



Leveraging a One Water Approach for Recycled Water Planning in the Pacific Northwest

Lynn Stephens, PE

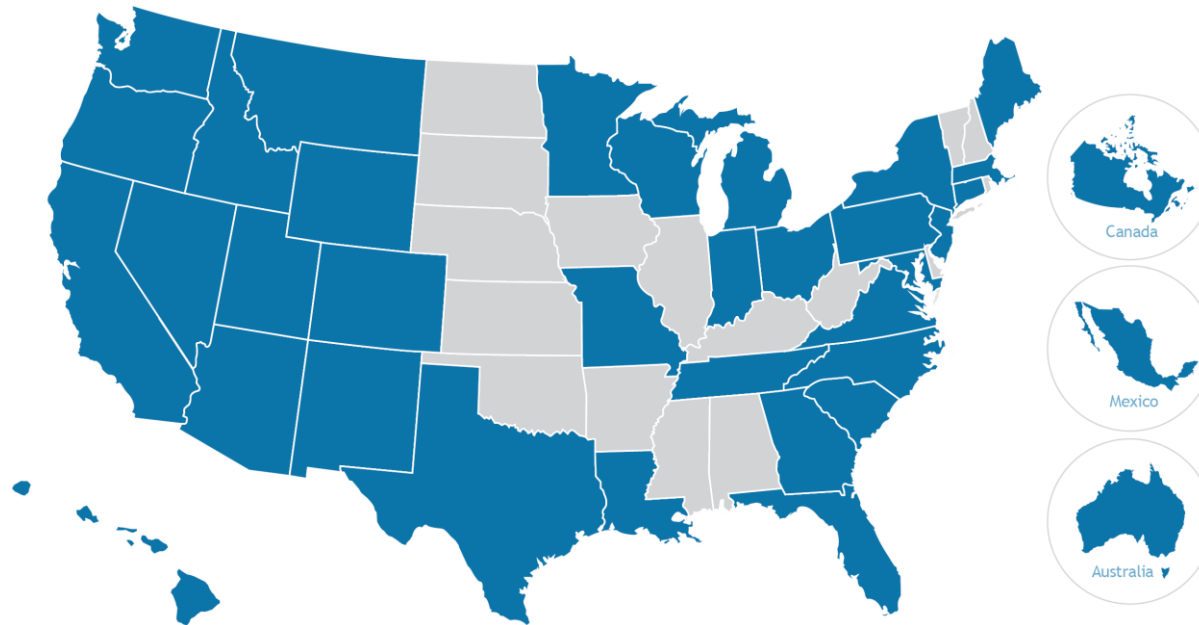
Today's Outline

- Blueprint for One Water
 - Project background
 - What we mean by One Water?
 - Blueprint phases and steps
- PNW example
 - Kitsap County



Blueprint reflects input from Utilities and Water Professionals Worldwide

- International survey completed by more than 800 water professionals
- More than 10 one-on-one interviews
- 2-day workshop with more than 35 water professionals



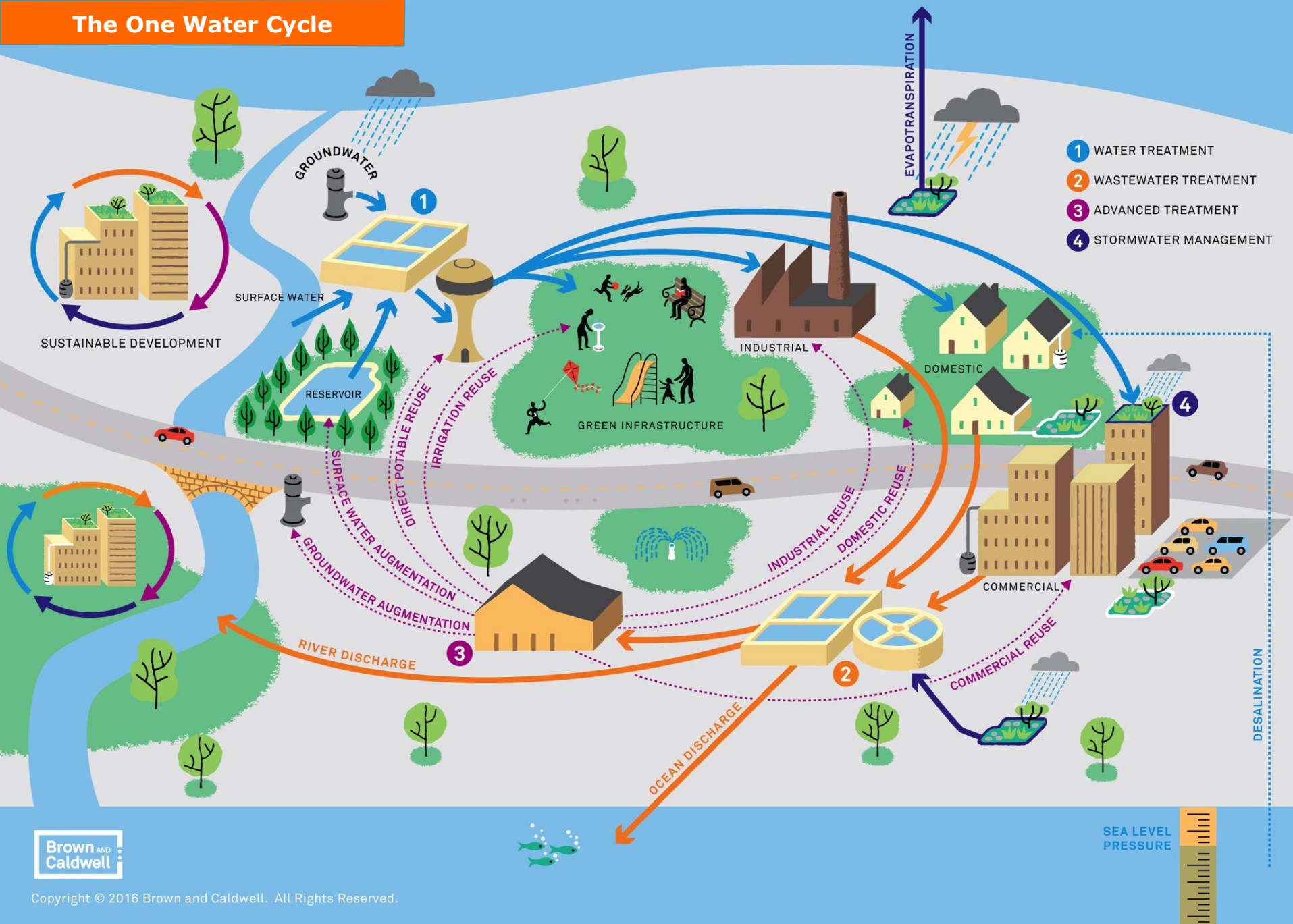


ONE WATER

One Water defined

One Water is an integrated planning and implementation approach to managing finite water resources for long-term resilience and reliability, meeting both community and ecosystem needs.

The One Water Cycle



Definition of One Water is Site-specific

**Matching the right resource
the right use**

- *San Francisco Public Utilities
Commission*

**Integrating source water
protection and watershed
protection**

- *Greater Cincinnati Water Works*

**Becoming energy-
neutral**

- *New York City*

**Integrated approach to
urban water management**

- *Denver Water*

**Holistic approach to
pollutant reduction**

- *Philadelphia Water*

Stormwater as a resource
- *City of Tucson*

**Gain resiliency looking
100 years into the future**

- *Austin Water*

To Meet Current Challenges - One Water Shifts How We Manage Our Water Resources

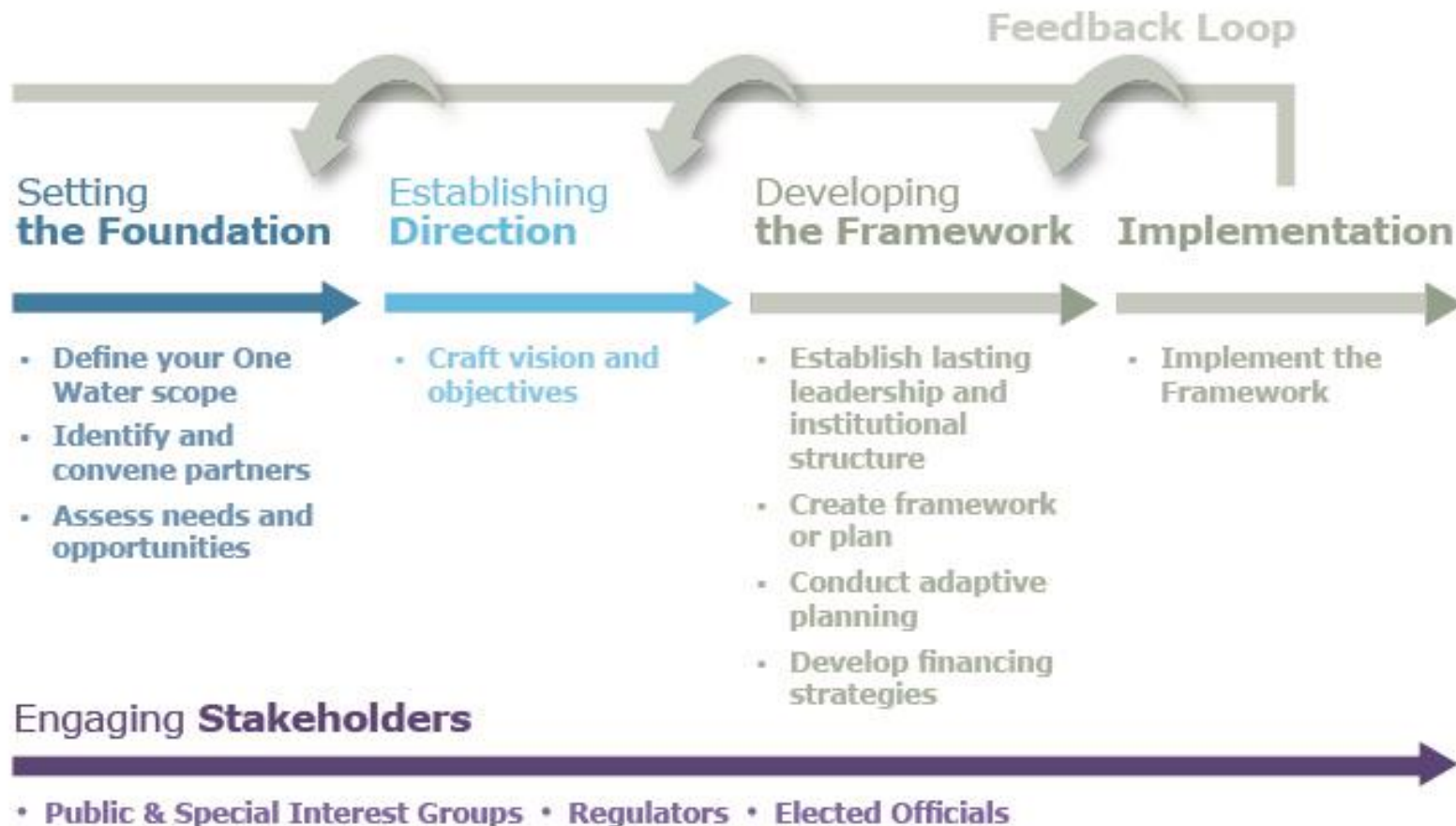
Blueprint
for **One Water**
WRF PROJECT 4660



The Blueprint Provides Step-by-step Guidance



First, Getting Started on the Path to One Water



Each Blueprint Step Highlights Tangible Actions, Outcomes, Challenges

Define Your One Water Scope

One Water can look very different from one place to the next depending on your climate and geography, water resources, and environmental stressors. Developing a One Water framework begins with defining what One Water is or could be for your entity.

IMPORTANT ACTIONS

- ✓ Determine the challenges that your entity, community, and region are facing that may impact long-term water supply reliability, water resource resilience, or water quality needs.
- ✓ Reach out to other cities and utilities of similar size and with similar attributes that have implemented a One Water approach for insights to seed internal dialogue.
- ✓ Consider using a “re-imagining” exercise to explore how you might do things differently if you were creating your system from scratch.
- ✓ Consider what your organization is already doing or planning for to enhance sustainability and determine how best to leverage these existing activities.
- ✓ Decide what issues you want to address with an integrated One Water approach and what form it will take. Will this be a simple framework or a comprehensive plan?
- ✓ Begin to identify internal and external partners to include in the development of your One Water approach.



KEY OUTCOMES

- A rough definition of One Water for your entity including what will and won't be included



POTENTIAL CHALLENGES

- Identifying innovative approaches to water management
- Thinking big
- Defining a workable scale and scope

Bay Area Regional Reliability Partnership Established Early Foundation for Success



Keys to BARR Success – Memorandum of Understanding

balanced
regional
transparent
inclusive
share information
work cooperatively
commit staff time
equitable

For more information:

Bay Area Integrated Regional Water Plan

<http://tinyurl.com/BayAreaWaterPlan>

Craft Vision and Objectives

- Establishes an overarching vision and develops objectives



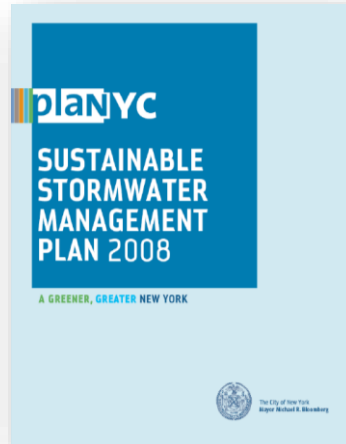
KEY OUTCOME

High-level document summarizing the vision and objectives for your framework

NYC DEP - One Water As a Unifying Framework for Multi-faceted Initiatives



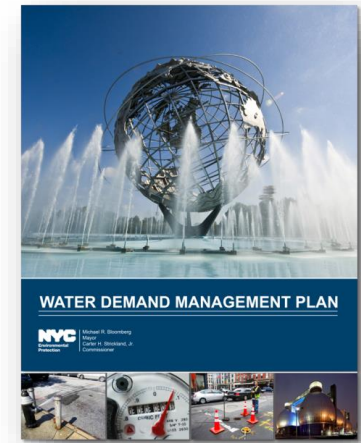
2007



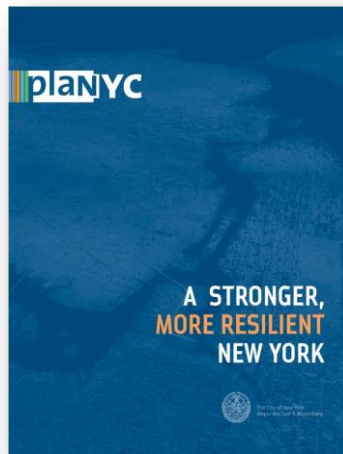
2008



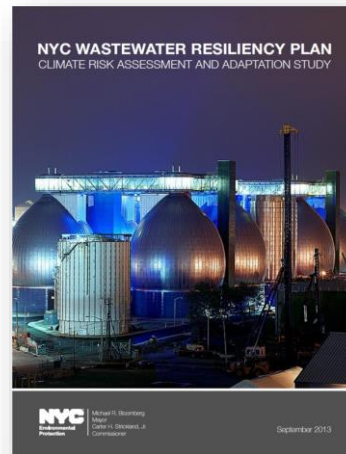
2010



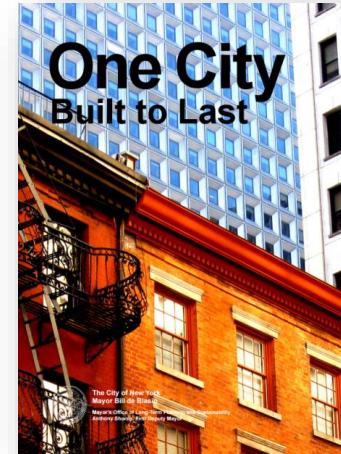
2013



2013



2013



2014



2015

New NYC Citywide Vision and Guiding Principles Sets Direction for Integrated Water Management

Guiding Principles:

- Integrate management of water resources and policies
- Cultivate climate resilience
- Contribute to a livable city
- Improve the health of local watersheds
- Provide flood protection
- Provide reliable, secure, and clean water supply
- Implement, monitor, and maintain a reliable and resilient wastewater system

Engage Stakeholders

- Engagement needs to occur externally with elected officials, regulating bodies, special interest groups, technical advisors, and the community



KEY OUTCOMES

- Establishment of trust and working relationships
- Active interest and support for One Water approach

LA's One Water Plan

Water Cabinet - Internal

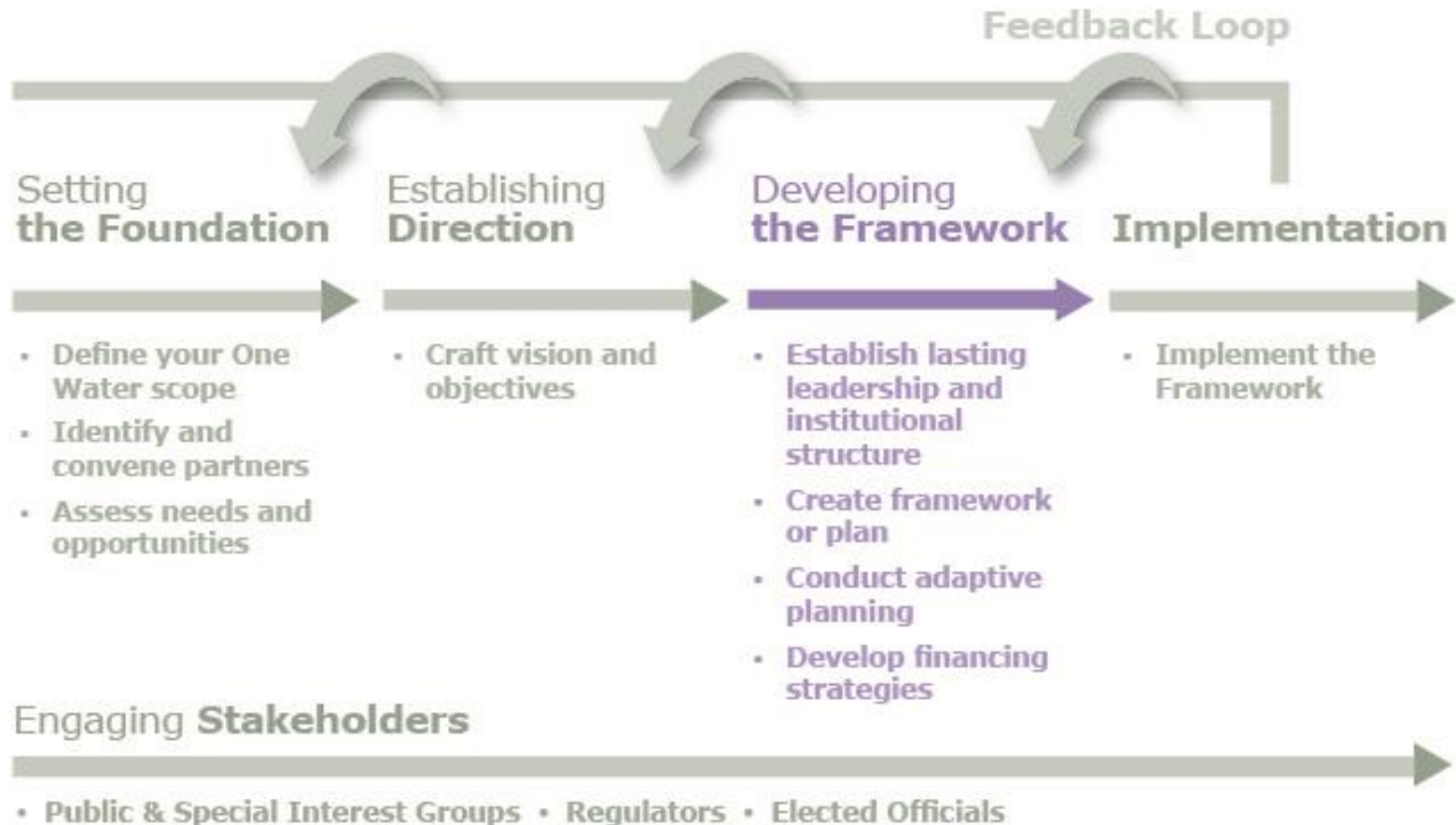
- Mayor initiated
- Consisting of key department heads, and outside advisors
- Intent to benefit or supplement ongoing projects



• Extensive Stakeholder and Public Engagement

- LADWP and LA Sanitation considered diversity in the process and aimed for a diverse group of stakeholders—an approach they feel was key from the very beginning
- Special Topic Groups were formed
- Public participants became ambassadors of message

Next, Developing the Framework, Plan, or Program



One Water Efforts Can Range From Simple Unifying Frameworks to Comprehensive Detailed Plans

Resource Guidance



1–5
years



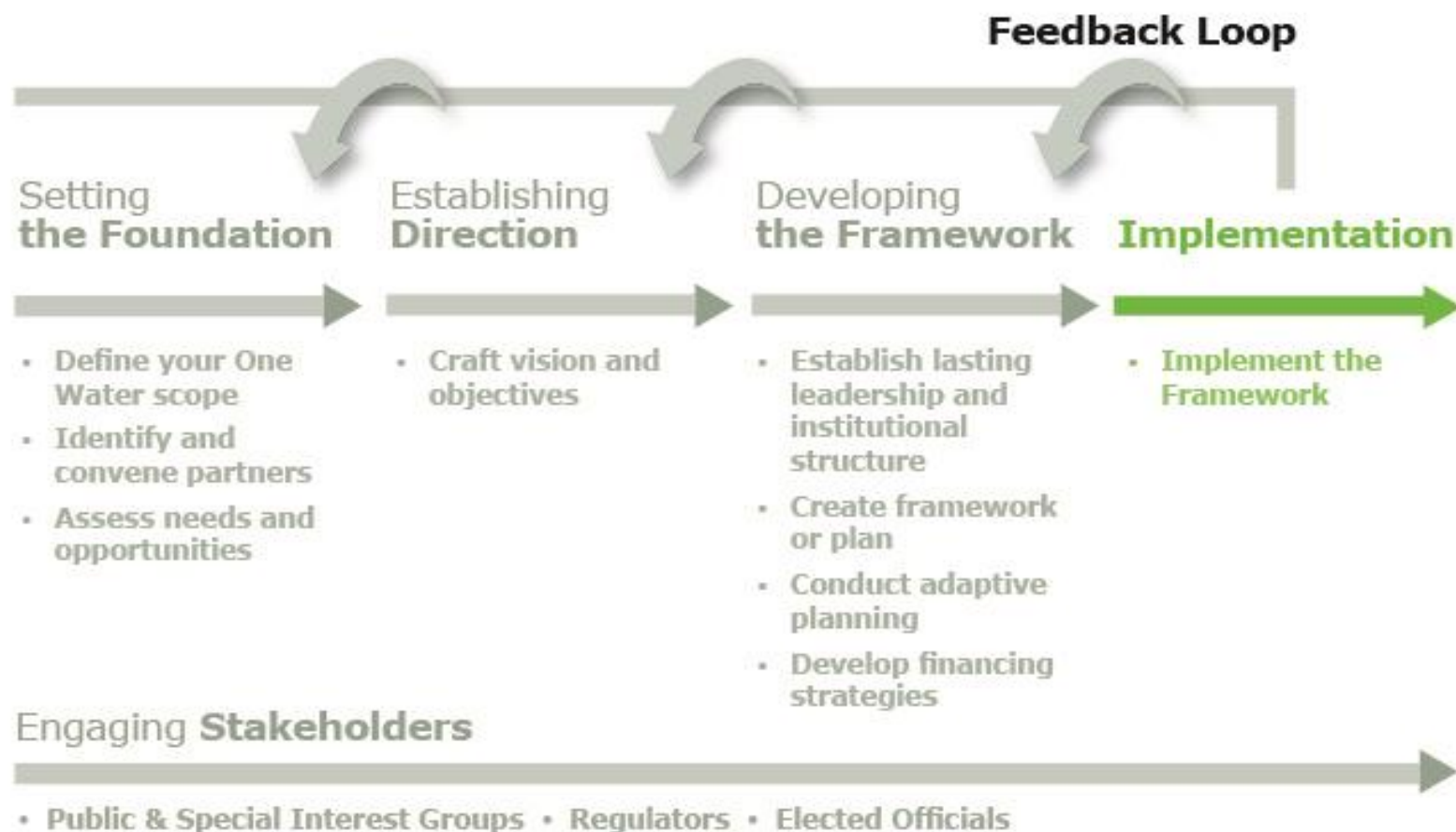
3–7
staff



\$500k–\$10M
using consulting
services

Finally, Implementation – Iterative Process

Take Early Action, Start Small, Build on Successes





Kitsap County Example



THE
Water
Research
FOUNDATION

Kitsap Peninsula...an “island” with unique water *quantity* challenges

- Kitsap Peninsula surrounded by salt water
- 80% of local water supply comes from aquifer
- Predominantly rain water recharge of aquifer
- Rainfall > ~ 0.5 inches/day
“wasted” as runoff to Puget Sound
- “Closing the loop” a necessity for long-term water management

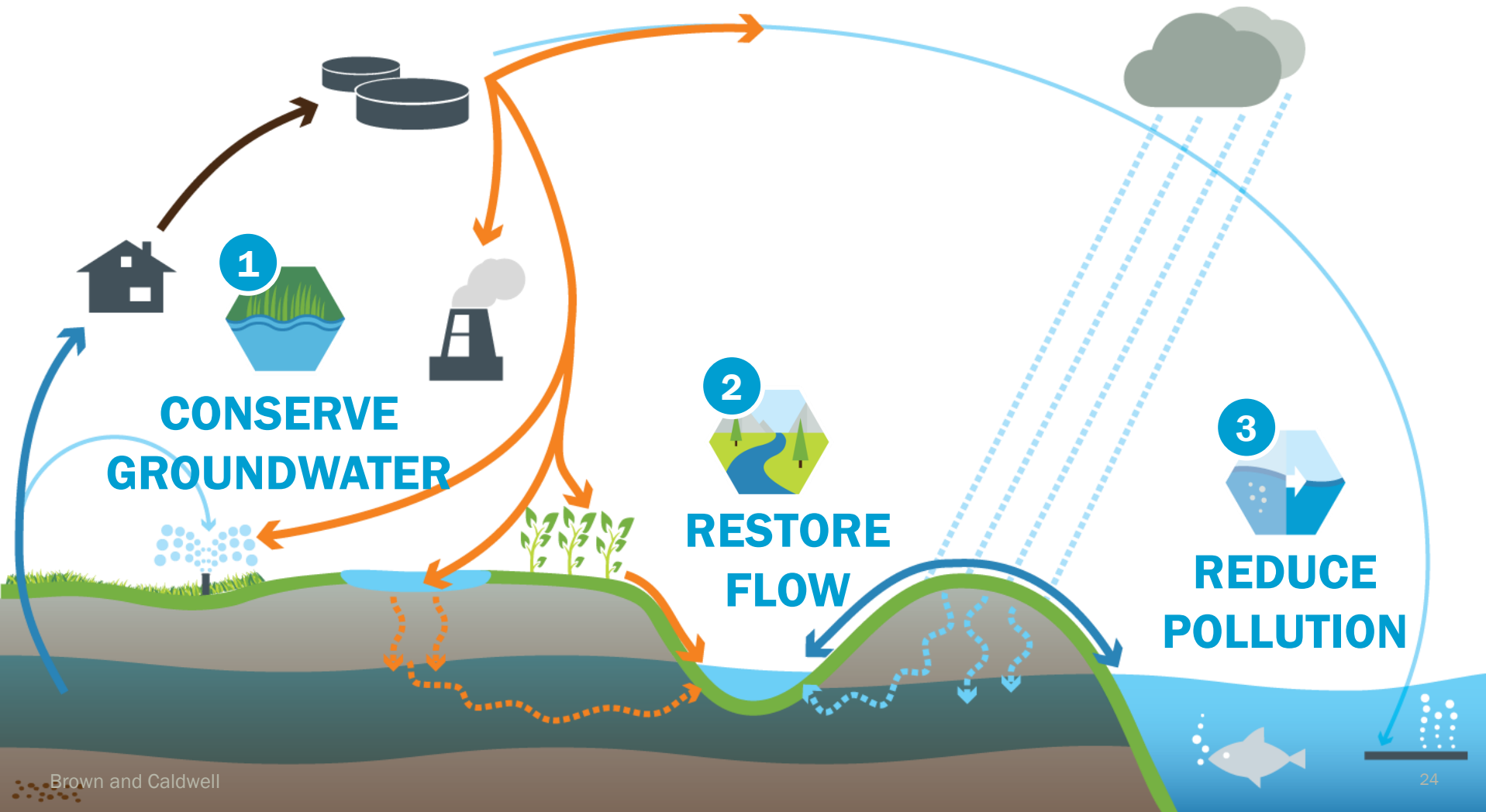


Kitsap Peninsula and Puget Sound *water quality* concerns

- Nutrient discharges to Puget Sound
 - Acidification
 - Dissolved oxygen (nitrogen)
- Stream flows and temp.
- Shellfish habitat



Closing the water loop – Water as a Resource



Projects that demonstrate the essence of the program



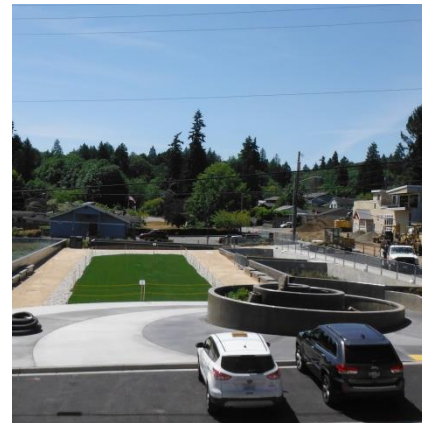
**Central Kitsap
Wastewater
Treatment Plant
(CKTP) Resource
Recovery Project**



**Clear Creek
Floodplain
Restoration**



**Kingston
Recycled
Water Project**



**Manchester
Stormwater
Park**

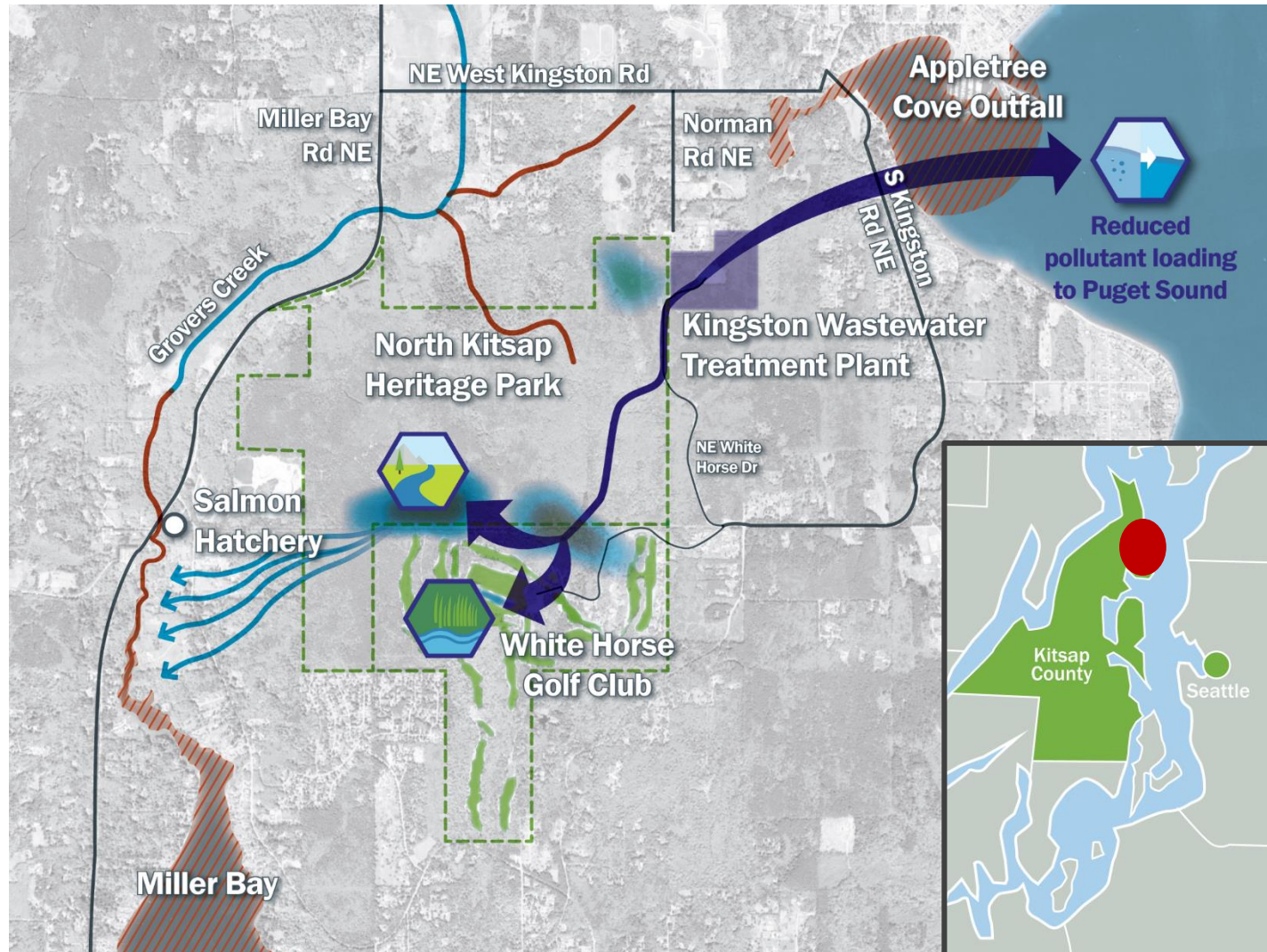
75% of CKTP discharge available for beneficial use

- Silverdale Water District partnership
 - Irrigation
 - Industrial
 - Hospital

<https://www.youtube.com/watch?v=vQ9sVG8B-gk>
- County considering aquifer recharge opportunities



Kingston area

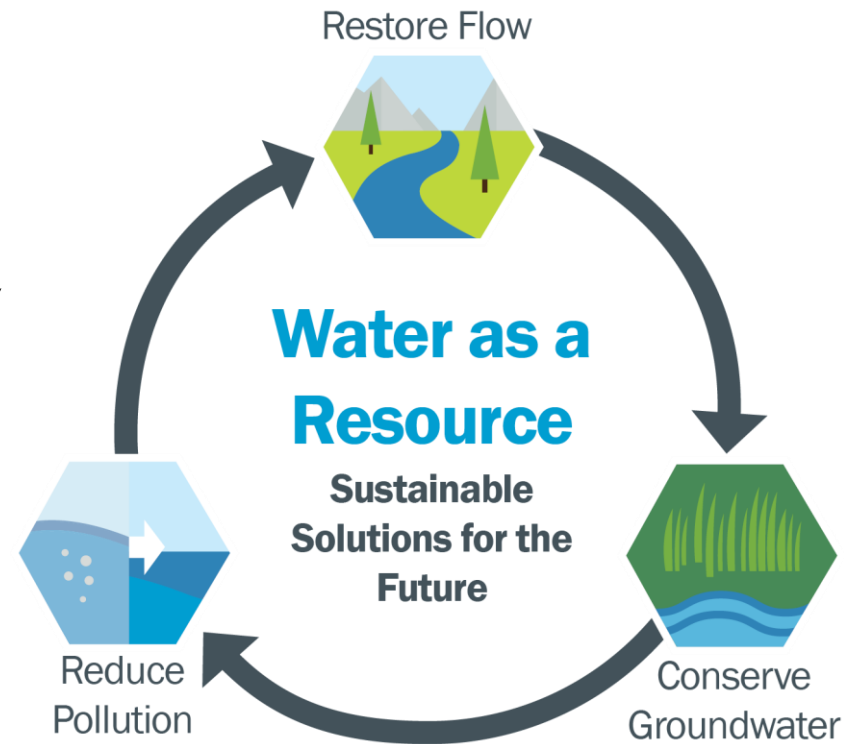


Kingston Stakeholder Engagement



The journey ahead...

- Continued stakeholder outreach
- On-going benefit/cost analysis to guide investment/operational choices
- Incorporate results of on-going studies (e.g., USGS)
- Regulatory collaboration
- USBR funding



Download a copy of the Blueprint

Blueprint
for **OneWater**
WRF PROJECT 4660



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<http://www.waterrf.org/Pages/Projects.aspx?PID=4660>

Please give your input on this survey!

Anticipating Trade-Offs of Using Alternative Water Supplies



<https://www.surveymonkey.com/r/4715AltSupplies>

Survey closes June 17th

