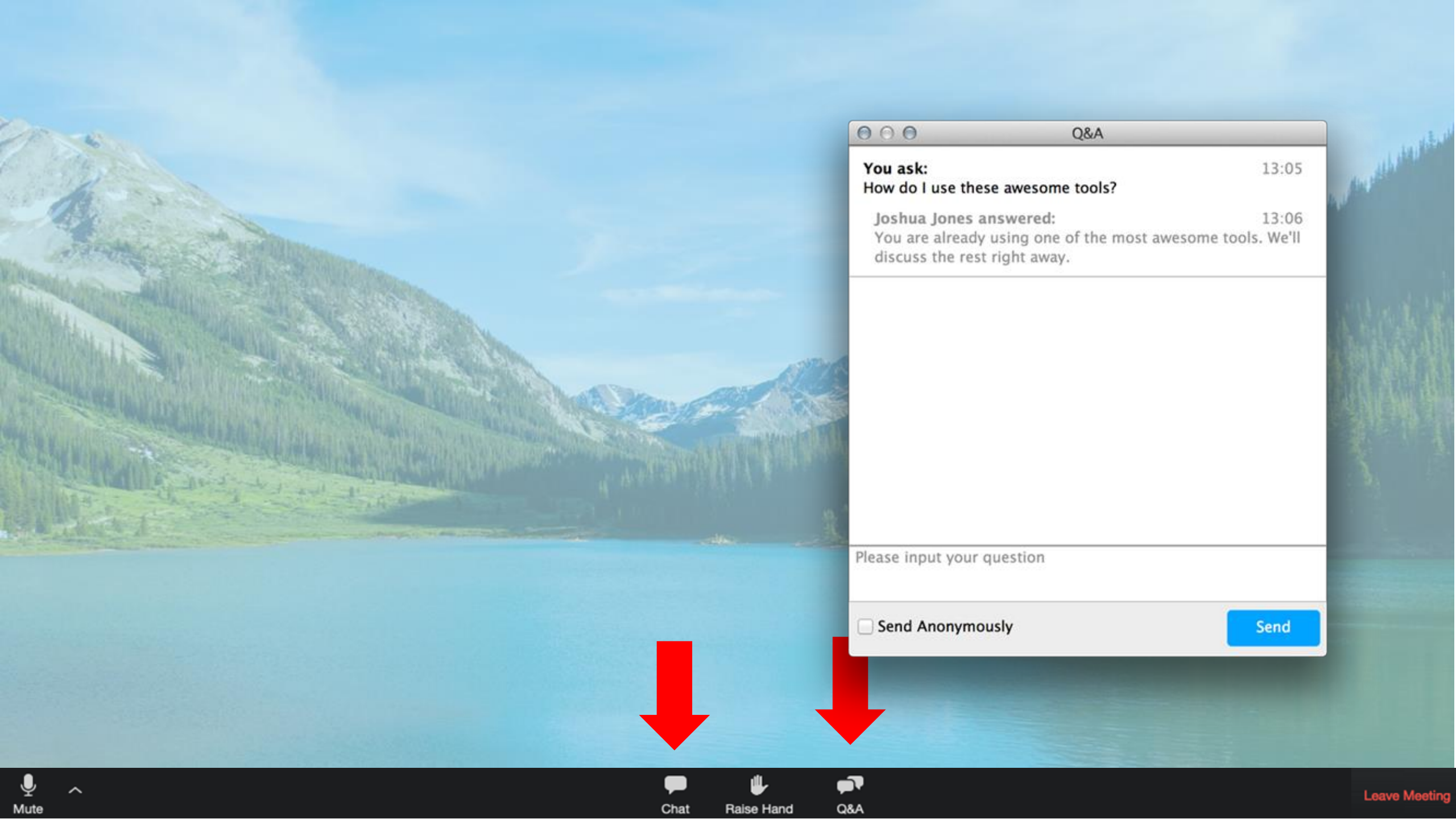


How to Manage, Value & Invest in Natural Assets as Part of Water Systems

July 14, 2026



Q&A

You ask:13:05

How do I use these awesome tools?

Joshua Jones answered:13:06

You are already using one of the most awesome tools. We'll discuss the rest right away.

Please input your question

☐ Send Anonymously

Send



Certificate of Completion

This session has **NOT** been submitted for pre-approval of Continuing Education Credits, but eligible attendees will receive a certificate of attendance for their personal record.

To receive a certificate:

- You must attend the entire session
- You must register and attend using your real name and unique email address - group viewing credit will not be acceptable
- You must participate in polls
- Certificates will be sent via email within 30 days

If you have questions or need assistance, please contact smallsystems@syr.edu.

About EFCN

The **Environmental Finance Center Network (EFCN)** is a university- and non-profit-based organization creating innovative solutions to the difficult how-to-pay issues of environmental protection and water infrastructure.

The EFCN works collectively and as individual centers to address these issues across the entire U.S, including the 5 territories and the Navajo Nation. The EFCN aims to assist public and private sectors through training, direct professional assistance, production of durable resources, and innovative policy ideas.



Please complete the post webinar survey!



WaterNow

WaterNow works to advance transformation in the urban water sector to accelerate the widespread adoption of equitable, climate resilient and environmentally sustainable strategies.

We do this as a national network for local water leaders and decision makers, empowering them with the technical assistance, resources, and tools they need to implement innovative One Water drinking water, stormwater, and wastewater solutions in their communities.



Webinar Objectives

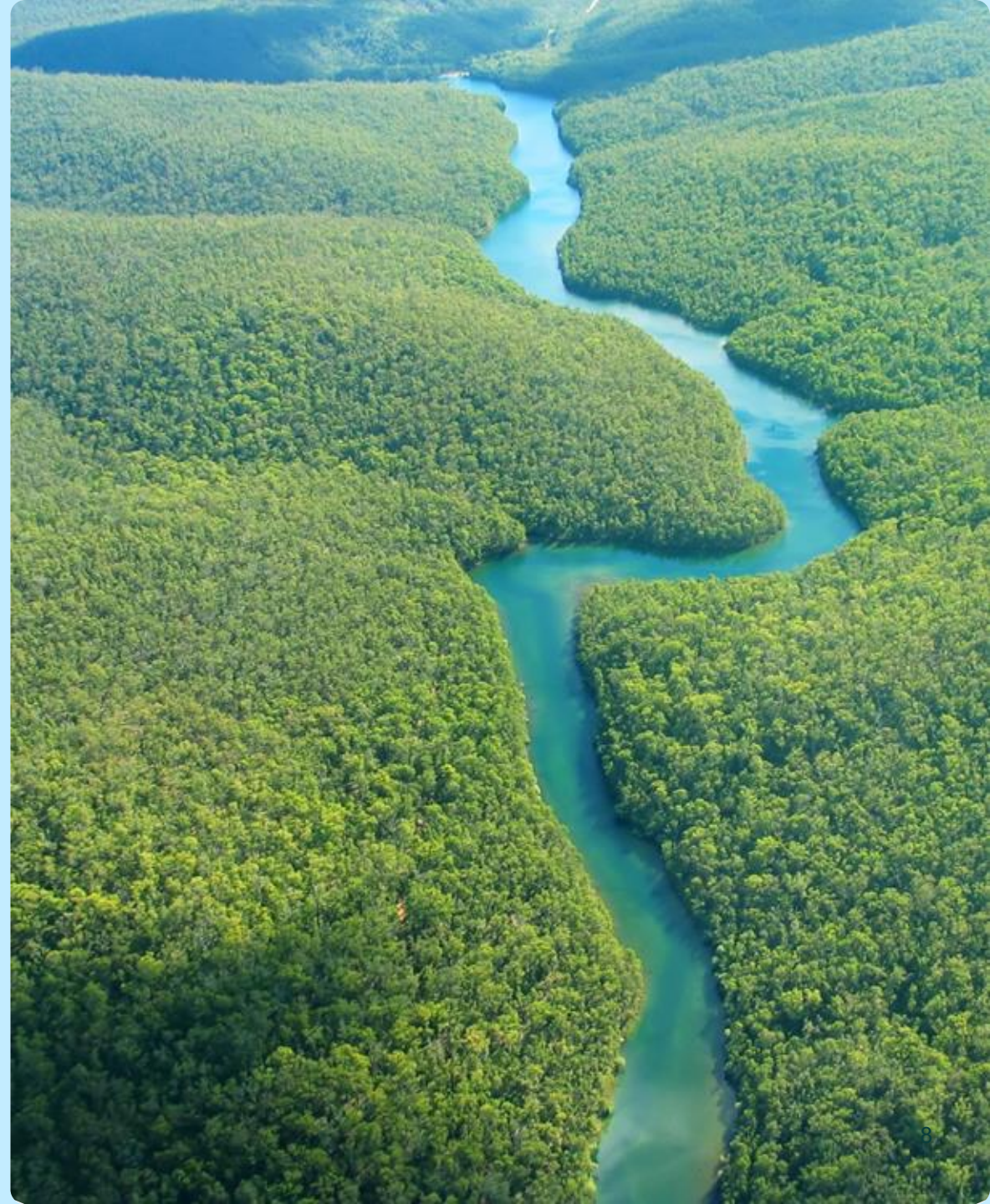


- Demonstrate that natural assets are **part of water systems** and can be **effectively incorporated** in infrastructure management and investments
- Feature how utilities can **leverage State Revolving Fund** loans to pay for natural asset investments
- Provide insight on **technical assistance** available to water utilities to secure funding for natural asset projects
- **Answer** participant **questions** about natural assets and how to manage, value, and invest in this vital water infrastructure



Today's Agenda

- Meet the Speakers
- Audience Poll
- What Are Natural Assets?
- How to
 - Manage,
 - Value, and
 - Invest in Natural Assets
- Overview of Technical Assistance for Rural, Small, and Tribal Communities
- Audience Q&A



Today's Speakers



Janet Clements
CEO
One Water Econ



Jeff Odefey
Water Policy Director
One Water Econ



Heather Himmelberger
Director
Southwest EFC



Bob Raucher
Resource Economist
Raucher, LLC



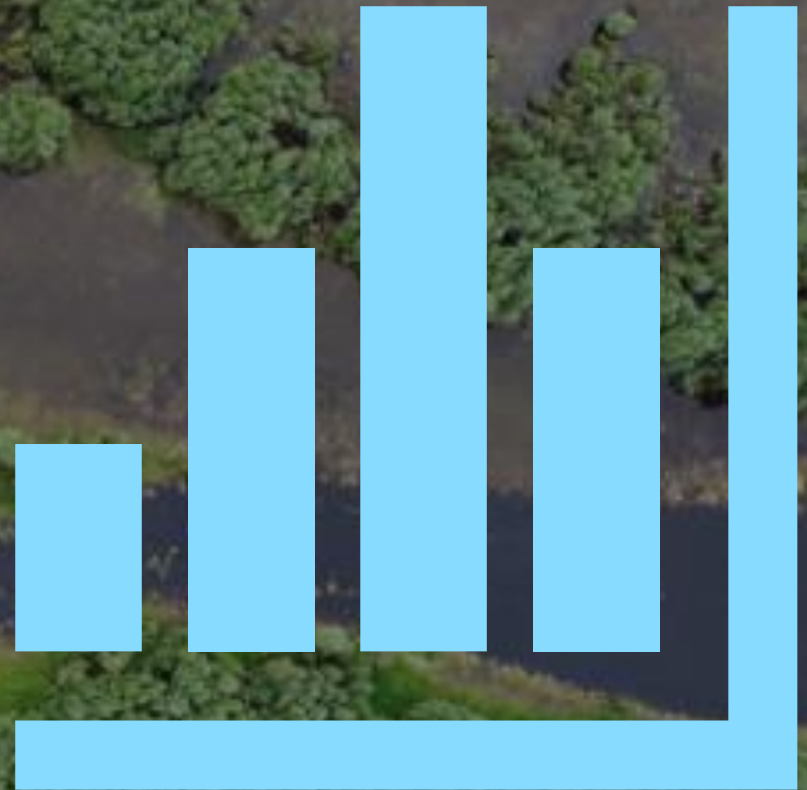
Ed Harrington
Former GM
San Francisco PUC



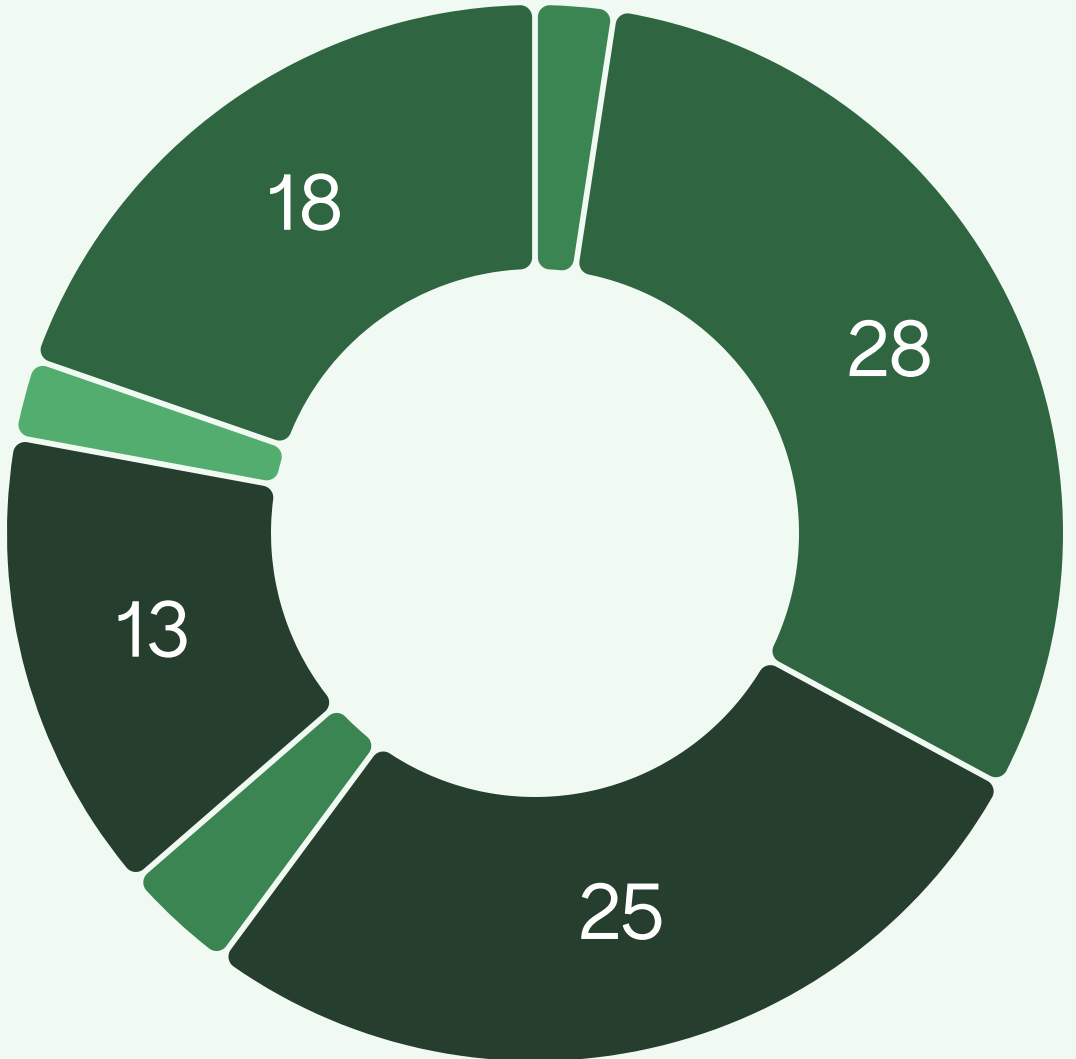
Caroline Koch
Water Policy Director
WaterNow



Time for audience polls!

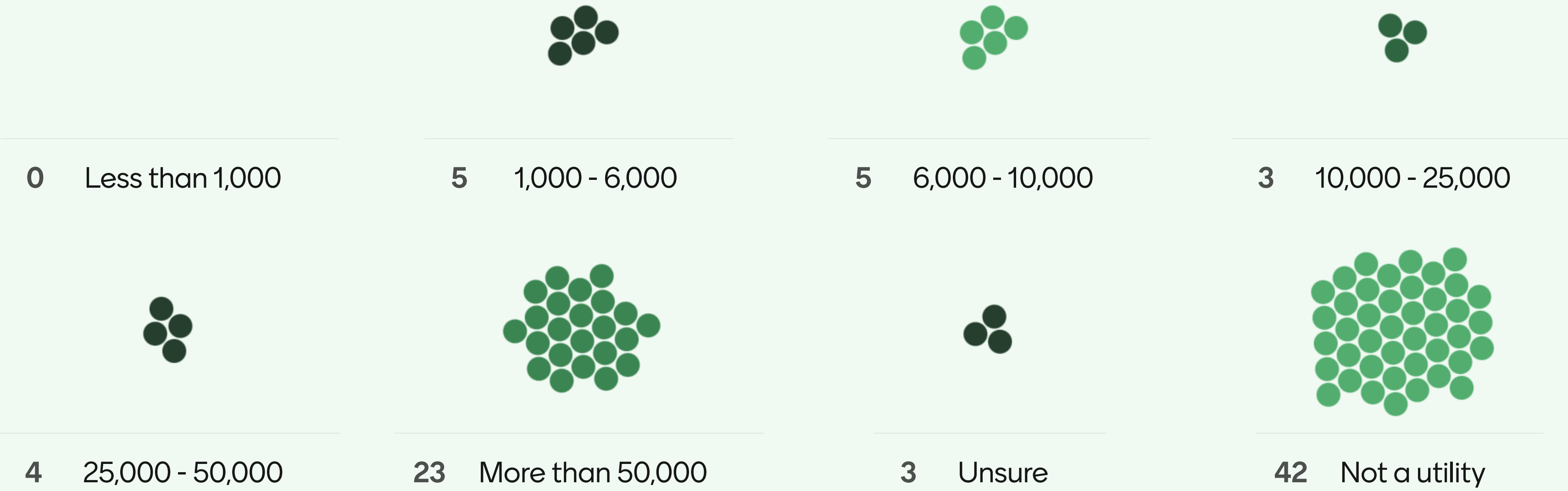


What Industry Association best fits you?



- 2 City council member
- 0 Tribal government officer
- 0 Special district board member
- 28 Utility management or staff
- 25 State agency management or staff
- 3 Federal agency manage or staff
- 13 NGO management or staff
- 2 Academic
- 18 Private sector / consultant

How many customers does your utility serve?



How many FTEs does your utility employ?



What are natural assets?



Jeff Odefey

Water Policy Director

One Water Econ

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Defining Natural Assets

“Natural systems or nature-based infrastructure that provide multiple benefits to water systems, society, and ecosystems by offering services that complement or replace the need for built infrastructure or that provide services that built infrastructure cannot.”



Natural Assets Provide Water Services



Wastewater Treatment System Treatment Wetlands

- Final polishing of pretreated effluent, or
- Major part of treatment train
- Co-benefits include habitat and wildlife values, avoided energy costs, recreational opportunities



Natural Assets Provide Water Services



Drinking Water Supply Watersheds

- Productive source water tributaries and main stem rivers
- Sediment stabilization, nutrient removal, pollutant filtration
- Co-benefits include avoided treatment costs, habitat and wildlife values, recreation opportunities



Natural Assets Provide Water Services



Green Stormwater Infrastructure

- Retains and infiltrates runoff, reducing discharges to local waters
- Filters and sequesters pollutants, improving water quality
- Co-benefits include reduced “grey” infrastructure costs, reduced urban heat island effects, air quality improvements, urban habitat and wildlife values



Photo: Colorado Stormwater Center
(l),
City of Vancouver (r)

How to manage and value natural assets



Heather Himmelberger

Director

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Bob Raucher

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Janet Clements

CEO

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We manage
gray assets
using a
process called
Asset
Management



Asset Management involves 5 core concepts



Assets

Service

Criticality

Life Cycle

Funding

Asset Management In 5 Brief Slides



Current State
of the Assets



Level of Service



Criticality



Life Cycle Costing



Long-Term Funding

So are natural and green assets really assets in the same sense as gray ones?...

An asset is something that has actual or potential value. Is something that needs to be managed. And serves an intended purpose.

Do natural and green assets have value?

The cost of the land, plants, vegetation or other “green” or natural aspects of the overall asset.

The cost of “gray” components of the overall asset.

Non-monetary values (social or environmental values)

Are the green and natural assets intended to serve a particular purpose?

Stormwater Management
(quantity and quality)

Source water

Source water conveyance
&/or infiltration

Source water protection

I/I Reduction



Secondary Values Also

Aesthetics,
climate change
considerations,
health, Other



Do the natural
and green
assets require
“management”
in order to
serve their
purpose?

O&M Activities

Repair

Rehabilitation

Replacement

Funding

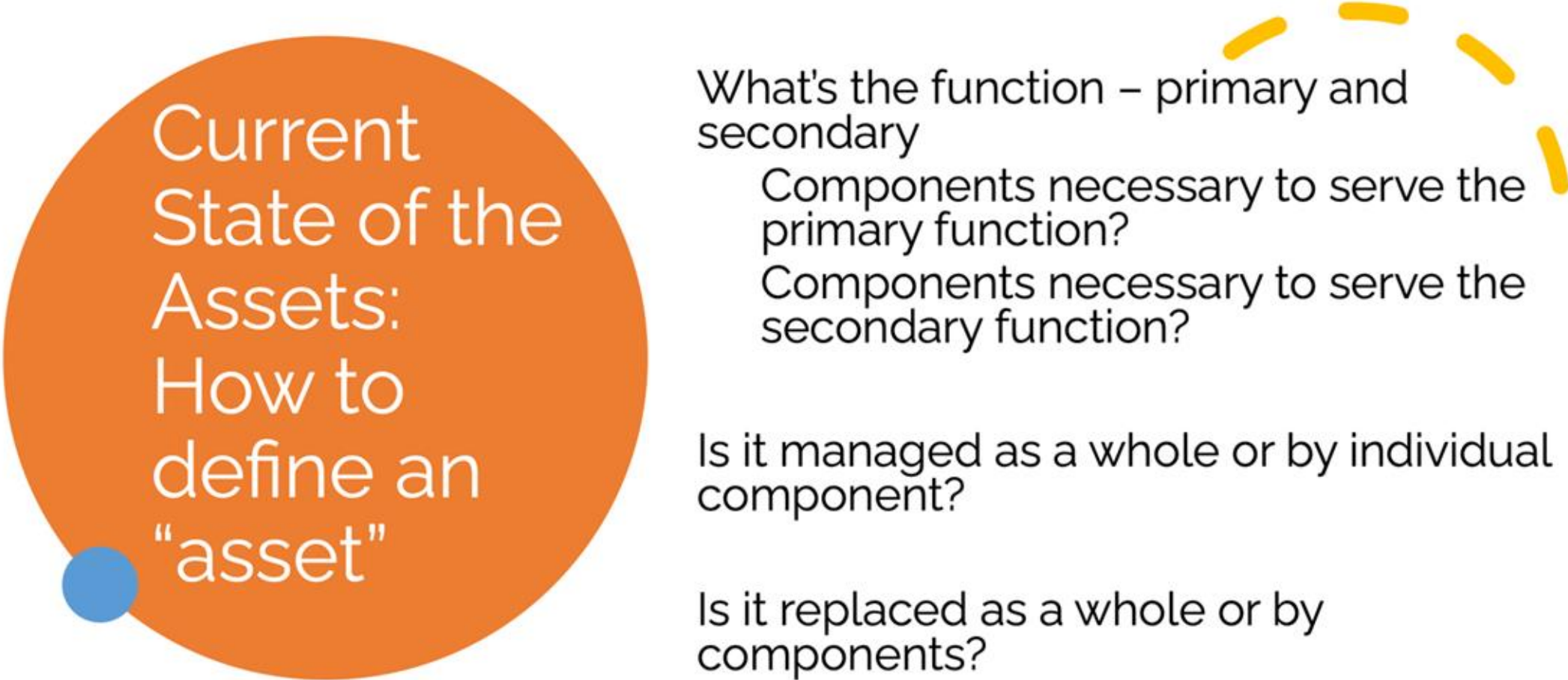
If we agree that these natural and green elements are assets, next step...



Incorporate the natural and green assets into a traditional AM strategy

Not a perfect fit, but
best option

Some Considerations
w/ Natural and Green
Assets



Current State of the Assets: How to define an “asset”

What's the function – primary and secondary

Components necessary to serve the primary function?

Components necessary to serve the secondary function?

Is it managed as a whole or by individual component?

Is it replaced as a whole or by components?

Is it a large size?

Level of Service

What you want the green assets to do for you.

Extra considerations around social aspects and secondary purposes for the assets



Criticality: Considerations

Asset, or portions of asset, can fail but the asset can still function

Multi-asset vs. single asset failures

Life Cycle Costing



The costs of various life stages are difficult to estimate



Natural assets don't have some of the costs (generally don't have to purchase and they won't be replaced)



Green assets can be owned by different entities than manage them



Green assets can appreciate over time where gray depreciate

Long-Term Funding



Funding in its infancy with green and natural assets



Hard to develop a long-term funding plan

Costs of Natural Assets – Discussed Later
With Green: Construction costs very site specific
Maintenance costs not yet well-known
Operation costs generally low to zero
Costs of repair/rehab/replacement – not well known & vary from place to place
End of life difficult to estimate, especially with Natural assets

Assessing and Managing Asset-Related Risks

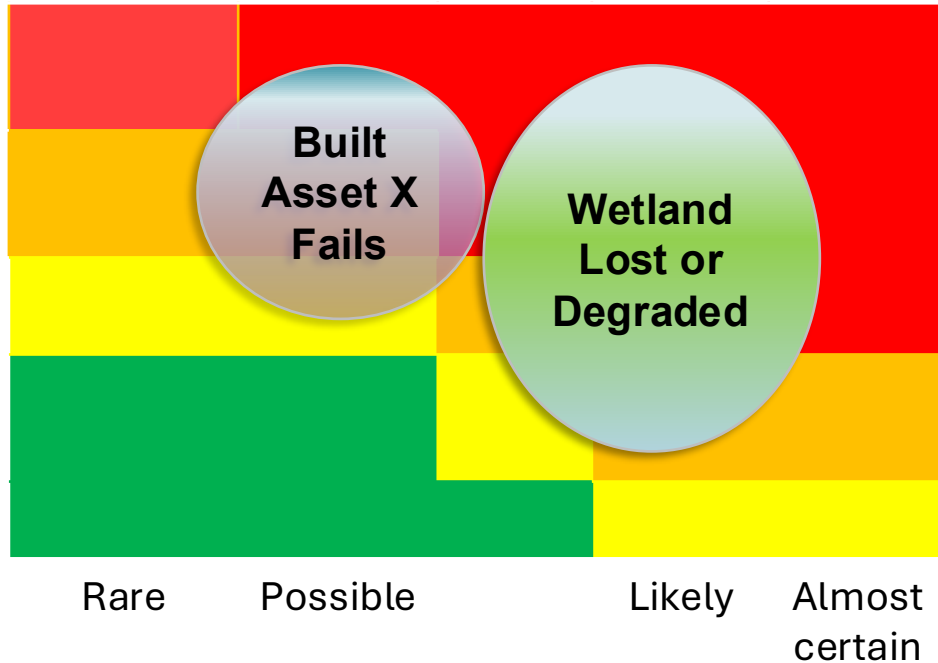
It does not matter whether a service comes from an engineered asset or a natural asset...

What matters is that the service be well provided: Reliable, sustainable, and cost-effective

- All utility assets – built or natural – can degrade or fail
- Asset degradation or failure poses *risks* to the utility:
 - Adversely impacts Level of Service (LoS)
 - Imposes costly impacts on the utility (repair or replacement)
 - Typically adversely impacts rate-payer and other communities, and ecosystems



Assessing and Managing Asset-Related Risks



- **Assess risks** to asset condition and service levels
 - Risk = Probability X Consequences
 - Consequences driven by estimated “costs” imposed by asset failure or degradation
 - Costs include the *value* of reduced LoS, *plus* all other adverse impacts
- **Identify and evaluate options** to manage risks
 - Estimate cost of options to reduce risks
 - Identify, articulate, and value the benefits of reducing risks (including “avoided costs”)



Assessing and Managing Asset-Related Risks



- **Rank and select** the “best” risk management option
 - Maximize “net benefits” (benefits minus costs)
 - Requires estimating the **value** of services provided (i.e., change in service level values)
 - Include the **value** of avoiding any other adverse impacts to the utility and to others.
- **Invest** in selected natural asset management option
 - Compete internally for CIP and OPEX funds
 - Secure financing
 - Update financial reporting



Value: Quantifying and Monetizing Natural Asset Benefits

avoided costs
non-market benefits
energy savings habitat
triple bottom line
urban cooling
ecosystem services
environmental
social valuation

- Informs natural asset management
- Strengthens budget requests
- Helps to prioritize investments
- Compete for scarce funding
- Communicate with peers and stakeholders
- Strengthen partnerships/co-funding



Natural Asset Benefits

1. Water quality
2. Water supply
3. Flood risk reduction
4. Asset life extension
5. Energy savings

1. Air quality
2. Urban cooling
3. Recreation
4. Green jobs
5. Habitat & biodiversity
6. Reduced wildfire damages
7. Carbon reduction
8. Community livability

	Water management					Environmental & social co-benefits							
Natural asset	1	2	3	4	5	6	7	8	9	10	11	12	13
Protected watershed lands	•	•	◐	◐	◐	◐	—	•	•	•	•	•	◐
Natural & constructed wetlands	•	◐	•	◐	◐	—	◐	◐	—	•	◐	•	◐
Riparian corridors	•	◐	•	◐	◐	—	◐	•	—	•	◐	◐	•
Natural floodplains	•	◐	•	◐	◐	—	—	◐	—	•	—	◐	◐
Rivers, streams & lakes	•	•	◐	◐	◐	—	—	•	◐	•	—	—	•
Aquifers	◐	•	◐	◐	◐	—	—	—	—	—	—	—	—
Environmental buffers	•	◐	◐	◐	◐	◐	◐	◐	—	•	◐	◐	◐
Green stormwater infrastructure	•	◐	•	•	•	•	•	◐	•	◐	—	◐	•
Forested lands	◐	◐	◐	◐	◐	•	•	•	◐	◐	◐	•	•

Value: A Credible, Step-by-Step Framework

- Utilities want credible valuation methods
- Avoided cost is the most trusted approach
 - Clean Water Services: shading avoids about \$50 million over 20 years versus a chiller
 - Milwaukee MSD: a \$2 million land purchase displaced a \$90 million engineered alternative
- Framework applies standard economic methods, so natural and built options compare on the same terms.
- Quantify benefits in physical units, then monetize where credible



Clean Water Services, OR: Valuation Tool for Wetlands

Reuse Site:	Restoring Farmed Wetland		Land Application Annual Valuation Tool				
Land Category:	Inland Wetland						
Total Acres Treated:	200		updated illustration of 7 May2025				
	A	B	C	D	E	F	G
Ecosystem Service Category:	A: # Relevant Acres	B: Full \$ Value/Acre/Yr	C: Baseline Score	D: Post RW Score	E: % Change in Score	F: Adjusted \$/Acre/Yr	G: \$ Benefit Generated/Yr
Aesthetic Value	50	\$ 1,593	1	4	60%	\$ 955.91	\$ 47,795
Air Quaility		\$ -			0%	\$ -	\$ -
Biologic Control		\$ -			0%	\$ -	\$ -
Climate Regulation	200	\$ 68	3	5	40%	\$ 27.39	\$ 5,478
Erosion Control		\$ -			0%	\$ -	\$ -
Existence Value		\$ -			0%	\$ -	\$ -
Flood/Storm Hazard Reductio	175	\$ 1,545	2	4	40%	\$ 618.20	\$ 108,184
Food Provisioning		\$ -			0%	\$ -	\$ -
Habitat	200	\$ 1,731	2	5	60%	\$ 1,038.81	\$ 207,761
Pollination		\$ -			0%	\$ -	\$ -
Recreation/Tourism	150	\$ 2,330	1	4	60%	\$ 1,398.28	\$ 209,742
Research and Education		\$ -			0%	\$ -	\$ -
Water Filtration	85	\$ 1,937	2	4	40%	\$ 774.70	\$ 65,850
Water Supply	200	\$ 786	3	4	20%	\$ 157.24	\$ 31,448
Total Estimated Benefits		\$ 9,991					\$ 676,258

- Evaluates ecosystem service benefits of recycled water projects that restore/enhance local wetlands.
- Applies FEMA “benefits transfer” values for different land types.
- Scales benefits based on assigned baseline conditions and degree of anticipated improvement.



How to invest in natural assets



Ed Harrington

Former GM

San Francisco PUC

edhrr@cs.com



How do utilities invest in water infrastructure?

Multi-year capital plans reflect infrastructure investments

Most large capital programs are debt financed

To invest in natural assets, add projects to multi-year capital plan and finance alongside other investments



A photograph of a small green seedling with four leaves growing out of a recycled metal can that is partially buried in dark soil. To the right of the can, a cracked eggshell is visible, suggesting a natural hatching process. The entire scene is set against a blurred green background.

Problem solved, right?

What they* say about financing natural assets

“I don’t like debt, it’s impractical and inappropriate”

“It may follow the rules, but it’s not the proper use of debt”

“It’s not part of the water system”

“It’s just grass”

“This will not create an asset because we don’t own it”



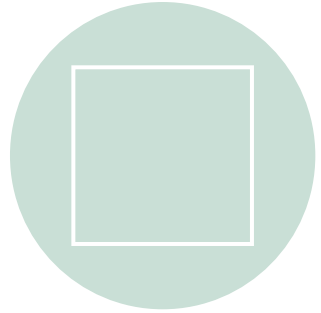
* E.g., city and utility finance managers, public works directors

Good news!

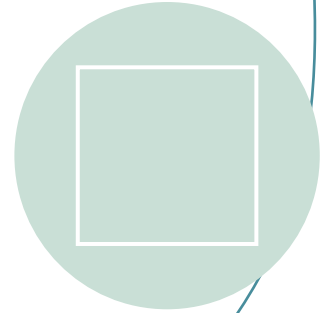
Cities and utilities **can** borrow to finance investments in natural assets even on property they do not own



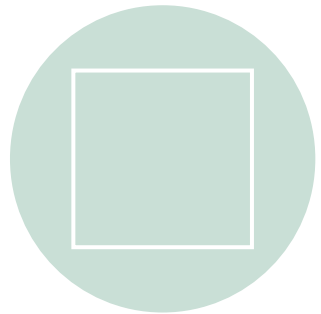
Why finance natural asset investments?



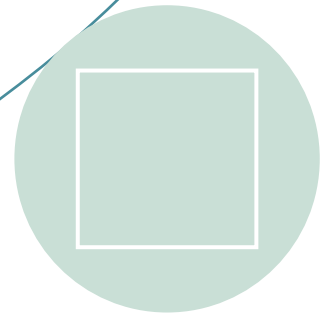
Its practical



Matches costs with benefits



Access to low-cost loans and bonds

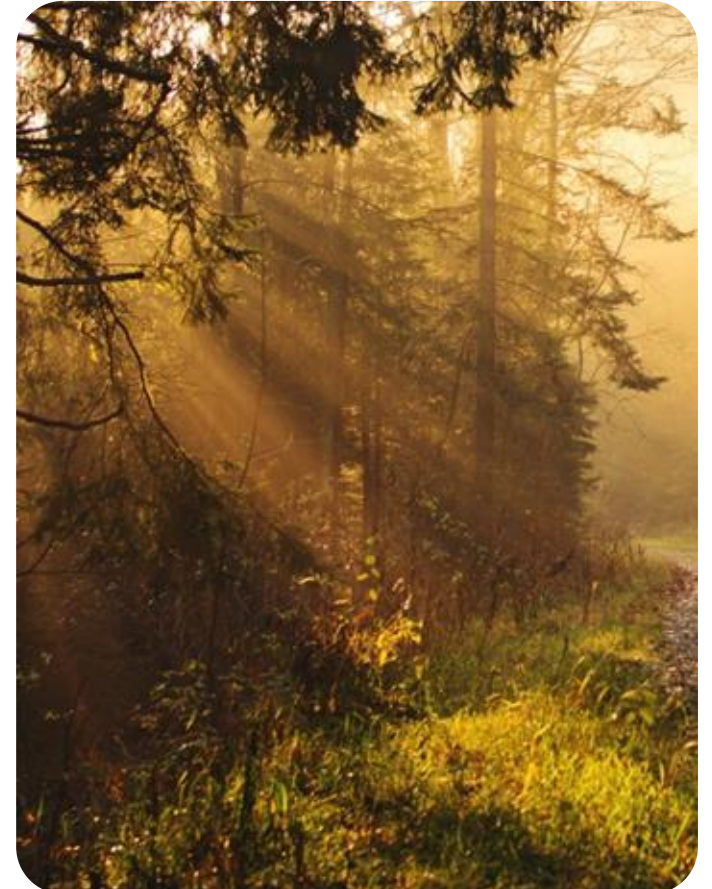


Creates intergenerational equity



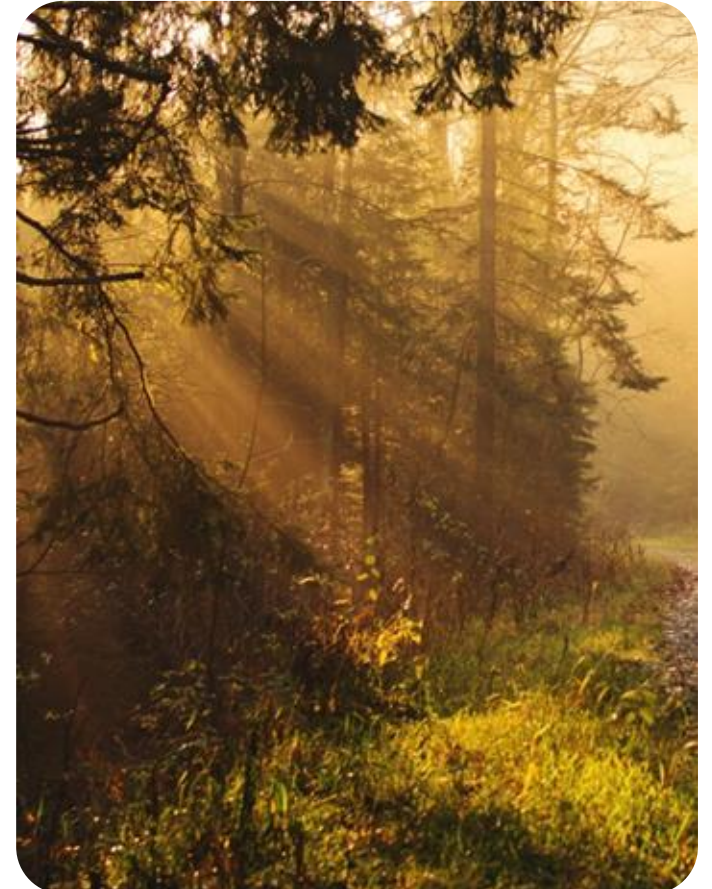
Steps to make new, larger-scale investments in natural assets

- Identify natural assets important to the system
- Classify natural asset projects as capital expenditures
- Use rates, bonds, loans to finance just as all other capital spending
- Book any debt using either
 - Traditional approach, GASB 4
 - Regulated operations, GASB 62
- Record the spending at historical cost



Ways to incorporate natural assets into financial planning and reporting

- Include investment needs in budgeting to ensure future spending, e.g.,
 - 5- or 10-year capital plans
 - Cost of service studies
- Include economic benefits in financial documents when describing the water system, e.g.,
 - Background info in bond official statements
 - Annual financial report voluntary disclosures



Overview of technical assistance for rural, small, and tribal communities



Caroline Koch

Water Policy Director

WaterNow

cak@waternow.org



Natural assets are eligible for Clean Water State Revolving Fund loans

Utilities and cities using CWSRF loans for natural asset investments

MMSD

In FY27, Milwaukee Metropolitan Sewerage District received a **\$12M** loan to fund distributed GSI

Flagstaff

In 2019, Flagstaff, AZ received a **\$6M** loan to fund watershed health and wildfire mitigation projects

Mosier

Mosier, OR received a **\$1.5M** loan to fund vegetated swales, rain gardens, constructed wetlands, etc.

CWSRFs are federal-state partnerships that operate like banks to provide **flexible, low-cost financing** for water quality infrastructure projects.

Projects **eligible for CWSRF** financing include green infrastructure, conservation and efficiency, watershed restoration and conservation, wildfire mitigation, among types of natural asset projects.

The CWSRF **Green Project Reserve** sets aside at least 10% of federal capitalization grants to incentivize green, nature-based projects, and many states offer reduced interest rates or other additional incentives.



Specialized Technical Assistance: Rural, Small, & Tribal Systems



Who's eligible?

- Pro bono support for wastewater and stormwater systems serving $\leq 10,000$
- Or wastewater systems that treat up to a million gallons per day
- National scope – utilities in all states and regions are eligible



What support is available?

Planning and
assessing system
needs

Engaging the
community to map
challenges and assets

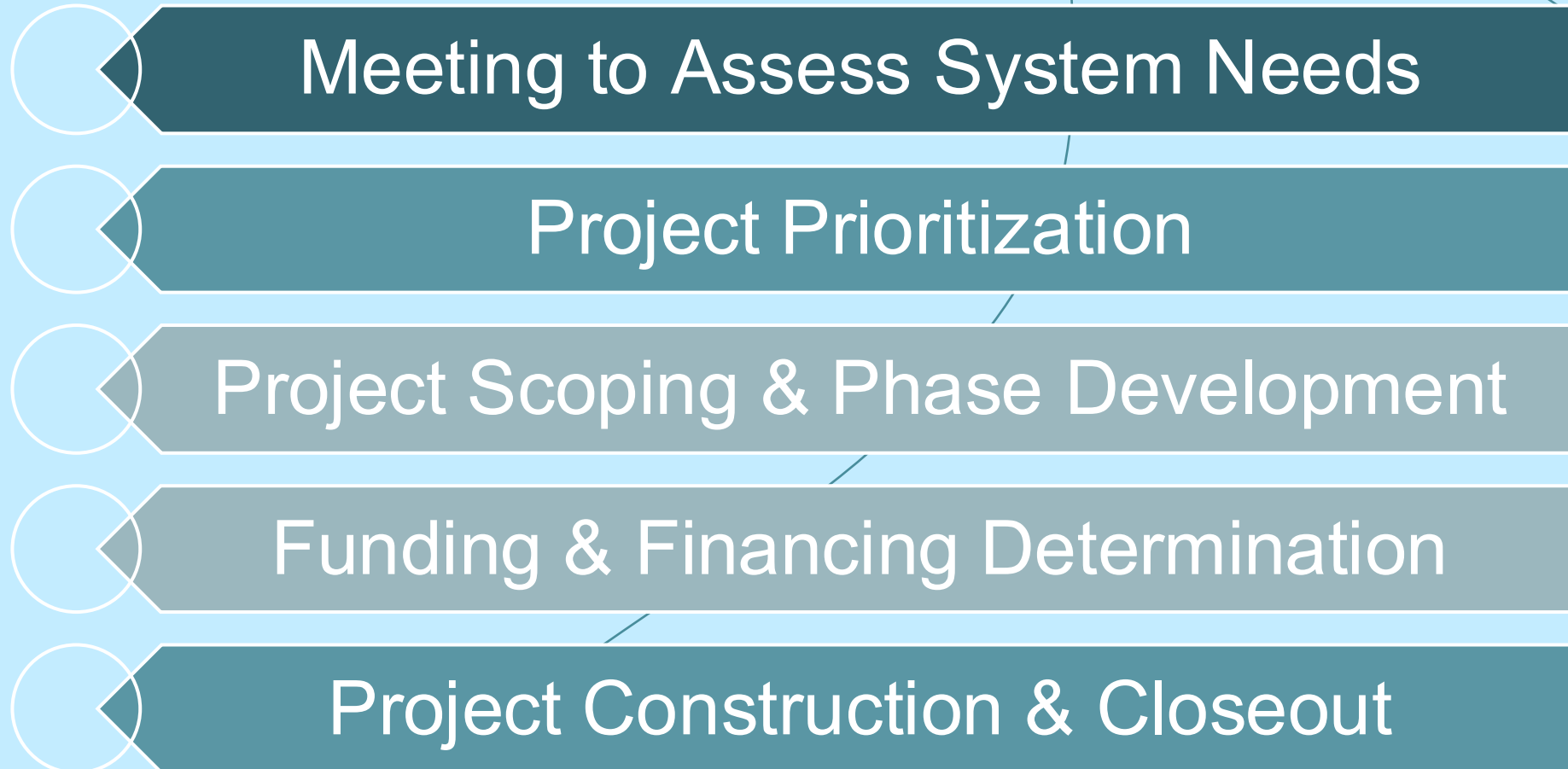
Identifying funding and
financing opportunities

Navigating grant and
loan application
processes

Building technical,
financial, and
managerial capacity



Technical Assistance Process



Get Help Form



WaterNow

Rural, Small, Tribal Water



EFCN
environmental finance center network

System Technical

Assistance Request Form

Get Free Technical Assistance

To request assistance, please fill out the form below. You will be asked a few questions to help us understand your system and what kind of assistance you need.

cak@waternow.org [Switch account](#)



Not shared

* Indicates required question

Name *

Your answer

Title/Position *

Your answer

Get Help Form



Phone Number *

Your answer

Email *

Your answer

Name of the system, organization, or community you represent: *

Your answer

City *

Your answer

State *

Your answer

Get Help Form



Are you requesting assistance on behalf of a storm water or wastewater system? *

☐ Storm water

☐ Wastewater

☐ Both

Briefly describe the challenge your system is facing or the type of assistance you are seeking *

Your answer

Submit

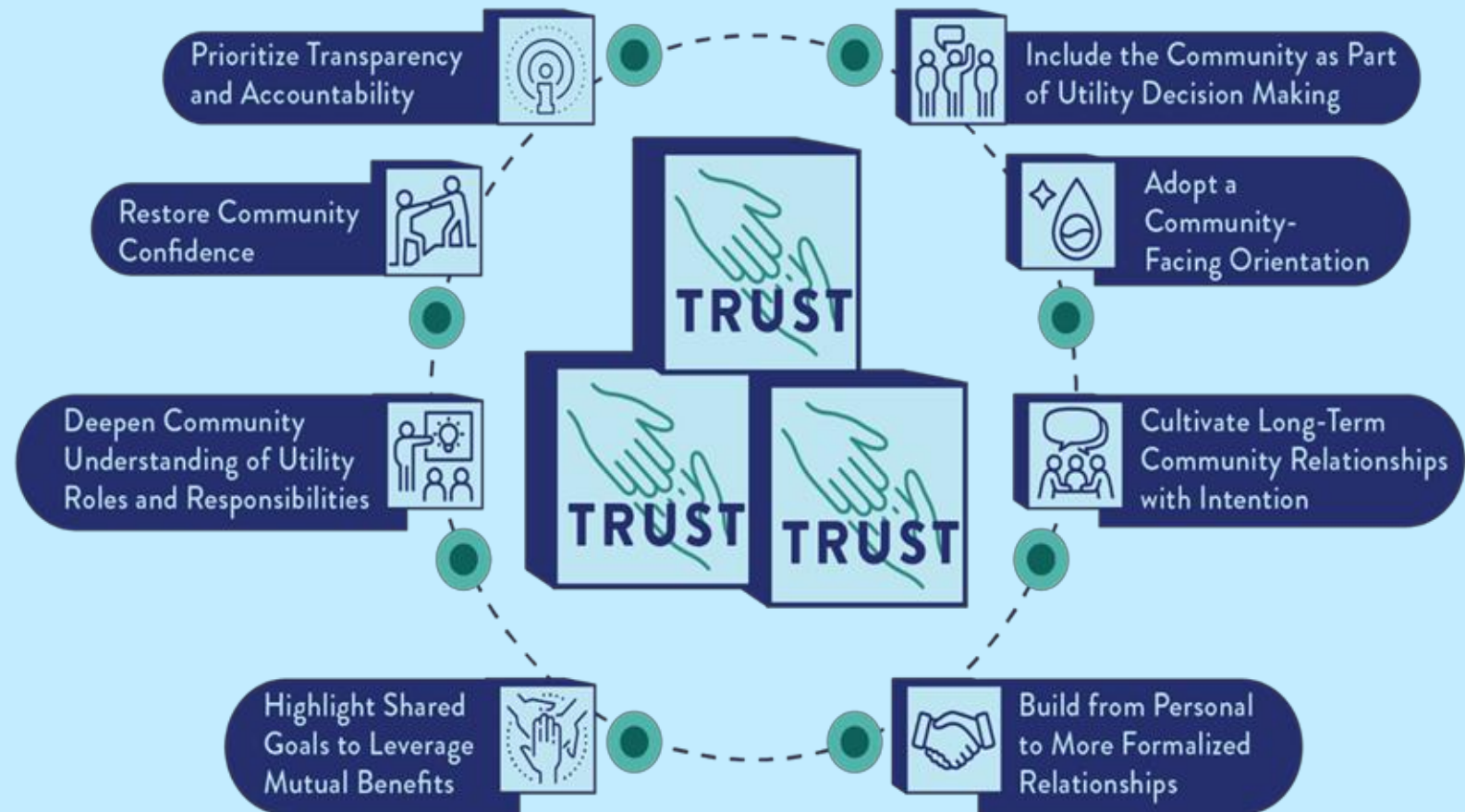
Clear form



- 250 hours of **pro bono technical assistance**
- Over a **6-12 month** period
- City/Agency identified project, driven by **local priorities**
- **Jump start** innovative water management initiatives



Building Blocks of Trust: Best Practices for Authentic Partnerships & Community Engagement





Audience Q&A

Join WaterNow

WaterNow is a unique network of local decision makers leading the way to a climate resilient water future for their communities.

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Please complete the post webinar survey!



Thank you!



For more information email:

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Resources:

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