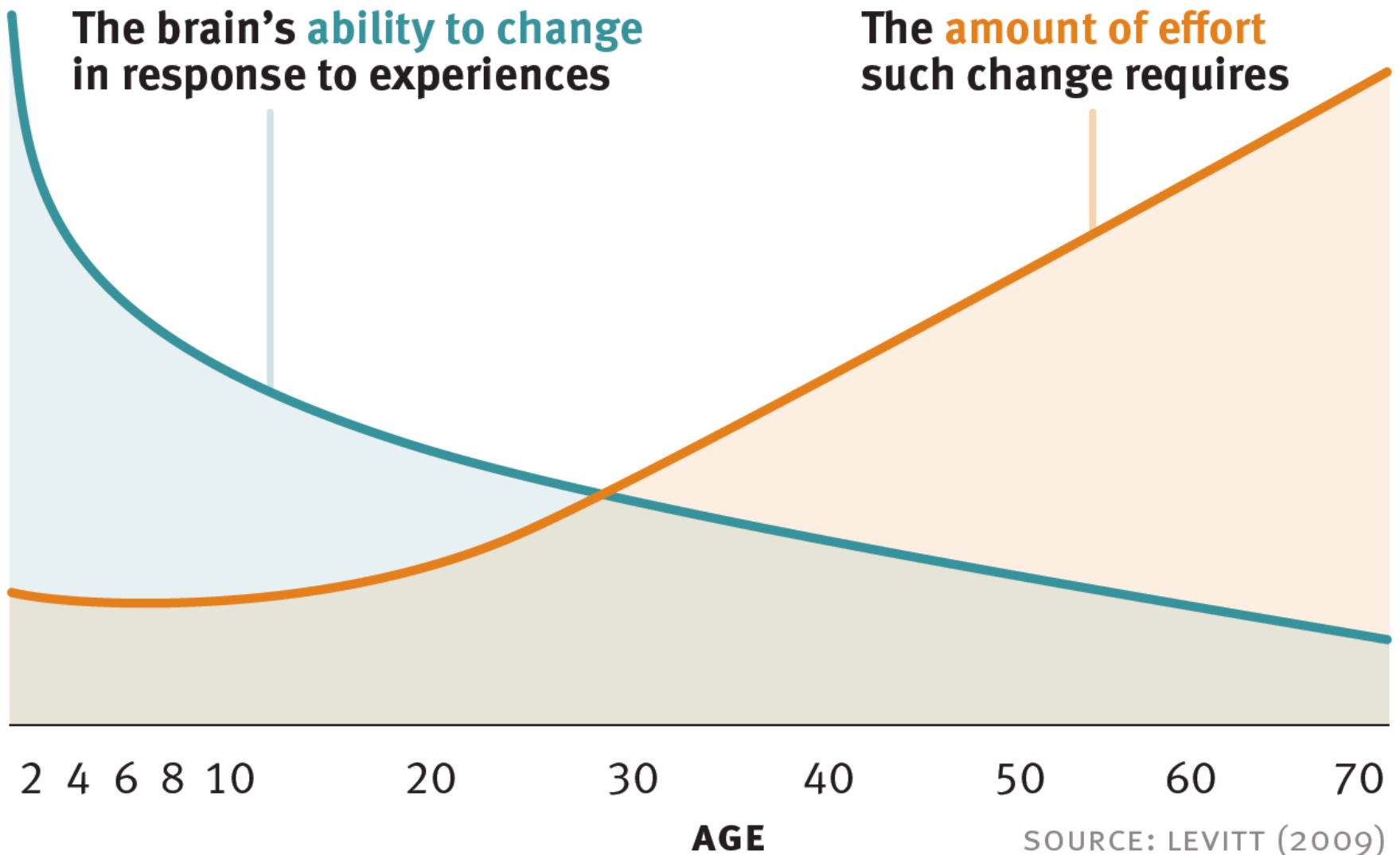
Start with Staff

- Staff are our best advocates and recruiters
- Invest in them and Provide Opportunities

Where to Recruit: Local Schools

- Use hands on activities and open facilities to school tours
- Communicate the impact on societal health and safety
- Enhance learning with scholarships, internships and design challenges





Recruitment Saves Money

- Saves organization time to search, interview and hire.
- Hire the “right” people
- Retain employees



Recruitment Builds Communities

- Development of our Youth
- Transitions into Real Jobs
- Local applicants and local jobs boost the community's economy



Employee Engagement Helps Retain Talent

1. Put people in the right roles
2. Provide employees training
3. Task meaningful work, to the greatest extent possible
4. Check in often
5. Frequently discuss engagement





Recap

- More than 30 percent of the nation's water and wastewater workers are eligible to retire in the next five to 10 years
- Create public awareness and interest
- Develop a strategy for creating a healthy and diverse workforce
- Sell the Vision

Thank You!

- Noelle Anuszkiewicz
 - Bureau of Utility Operations
 - Anne Arundel County, MD
- Connie Ho
 - Irvine Ranch Water District
 - Irvine, CA
- Mitch Klein
 - JEO Consulting Group
 - Lincoln, NE
- Matt Magruder
 - Milwaukee Metropolitan Sewerage District
 - Milwaukee, WI
- Teresa Penunuri
 - San Diego County Water Authority
 - San Diego, CA
- Craig Williams
 - Angola Wastewater Treatment
 - Angola, IN