

Let's Talk About Water

A Guide to Developing Discussion Materials to Get
Your Community Deliberating



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North American Association
for Environmental Education

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Reviewers — Paul Biderman, Barbara Brown, Thomas Cech, Christa Daniels, R. Gregg Kaufman, Windy Lawrence, Betsy McBride, David Supp-Montgomerie, Elizabeth Trentanelli, Jen Wilding

Facilitators: Bora Simmons, Amy Lee, Michele Archie

Writer: Michele Archie



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2000 P Street NW | Suite 540 | Washington, DC 20036

202.419.0412 | naaee.org/eif

Got water problems?

Does your community, region, or state need to talk about water? If you are facing contentious, difficult water issues, and want to help people come together to set directions, provide guidance, or decide how to work together, deliberative public forums could help you move forward.

Let's Talk About Water is designed to help you create a framework and simple materials to guide these discussions and assist people in engaging deeply and productively with each other.

What is deliberation?

There are many ways to learn about and consider environmental issues. Lectures, debates, public meetings, social media exchanges, and dinner table conversations all give people a chance to share ideas, build knowledge, and talk about the problems we face together.

Often, these exchanges are divisive and unsatisfactory, and they don't lay the groundwork for making decisions and acting together. When we strip away approaches that tend to drive us apart rather than bring us together, we may find something that comes naturally to us: deliberation.

The Kettering Foundation, a research organization that has studied democratic practices for more than 30 years, uses the word *deliberation* for the “careful weighing of options against the things we hold valuable in order to make decisions.”

The Foundation's research suggests that “when issues are named and framed in ways that are rooted in what people hold deeply valuable, citizens are more likely to work together in addressing shared problems. Deliberating together, people work through disagreements, make sound choices, and reclaim their voice as citizens.”[†]

[†] Brad Rourke. *Developing Materials for Deliberative Forums*. The Kettering Foundation, 2014.

How can this guide help?

Deliberation works because it starts where problems really begin—with personal experiences and perceptions. This guide helps you create a framework for conversations that start at this root level and encourage participants to look at the costs and consequences of possible solutions to find out what they, together, will or will not accept as a solution.

Supporting materials can help make these deliberations easier by focusing a group on three or four distinct approaches to address the issue, and importantly, on the tradeoffs of pursuing these approaches.

This document is a simple guide to creating a framework of approaches and a brief document that you can use to guide deliberative forums on water issues facing your community, state, or region.

What will you get in the end?

The process outlined here will help you complete a basic issue guide, which is organized around a framework—essentially a grid—of approaches, actions, and tradeoffs.

You can turn this into an attractive “issue advisory” using simple digital layout tools. On the Environmental Issues Forums webpage (naaee.org/EIF), there is a growing pool of [issue frameworks and advisories](#) on local, state, and regional water problems that you could choose to use or adapt for your own community and its particular water issues.

Before you get started—
team up!

How was this guide developed

You may want to get people talking about local, state, or regional issues, but communities, states, and regions don't develop issue guides—people do. Working with a diverse group of people to create your framework will help ensure that different views are included from the outset.

The point of framing issues for deliberation is to present a range of views and approaches that help bring underlying tensions and tradeoffs to the surface. Assembling a team that includes people with different perspectives will help ensure that a variety of views and motivations are clearly incorporated into your framework.

You might want to have one or two people knowledgeable about water issues on your team, but don't get "water expert heavy." Include people who may not know as much about the specifics, too, as well as those who have networks in the community that could help support programs. Who might be involved?

- Concerned residents and community leaders
- Water conservation and advocacy organizations (e.g., River Keeper, watershed groups)
- University faculty or students (e.g., in environmental studies, biology, or geography departments)
- Water advisory boards
- Water utilities
- Others with an interest in getting people talking productively about water issues

You may wish to do some informal interviews with, or a more formal survey of, community members before you dive in, or early in the process. This research does not to generate statistically usable data, but rather helps gauge community concerns and priorities, which is the perfect starting point for this five-step process.

Five steps to success

You'll go through five steps to create your water issue framework.

- Step 1:** **Name the Issue**
What is the problem you want to talk about?
- Step 2:** **Describe the Issue**
Why do people need to talk about this issue?
- Step 3:** **Choose Your Approach: Use, Adapt, or Make Your Own**
Do you want to use or adapt an existing framework on a similar issue or build your own?
- Step 4:** **Complete Your Issue Framework**
Which approaches, actions, and tradeoffs will guide a deliberative forum?
- Step 5:** **Review, Finalize, and Use**

Five parts of a deliberative issue framework

After completing this process, you'll have a water issue framework with five parts.

Through these steps, you'll complete five parts of an issue framework and finish with a simple guide that you can use to structure deliberative forums.

1. Title
2. Introduction that explains the issue
3. Descriptions of each of three or four options (strategies) for dealing with the issue—including potential downsides to taking that approach
4. Examples of actions that fit with each option
5. Examples of drawbacks or tradeoffs to each action

Five-part issue framework

Parts 1 & 2

Part 3

Parts 4 & 5

Issue Title & Description		
Option 1	Option 2	Option 3
Action Example &Tradeoff	Action Example &Tradeoff	Action Example &Tradeoff
Action Example &Tradeoff	Action Example &Tradeoff	Action Example &Tradeoff
Action Example &Tradeoff	Action Example &Tradeoff	Action Example &Tradeoff
Action Example &Tradeoff	Action Example &Tradeoff	Action Example &Tradeoff
Action Example &Tradeoff	Action Example &Tradeoff	Action Example &Tradeoff

Step 1: Name the Issue

What is the problem you want to talk about?

It might seem simple to give the issue a name, but getting this step right is your first step toward successful deliberations. Deliberative forums work best when they tackle a truly public issue that they recognize because it relates to the things they hold deeply valuable.

1st

What is the water problem your community needs to talk about?

2nd

Turn this description into a title for your issue guide.

A good title:

- Reflects the tension in the issue
- Conveys the difficult question that must be faced
- Accepts public responsibility for the solution
- Connects to the way that people see and experience the issue

Some titles that work:

Water in Colorado: How should we meet the challenges of increasing water demands and decreasing water availability?

Uncertain Waters: Navigating California's water priorities

This Drains to Your Creek: How should we manage stormwater runoff to protect Florida's urban watersheds?

A Water Turning Point: How should California manage our water in the 21st century?

Step 2: Describe the Issue

Why do people need to talk about this?

Most issue guides include a short introduction of one to three paragraphs that describes the problem and why it's important for people to discuss it, and poses a central question for the deliberations that will follow. A graphic could be added to provide more information.

1st

What are the key tensions that make this an important issue for your community to discuss?

2nd

What is the main question(s) that forum participants should discuss?

3rd

What simple background information could help people without specialized knowledge understand the issue?

4th

Now turn your answers into a one-to-three paragraph introduction for your issue guide.

Background

Tensions

Central question

Describing the Issue — An Example

See these three elements at work in the introduction to *This Drains to Your Creek: How should we manage stormwater runoff to protect Florida's urban watersheds?*

BACKGROUND

Alachua County receives over 50 inches of rainfall each year, and most of this arrives as small (less than 1 inch) storm events. As the rain falls on and flows across impervious surfaces (driveways, sidewalks, roofs, etc.), it captures pollutants such as fertilizers, animal waste, pesticides, and motor oil. Stormwater systems carry this runoff through a series of pipes, ditches, or swales to our creeks, rivers, and lakes. Eventually, stormwater runoff and the pollution it has picked up along the way reaches the Floridan aquifer. Over 90% of our drinking water supply is pumped from this vast underground reservoir.

CHALLENGES

Like many other Florida communities, Alachua County has experienced significant and rapid growth, with thousands of new people, homes, and businesses added to the map. As our urban footprint expands, the challenges of stormwater management, water conservation, and water quality protection have become increasingly complex... and often contentious.

There are no easy solutions to Florida's water quality challenges. What can we do as individuals and as communities to prevent stormwater pollution and improve water quality in our local water bodies? This booklet lays out three broad options or potential paths forward for addressing urban water quality and stormwater management challenges in Florida. Each option includes a few examples of potential actions to support that option and associated tradeoffs.

Step 3: Choose Your Approach: Use, Adapt, or Make Your Own

Do you want to use or adapt an existing framework on a similar issue or build your own?

As you look at the [collection of local and state water issue guides](#) on the Environmental Issues Forums website, consider whether you could use one of these as-is, or make small changes so it fits your issue and community. These strategies could save you time and effort. Keep in mind that your top priority is to provide a framework of approaches and information that helps participants consider approaches, actions, and tradeoffs rooted in their concerns, sense of the issue, and local situation.

If the framing of the issue and the background provided are not readily adapted to your situation, creating your own guide may make sense even if it takes more time.

Benefits and tradeoffs of different approaches

Use an existing guide Adapt an existing guide Make your own guide



Step 4: Complete Your Issue Framework

Which approaches, actions, and tradeoffs will guide a deliberative forum?

Using an existing framework? Move on to Step 5. Otherwise, use these steps to complete your framework.

Adapt an existing framework

What would make this framework work better for your community and the water issue you have chosen to address?

Some ideas:

- Change the title (see Step 1)
- Edit the introduction to fit your community and its particular situation (see Step 2)
- Use different background information specific to your area and issue
- Edit the descriptions of one or more of the three options
- Substitute some of the actions and tradeoffs with ones specific to your community

OR

Create a new framework for your water issue

You have already created a title and an introduction for your new issue framework. That's two of the five parts of an issue framework completed, with just three to go. In the pages that follow, you will be working with a "generic" water issue framework that provides a starting point for your new water issue framework. You'll find this starter framework in Appendix A.

The entire framework is available as a Word document, so you can easily edit and customize it.

1. Describe the options

Each option is an overall strategy or approach to resolving the issue, driven by a distinct view of what is most important or of most concern about the problem. Each option also sees water and its most important role or essential use differently.

Here are three general options to start with. You may wish to edit the descriptions to fit your community or issue more specifically. The trick to a good description is to make it persuasive. Ask: Why would someone who believes this way say this a better approach than the others?

Each option includes some possible downsides, which you may also want to edit. Ask: If this option worked perfectly, what are the tradeoffs we might then have to accept?

If you are creating a somewhat longer issue guide, consider making the option descriptions even more persuasive by adding a few paragraphs to provide more context. This might include a short story that illustrates how people who support this option view the problem, additional background that supports this perspective, and/or a little research to suggest the key parts of the issue each option seeks to address. (See an example of this on the following page.)

Points to consider

- Three or four options is ideal — fewer sets up a debate, and more are difficult to keep in mind, distinguish from each other, and make time to cover in the discussion.
- Include options that you don't like or completely agree with.
- Don't add a "do nothing" option. All of the options should agree that there is a problem to face.
- Ask: Are there widely shared concerns in your community that are not reflected in these options? If so, can you tweak the options to include them? Other points of view can also be raised during the forum, so don't worry about this too much.

Explaining an Option — An Example from the [Climate Choices](#) Issue Guide

Option 2 : Prepare and Protect Our Communities

When heavy rains fall, many residents of Miami find themselves ankle-deep in a mixture of rain, salt water, and waste surging up from the sewers. Farther north, more than 100 people died as a direct result of Super-storm Sandy, which also destroyed hundreds of thousands of homes and forced tens of thousands of people into shelters.

In Norfolk, Virginia, at high tide, the water now laps at the top of a concrete seawall built a century ago to protect the city. It frequently spills over, flooding the promenade and streets along the waterfront. The Unitarian Church of Norfolk can no longer afford the high cost of flood insurance. “We don’t like being the poster child for climate change,” minister Jennifer Slade told the *Washington Post*, adding that the congregation has no choice but to relocate. “I don’t know many churches that have to put the tide chart on their website [so people know whether they can get to church].”

A 2013 study shows eight US cities among the world’s top 20 for potential losses to buildings, transportation, utilities, and personal property from storm surges and rising sea levels. They include Miami, New York City, New Orleans, Boston, Philadelphia, and Baltimore.

In other parts of the country, the effects of climate change are different, but no less severe. California and much of the western United States have been parched by drought and seared by wild fires in recent years. Extreme weather has destroyed homes and ruined lives, and conditions continue to get hotter and drier. Wild fires are bigger, burning longer, and taking more lives than ever before. Federal wild fire appropriations have tripled to \$3 billion since the 1990s. Another \$1-2 billion is spent by states on wild fire protection. A recent NASA study projects that, if the current rate of climate change is not reduced, the US Southwest and Central Plains could face mega-droughts by the last half of this century, potentially lasting 30-35 years.

According to this option, preparing for and coping with changing conditions must be our top priority. We should work together now to secure our communities and strengthen our resilience in the face of climate-related impacts. That includes protecting our infrastructure—roads, bridges, and shorelines—and ensuring that the most vulnerable members of society have the support they need to adapt to the effects of a warming planet.

2. Select examples of actions that illustrate each of the options
Including four or five examples of actions for each option helps clarify what the option is about and focus the deliberation on specific solutions.

How to do this?

1st

In Appendix B, you'll find a spread of "Action + Tradeoff" cards, which offer a variety of actions from other water issue frameworks along with tradeoffs for each one. The cards are labeled with the option they fit best.

2nd

Cut the cards apart, and sort through them to select actions that best fit your community, issue, and situation. One way to sort is to make three piles for each option: yes, no, and maybe. Winnow them down until you have four or five per option. You can do this yourself or with a group of framing partners. If the winnowing process gets cumbersome with a group, try sorting the cards individually first and then comparing notes.

Use the extra cards to add your own actions.

Alternate approach

The starter framework identifies *types* of actions that fit each of the three options. Select four or five that fit your community and issue, and then make them specific by selecting actions from other frameworks or adding your own examples of these types of actions.

Points to consider

- Pick four or five actions per option.
- Include things that individuals, families, or groups of community members can do, in addition to what government, business, or nonprofits might do.
- Include actions that you don't like or completely agree with.

3. Add tradeoffs for each action

In deliberative frameworks, as in life, every action has a downside. Including these downsides in your framework helps people work through the consequences of an action for what they hold most valuable. For each action in your framework, add a tradeoff.

If you have used the “Action + Tradeoff” cards, you will already have a suggested tradeoff for each action example. You may use these or adapt them.

Points to consider

- Pair each action with a tradeoff.
- Focus the tradeoffs on underlying concerns and values.
- Avoid tradeoffs such as, “this will cost too much,” or “this just won’t work.”

As you come up with tradeoffs for each action, ask this question from the standpoint of someone who might support this approach or action: “Assuming success, I can accept fill in action EVEN IF fill in tradeoff.” Using this question helps you avoid tradeoffs that argue the approach or action will not work.

4. Advanced

Once you’ve completed these steps, ask what would you still need to change to make it work in your community. Is there a different option you feel you need to include that you can’t get from tweaking one of the three in the generic framework?

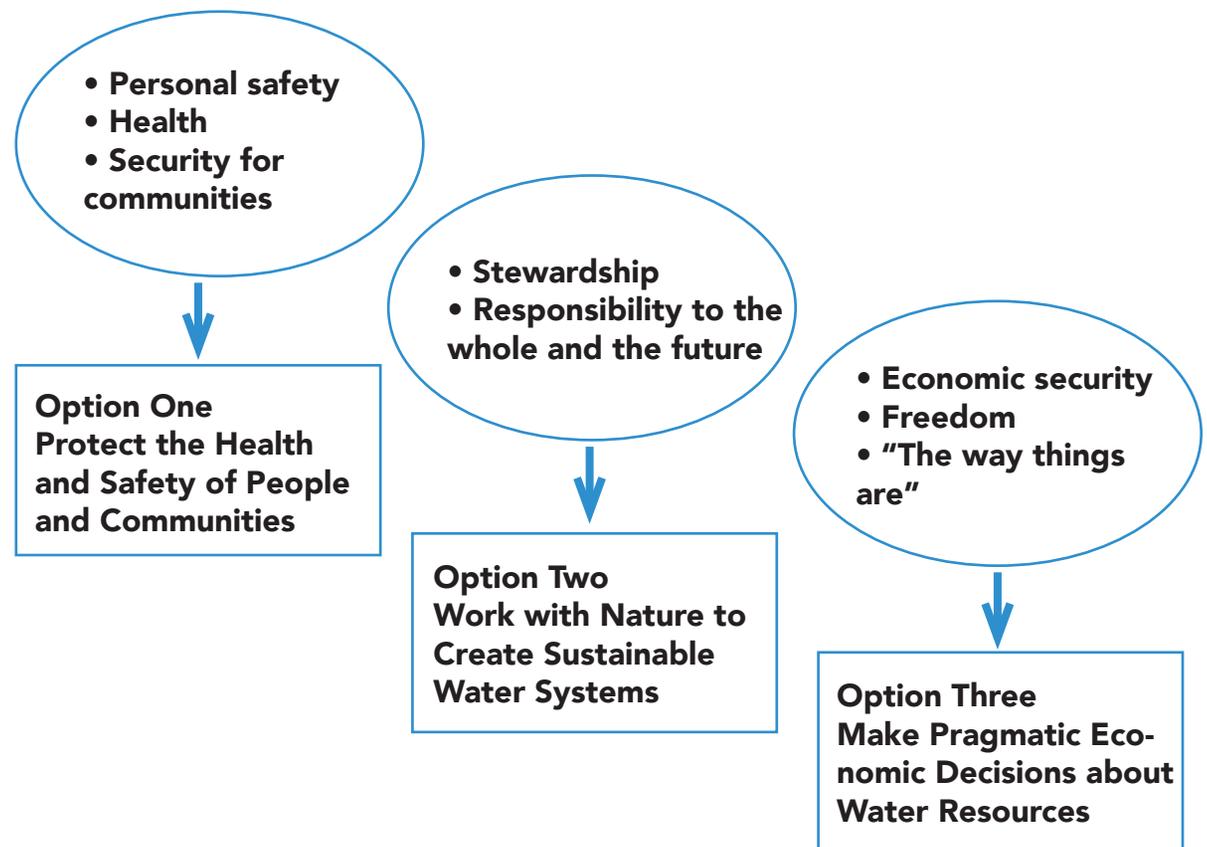
If you’re adding an option, or creating your own, keep in mind that options are rooted in different deeply held concerns, motivations, and commitments. These “things held valuable” distinguish the options from each other at a gut level.

What Distinguishes the Options in a Deliberative Issue Framework?

Each option is broad strategy that is rooted in a unique set of underlying concerns and motivations related to the issue. These “things held valuable” are deeply shared basic human concerns, like security, freedom to act as one wishes, and care for the vulnerable.

Because they are rooted in these underlying commitments, these options speak to our deepest human concerns. Each option is best presented in a way that makes its strongest case, “speaking in the voice” of a person who might hold that view.

To illustrate this idea, the graphic below shows the underlying concerns behind each options in the generic framework.



Step 5: Review, Finalize, and Use

Congratulations! Your issue framework is nearly complete.

Make sure your framework is fair, balanced, and ready to go.

1st

Put all of the elements into a single document. Use the customizable template to produce a simple issue guide, or look at the [collection of local and state water issue guides](#) for formatting ideas. If you add any background information, data, or graphics to the introduction, keep it short and focused on clarifying common questions about the issue. If you add data or graphics to one of the options, maintain balance by adding some brief factual information to *every* option (as was done in the [Climate Choices options chart](#)).

2nd

Ask a few people to review the guide. It helps to share the purpose of the guide and the deliberations that will follow, so that reviewers can offer appropriate feedback. You may want to include the introduction on pp. 3-4 for some background about deliberation. Asking reviewers specific questions can also help guide their input.

3rd

Revise your issue guide as appropriate. Now you're ready for forums!

An example of how to approach reviewers

This issue framework is designed to help people consider the pros and cons of different approaches to resolving this problem. It's not intended to be the last word on technical details, nor can we include everything in this simple document.

We want to foster deliberative conversations that start with personal experiences and perceptions, and encourage participants to look at the costs and consequences of possible approaches to the problem to find out what they, together, will or will not accept as a solution.

Our questions for you:

- Is anything inaccurate or unfairly presented?
- Are there important points of view that we have not included?
- Does this document seem fair and balanced?
- Have we missed any types of actions that are important in our community?

Resources

For more in-depth background and guidance for developing deliberative issue guides, see Brad Rourke, [Developing Materials for Deliberative Forums](#) (The Kettering Foundation, 2014)

For more information about organizing and facilitating deliberative forums, see the North American Association for Environmental Education's Environmental Issues Forums webpage at <https://naaee.org/our-work/programs/environmental-issues-forums/eif-moderator-resources>, or the National Issues Forums at www.nifi.org.

Issue guides on water and other environmental issues can be found on the [Environmental Issues Forums website](#), or through the [National Issues Forums](#), which also features [selected local and regional issue guides](#).

Appendix A: Generic Water Issue Framework

Your title:

Your introduction:

OPTION ONE Protect the Health and Safety of People and Communities	OPTION TWO Work with Nature to Create Sustainable Water Systems	OPTION THREE Make Pragmatic Economic Decisions about Water Resources
<p>Water is a public good. We should provide water fairly to protect the security and well-being of people and communities, and protect everyone from harm from floods and storm surges driven by extreme and changing weather patterns. Water should be used carefully and with minimal waste to ensure that everyone has enough clean water to meet their needs.</p>	<p>Water is part of nature. We should create water systems that are sustainable for people and nature. Many of our water systems work against nature rather than with it, and nature often gets short-changed. Human communities rely on a healthy environment, so we need to make it top priority.</p>	<p>Water is a resource essential to our livelihoods and our quality of life. We should supply plenty of clean water where people and businesses want it. Government and other power brokers should stop manipulating who gets water, and we should make water allocation decisions using markets so that water goes to its highest economic good.</p>

Option One: Protect the Health and Safety of People and Communities		
Description	Water is a public good. We should provide water fairly to protect the security and well-being of people and communities, and protect everyone from harm from floods and storm surges driven by extreme and changing weather patterns. Water should be used carefully and with minimal waste to ensure that everyone has enough clean water to meet their needs. But this focus on human needs could create or ignore longer-term, systemic environmental problems. And the requirements of this approach could impinge on personal and corporate freedoms.	
	Types of actions that fit this option	Tradeoffs
	1) Plan for sufficient supply of clean water to meet communities' needs	Focusing on human needs could shortchange the environment and wildlife.
	2) Require water conservation practices for agriculture, oil and gas extraction, and other industries	The cost of meeting these requirements could make industries less viable.
	3) Use incentives to adjust water use	Incentive systems allow the government to pick and choose winners and losers in the market.
	4) Restrict development where it could threaten water supplies, where water supplies are already contaminated, or where rising flood levels or storm surge threaten.	Restrictions would interfere with private property rights, and in some places would offer little protection from catastrophic flooding due to extreme weather and changing climate.
	5) Use technology that minimizes waste and pollution	Technologies can have unanticipated side effects and can be expensive and uncertain to develop.
	6) Research and require best management practices to reduce pollution and waste from farms, industry, and other water users	Requirements like these can impose one-size-fits all solutions on businesses and communities, which may unfairly burden small and struggling communities and businesses.
	7) Enforce strict water quality regulations, especially for drinking water	Regulations can be expensive to meet and enforce, decreasing the international competitiveness of US businesses.
	8) Engage residents as community scientists to help monitor and identify pollution problems.	This could create a sort of vigilantism.

Option Two: Work with Nature to Create Sustainable Water Systems		
Description	Water is part of nature. We must create water systems that are sustainable for people and nature. Many of our water systems work against nature rather than with it, and despite some efforts, nature often gets short-changed. Human communities are intertwined with a healthy environment, so we need to make it top priority. But this approach may involve changes that impinge on personal choices and freedom and commit resources to environmental protection at the expense of more immediate community needs.	
	Types of actions that fit this option	Tradeoffs
	1) Ensure that enough water is kept in rivers and streams to support natural areas and wildlife	When there is not enough water to go around, this could disadvantage human communities.
	2) Protect, restore, and construct where needed natural flood protection, water storage, and water filtration systems like wetlands, groundwater recharge areas, and floodplain buffers	This approach could impinge on private property rights by limiting development potential.
	3) Educate to shift individual behaviors and awareness of the environmental impact of personal actions	Education can be a long-term strategy with few guarantees that personal behaviors will change.
	4) Price water to reflect all of its costs, including environmental impacts, the costs to maintain infrastructure to transport water, etc.	This could make it very expensive for cities, farms and other water-intensive businesses to operate in some parts of the country, making water a privilege rather than a basic right.
	5) Limit development to match available water supplies and protect environmentally sensitive areas	This would impinge on personal and corporate freedoms and property rights.
	6) Recycle industrial and drinking water to minimize the amount of water we need to take from nature	Recycling water for some uses creates safety concerns and an “ick” factor that are hard to overcome.
	7) Mandate water conservation, strict controls on pollutants, and land-use regulations that minimize polluted runoff from developed areas and farms	Regulations can be expensive to meet and enforce, putting an extra burden on US businesses and interfering with local control.
	8) Sharply reduce carbon emissions to slow the rate of climate change and occurrences of extreme weather.	The dramatic actions required to counter the worst effects of climate change could harm the economy and infringe on personal freedom.

Option Three: Make Pragmatic Economic Decisions about Water Resources		
Description	Water is a resource essential to our livelihoods and our quality of life. We should supply plenty of clean water where people and businesses want it. Government and other power brokers should stop manipulating who gets water, and we should make water allocation decisions using markets so that water goes to its highest economic good. But treating water as a commodity may maintain or exacerbate disparities in water availability and quality, possibly pricing certain uses like agriculture and environmental protection out of the market when others are willing to pay more.	
	Types of actions that fit this option	Tradeoffs
	1) Build infrastructure to get water where it is needed most, and keep floods and storm surge from causing economic damage	Moving water around is costly and inefficient. Moving water around and building retention ponds, dikes, and other water containment structures can rob ecological systems of water flows they naturally require.
	2) Use markets to distribute and ensure clean water	Markets advantage water uses with higher economic value, and can disadvantage less-well-off rural areas, traditional industries like farming, and healthy natural areas.
	3) Create accessible information to guide water decisions	This is an expensive undertaking that doesn't guarantee that the results will be used properly to address the issue.
	4) Expand local control of water allocation	This could create or exacerbate regional advantages within states.
	5) Clarify existing water rights systems so it is clear who gets to use water	Many water rights systems are arcane and unfair, and should be reworked entirely rather than tinkered with.
	6) Use education to promote voluntary action to reduce waste and pollution	Relying on voluntary action is a slow and uncertain pathway to protecting water resources.
	7) Develop new water sources where water is needed	This would allow development to continue, even in places where the resources don't exist to support it, leading to "mining" water at a faster pace than it can be replenished.
	8) Encourage public/private partnerships to provide clean water	Clean water is a shared, public good that we should not leave open to profit motives.

Appendix B: Action + Tradeoff Cards

The following pages contain a collection of cards that pair action examples with tradeoffs. Most of the actions and tradeoffs are taken directly from existing water issue frameworks, sometimes edited slightly to make them more broadly applicable.

This is not an exhaustive list of actions that could fit under each option. Rather these cards are intended to provide a range of examples from different issues in different places that you can use as a starting point for developing your own list of four or five action/tradeoff pairs unique to your issue and location. Feel free to use these examples as-is, edit them, or generate your own ideas.

Cut along the dotted lines, and sort using the instructions on page 15. The cards are color-coded to make it easy to identify which option they best fit.

Option 1		Option 1		Option 1	
Action: Require farmers to use best management practices for water quality and quantity.	Tradeoff: The costs of compliance to farming operations puts an undue burden on this sector.	Action: Apply recreational user fees from lakes and reservoirs to fund water quality protection.	Tradeoff: This may divert funding away from recreational facilities, or make it more costly for lower-income people to enjoy them.	Action: Adopt strict water policies and regulations (at multiple levels) to protect human health and safety.	Tradeoff: May disadvantage the environment and impose high social costs.
Option 1		Option 1		Option 1	
Action: Pass city ordinances governing how residents and businesses can use water.	Tradeoff: Municipal restrictions on water consumption would privilege water users outside city limits, encouraging the spread of non-compliant housing/business in the outskirts.	Action: Establish convenient, centralized hubs of information about current water quality problems, flood hazards, and threats to public health.	Tradeoff: May involve more government authority, which could interfere with local and individual control.	Action: Relocate from areas of contaminated water or high flood-risk locations to areas of lower risk.	Tradeoff: Limits personal choices and lifestyles; disrupts social and economic stability, and unfairly harm low-income people least able to afford to move.
Option 1		Option 1		Option 1	
Action: Increase public funding to clean and protect water.	Tradeoff: This would require increasing taxes or diverting limited funds away from other priorities.	Action: Mitigate and clean up contamination where possible.	Tradeoff: Cost of clean ups diverted from other projects, prevention could be more cost-effective.	Action: Strict policies and regulations (local and regional level) are needed to protect health and safety ensuring sufficient water supply for the current, and growing, population.	Tradeoff: This could impact the population and economic growth. Adjusting current lifestyles can seem daunting or unfair.

Option 1		Option 1		Option 1	
Action: Maintain and plan for a future with a sufficient water supply for human consumption, agricultural use to ensure food security, and recreational uses to ensure job security	Tradeoff: Focusing water availability on human needs could limit or decrease water quantity in rivers and impact the recreation economy (fishing, boating, hunting, snowmaking at ski areas, etc.).	Action: Create and enforce stricter laws to ensure mining and natural gas extraction does not use excessive water depleting local rivers, streams, and municipal water supplies.	Tradeoff: Limiting water use could harm oil and natural gas businesses, jobs, and tax revenues.	Action: Use public education and outreach to ensure individuals can make informed decisions about water quantity issues, and encourage people to become engaged in the issues.	Tradeoffs: These programs are difficult to implement due to lack of time in the classroom, available resources, and technical expertise. Short term campaigns work, but not for long-term change.
Option 1		Option 1		Option 1	
Action: Plan for increased flooding from extreme weather and storm surge by assessing vulnerable populations and updating hazard mitigation and emergency response plans.	Tradeoff: Some coastal and other areas are likely to be hard-hit by climate change effects, making it impossible to protect everyone, especially those with few resources or special needs.	Action: Upgrade storm-water systems, levees, and emergency water-supply systems, and build roads and transit above rising flood and storm-surge levels, driven by climate change.	Tradeoff: This will change the landscape in many communities and does not guarantee adequate protection.	Action: Price water in “tiers,” with a lower price for meeting basic household and commercial needs and steep price increases to discourage excessive use and waste.	Tradeoffs: By charging more for a service (water) than it costs to provide it, governments are putting themselves in business when they should be looking out for the public good.
Option 1		Option 1		Option 1	

Option 1		Option 1		Option 1	
Option 1		Option 1		Option 1	
Option 1		Option 1		Option 1	

<p>Option 2</p> <p>Action: Set development boundaries and work with local authorities and insurance companies to remove development from the most flood-prone areas, allowing the natural flooding cycles to resume.</p>	<p>Tradeoff: There could be unintended cultural or economic consequences that disproportionately affect lower income communities. Enough money will always find its way around restrictions.</p>	<p>Option 2</p> <p>Action: Price water according to real cost (including ecological cost) as an incentive to conserve. This could be done through taxation with funds dedicated to environmental protection.</p>	<p>Tradeoff: Higher rates would put additional economic pressure on those already facing hardship, and could raise the cost of food.</p>	<p>Option 2</p> <p>Action: Develop and implement technologies that harvest and reuse water on-site to reduce the demand for water from reservoirs.</p>	<p>Tradeoff: Best Management Practices and specifications for reuse would require costly measures, without which the safety of water could not be guaranteed.</p>
<p>Option 2</p> <p>Action: Provide an educational experience for all watershed residents that helps them to understand and connect to the natural ecosystem so that they will adapt to the limits of nature.</p>	<p>Tradeoff: This educational focus privileges a perspective that de-emphasizes economic, social, and technical solutions.</p>	<p>Option 2</p> <p>Action: Restore river systems above reservoirs to their natural flow patterns (most have been straightened).</p>	<p>Tradeoff: This may take fertile farm land out of production and interfere with private property.</p>	<p>Option 2</p> <p>Action: Provide incentives and/or recognition for replacing traditional landscapes with native, low-water landscaping.</p>	<p>Tradeoff: Uncertain effects on property values and could hurt local businesses that provide landscape maintenance services</p>
<p>Option 2</p> <p>Action: Manage reservoirs to serve only those priority functions (drinking, recreation, navigation, etc.) that can be realistically sustained.</p>	<p>Tradeoff: Some uses and practices relying on reservoirs must be abandoned, or alternate sources of water must be found to meet all needs.</p>	<p>Option 2</p> <p>Action: Develop and implement technologies that harvest and reuse water on-site to reduce the demand for water from reservoirs.</p>	<p>Tradeoff: Best Management Practices and specifications for reuse would require costly measures, without which the safety of water could not be guaranteed.</p>	<p>Option 2</p> <p>Action: Install “green infrastructure” for stormwater conveyance, storage, and treatment systems (e.g., rainwater harvesting, bioswales, and enhanced stormwater ponds)</p>	<p>Tradeoff: May commit resources to environmental protection at the expense of more immediate community needs (such as health and safety).</p>

Option 2		Option 2		Option 2	
Action: Use aggressive public education and social marketing campaigns to shift cultural norms.	Tradeoff: Might conflict with personal choices and consumer preferences; lead to increased social pressure surrounding new behaviors.	Action: Adopt and impose impact fees on certain human activities and use revenues to educate and promote behavior change.	Tradeoff: Could place an unfair burden on economically disadvantaged communities and increase costs of providing drinking water.	Action: Change crops grown in areas where water is naturally scarce to those that require less irrigation	Tradeoff: Might disrupt the economy of farming communities built around water-intensive crops, and reduce the variety of food available.
Option 2		Option 2		Option 2	
Action: Discourage in-migration and new development (e.g., with urban growth boundaries, impact fees, tourism taxes).	Tradeoff: Restricts personal freedoms	Action: Manage groundwater withdrawals for healthy lake and stream levels.	Tradeoff: May decrease local farmer's competitiveness in national/global markets	Action: Create state policies that require a minimum amount of water is left in rivers and streams to support stable water levels	Tradeoff: To be most effective, policies would require standards for different places and types of water ways – complicated and costly to implement
Option 2		Option 2		Option 2	
Action: Provide government funding to take agricultural land out of production by supporting ecological restoration or tree planting on private lands	Tradeoff: Decreases the amount of productive land in agriculture, reducing economic (and tax) revenue and the amount of food grown	Action: Educate the public about how their food purchases support agricultural practices that impact water bodies.	Tradeoff: No guarantee that people will make different food choices to influence groundwater use.	Action: Use tools such as conservation easements, zoning ordinances, and floodplain overlays to protect natural areas that provide buffers from floods and storm surge.	Tradeoff: Unless we slow carbon emissions quickly, these measures won't protect our communities for long, as natural areas are inundated and altered by climate change.

Option 2		Option 2		Option 2	
<p>Action: Impose water use restrictions during droughts and in areas with water supply issues, and enforce them with hefty fines.</p>	<p>Tradeoff: It is difficult to enforce restrictions fairly, and they can cause hardships for businesses that rely on water.</p>	<p>Action: Support home and commercial conservation by creating a new water-wise standards requiring that toilets, washing machines, faucets, showers, etc. meet strict water-efficiency levels</p>	<p>Tradeoff: Forcing people to buy water-efficient appliances will limit personal choice, and won't take care of wasteful appliances or personal behaviors that already exist.</p>		
Option 2		Option 2		Option 2	
Option 2		Option 2		Option 2	

Option 3		Option 3		Option 3	
<p>Action: Allow citizens to form water management cooperatives that allocate water resources based on local needs.</p>	<p>Tradeoff: Regional and statewide needs for water may not be met, resulting in inequitable distribution of water resources</p>	<p>Action: Privatize reservoir management to ensure priority local use.</p>	<p>Tradeoff: Privatization can create a system of management that prioritizes company profitability over environmental and community needs.</p>	<p>Action: Allow water quality credits to be traded on open markets where supply and demand determine the optimal levels of investment in treatment and source control.</p>	<p>Tradeoff: Complicated; difficult to get buy-in; may benefit investors at the expense of the environment</p>
Option 3		Option 3		Option 3	
<p>Action: Build additional reservoirs nearby as needed to keep up with the current rate of development.</p>	<p>Tradeoff: New reservoirs would take productive land out of use, and will eventually present future generations with the same challenges.</p>	<p>Action: Trust and support agricultural producers to be stewards of the land without government interference.</p>	<p>Tradeoff: The cost burden to producers of implementing best management practices without government funds could harm the farm economy.</p>	<p>Action: Incentivize pollution prevention practices, programs, and partnerships between water utilities and businesses, schools, non-profits, towns, and cities.</p>	<p>Tradeoff: Some partners may not have the human or financial capital to implement comprehensive, sustainable programs.</p>
Option 3		Option 3		Option 3	
<p>Action: Implement a water pollutant cap and trade system.</p>	<p>Tradeoff: Trading on the right to pollute actually adds value to pollution without compensating loss to water quality.</p>	<p>Action: Identify new sources for drinking water to supplement declining reservoirs.</p>	<p>Tradeoff: Taking water from another source may deprive current users of needed water resources and introduce conflict.</p>	<p>Action: Keep local water local, local agriculture viable, and support eco- and agri-tourism ventures that bring outside dollars into our local economy.</p>	<p>Tradeoff: Could have unintended consequences; loss of traditional revenue streams (e.g., from agricultural services).</p>

<p>Option 3</p> <p>Action: Implement state policy to protect and guarantee existing water rights into the future</p>	<p>Tradeoff: Emphasizes certain interests (i.e., agriculture) over other social and economic interests (e.g., recreation, lake home values)</p>	<p>Option 3</p> <p>Action: Educate and support farmers to employ best practices in their water use, including short and long term economic benefits of doing so</p>	<p>Tradeoff: Ag and extension educators are less available due to state budget cuts and farmers may be leery of trusting “help” from just anyone.</p>	<p>Option 3</p> <p>Action: Develop recharge areas that enhance groundwater levels while allowing pumping in other areas.</p>	<p>Tradeoff: Effectiveness of these strategies isn’t scientifically validated. Depending on the source of recharge water, there may be concerns about contamination or diverting water from natural areas.</p>
<p>Option 3</p> <p>Action: Conduct public research and educate farmers on alternative crops that require less water and are economically viable</p>	<p>Tradeoff: Requires additional tax funding to support research and education programs</p>	<p>Option 3</p> <p>Action: Invest in innovative technologies to monitor water consumption and current conditions to optimize agricultural, industrial, and municipal water use.</p>	<p>Tradeoff: New technologies require considerable capital investments not everyone can afford and may have unanticipated consequences for human and ecological health.</p>	<p>Option 3</p> <p>Action: Transport more water from high mountain western slope streams to front range cities and agriculture, requiring new or expanded infrastructure, reservoirs, and storage aquifers.</p>	<p>Tradeoff: This could hurt mountain communities by reducing available water for agriculture and river flows, damaging river ecosystems; and increase their reliance on nonrenewable groundwater.</p>
<p>Option 3</p> <p>Action: Allow water to be traded on open markets where supply and demand determine the cost of water and its best uses (“water banks”).</p>	<p>Tradeoff: Varied environmental conditions from climate change increase risk of market disequilibrium.</p>	<p>Option 3</p> <p>Action: Provide enough water to meet the needs of businesses and year-round residents (e.g., by developing new water sources).</p>	<p>Tradeoff: May decrease water availability and water quality and stress natural ecosystems. Also, who decides how much is “enough?”</p>	<p>Option 3</p> <p>Action: Avoid extended litigation by using markets to allocate water among competing uses such as urban, agriculture, energy production, flood control, and maintaining habitat.</p>	<p>Tradeoff: Determining ownership under existing water rights is essential for markets to function properly, so litigation won’t go away as part of the water allocation system.</p>

<p>Option 3</p> <p>Action: Local governments and regional water authorities should become water self-sufficient by building more, smaller dams for flood control, aquifer recharging, and local water storage in drought.</p>	<p>Tradeoff: This will lead to more fragmentation of water management—and more likelihood that environmental protections will get short-changed as a plethora of new dams are proposed.</p>	<p>Option 3</p>	<p>Option 3</p>	<p>Option 3</p>	<p>Option 3</p>
<p>Option 3</p>	<p>Option 3</p>	<p>Option 3</p>	<p>Option 3</p>	<p>Option 3</p>	<p>Option 3</p>
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