

The Next Crisis in America: Domestic Water

A Topic Proposal for the
National Federation of High Schools Topic Selection Committee

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I. Introduction

As America faces the reality of a pandemic, COVID-19, many of us are finding time to watch old movies. Perhaps, your list includes the following: *Planet of the Humans* (2020), *Dark Waters* (2019), *Gasland* (2010) and *Gasland Part II* (2013), *Promised Land* (2012), *Water Life* (2009), *Unforeseen* (2007), *Betrayed* (TV, 2003), *Erin Brockovich* (2000), *Civil Action* (1998), *The River* (1997), *The Last River Men* (1991), *Speck in the Water* (1976), *China Town* (1974), and *Doomwatch* (1972). If not watching movies, every one of us should take “pause” and consider the current state of our water quality in the U.S., whether it is drinking water, contaminants, pollution, infrastructure, scarcity, and/or security. This issue is critical to our health and well-being. In fact, the last time high school debaters argued this topic was 1986.

Thirty-four years later, water quality in the U.S. is still mired in a crisis situation. Erin Brockovich, environmental activist, argues, “Even when safety guidelines and regulations are in place, the rate of chemicals acceptable by law may be far higher than what is genuinely safe” (Brockovich, 2018). “For me, being green means cleaning up the water. Water is the key” (Vidal, 2008). But Brockovich’s words went unheeded, culminating in public health disasters like the ongoing Flint, MI, water crisis. On Sunday, March 15, 2020, CBS News’ *60 Minutes* aired the “The Crisis in Flint,” which examined the state of Flint’s water system half a decade after it was found to be laden with lead and other contaminants. Dr. Mona Hanna-Attisha, Flint pediatrician, water advocate, and author, raised the alarm five years ago regarding the “toxic water” children are drinking. In this episode of *60 Minutes*, she concludes from a comprehensive 2019 study of 174 children in Flint, “...80% will require help for a language, learning or intellectual disorder”

(Alfonsi, 2020). But, Flint, MI, is not the only community facing critical levels of contaminants in their water. The Environmental Working Group (EWG), a non-profit focused on raising consumer awareness of various products and their hazards to humans and the environment, released a study examining 44 cities in the US. Their findings conclude:

...in 43 out of 44 cities tested, the drinking water was contaminated. The problem is PFAS, a.k.a. “forever chemicals,” a.k.a. per and polyfluoroalkyl substances. These substances get into the water as a result of the production of chemicals that are used to make many common products, including Teflon and dental floss. They’re called “forever chemicals” because they stay in your body basically forever. (Duncan, T.A., MIC, January 28, 2020)

Seth Siegel, lawyer, activist, author, entrepreneur, presents more disturbing news in his new book, *TROUBLED WATER: What's Wrong with What We Drink*, regarding these “forever chemicals” and other dangerous ones:

Benefiting the economic interests of water utilities and industrial or governmental polluters, the changes wrought by the 1996 Amendments to the Safe Drinking Water Act nearly guarantee that potentially harmful chemicals will not be regulated. In the decades since the passage of the 1996 Amendments, more than two hundred chemical compounds have been proposed for EPA review. Of these, including perchlorate, the EPA has selected only twenty-six for investigation, and of that small group of twenty-six, only perchlorate and one other have been chosen for possible regulation. Neither has yet been regulated. (65)

Historically, federal laws are in place to provide clean and safe water quality standards. However, the complexity of these regulations is somewhat daunting and overwhelming. In other words, who is in charge? The Clean Water Act 1972 (CWA), amended in 1977 and 1987, establishes the nation’s water quality standards. The WQS (Water Quality Standards) are central to the Clean Water Act.

EPA, “Water Quality Standards Handbook Chapter 1: General Provisions,” October 2014, <https://www.epa.gov/sites/production/files/2014-10/documents/handbookchapter1.pdf>

1.2 Purpose of **Water Quality Standards**

WQS are the foundation for a wide range of programs under the CWA. They serve multiple purposes including establishing the water quality goals for a specific waterbody, or

portion thereof, and providing the regulatory basis for establishing water quality-based effluent limits (WQBELs) beyond the technology-based levels of treatment required by CWA Sections 301(b) and 306. WQS also serve as a target for CWA restoration activities such as total maximum daily loads (TMDLs). **WQS consist of the following elements: Designated use or uses such as “supporting aquatic life” or “recreation”** (which are described in Chapter 2 of this Handbook). **Water quality criteria necessary to protect the designated uses** (which are described in Chapter 3 of this Handbook). **Antidegradation requirements** (which are described in Chapter 4 of this Handbook). **General policies affecting the application and implementation of WQS that states and authorized tribes may include at their discretion** (e.g., mixing zone, variance, and critical low-flow policies, which are described in Chapter 5 of this Handbook).

These “water quality standards” in the CWA are designed to protect the integrity of the nation’s waters and safeguard marine life.

EPA, “Water Quality Standards Handbook Chapter 1: General Provisions,” 2014, <https://www.epa.gov/sites/production/files/2014-10/documents/handbook-chapter1.pdf>
States and tribes establish WQS to meet the objectives set forth in Section 101(a), which are as follows:

- Restore and maintain the chemical, physical, and biological integrity of the Nation's waters.
- Wherever attainable, achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.

The Clean Water Act requires states and tribes to protect bodies of water for their most sensitive uses.

EPA, “Water Quality Standards Handbook Chapter 3: Water Quality Criteria,” 2017, <https://www.epa.gov/sites/production/files/2014-10/documents/handbook-chapter3.pdf>

Additionally, when implementing WQS, if a water body has multiple designated uses with different criteria for the same pollutant, states and authorized tribes protect the most sensitive use, in accordance with 40 CFR 131.11(a).

Water quality standards are determined according to designated use(s).

Electronic Code of Federal Regulations, “Title 40: Protection of the Environment, Part 131—Water Quality Standards,” Aug. 21, 2015, https://www.ecfr.gov/cgi-bin/text-idx?SID=a6fcb55c5690cdc1e073774b6d49ad0f&node=40:22.0.1.1.18&rgn=div5#se40.24.131_13

A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria that protect the designated uses. States adopt water quality standards to

protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (the Act). “Serve the purposes of the Act” (as defined in sections 101(a)(2) and 303(c) of the Act) means that **water quality standards should, wherever attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water and take into consideration their use and value of public water supplies, propagation of fish, shellfish, and wildlife, recreation in and on the water, and agricultural, industrial, and other purposes including navigation.**

Another federal regulation, the Safe Drinking Water Act 1974 (SDWA), amended in 1986 and 1996, requires states to enforce water quality standards under federal supervision.

Kristi Pullen **Fedinick**, Mae **Wu**, Mekela **Panditharatne**, and Erik D. **Olson**, “Threats on Tap: Widespread Violations Highlight Need for Investment in Water Infrastructure and Protections,” May 2017, <https://www.nrdc.org/sites/default/files/threats-on-tap-water-infrastructure-protections-report.pdf>

Instituted in 1974, the SDWA requires the U.S. Environmental Protection Agency (EPA) to identify and regulate contaminants to ensure drinking water quality. States then are generally the primary enforcers of the law, subject to EPA oversight. These requirements are meant to protect us from serious health impacts—cholera outbreaks, lead poisoning, and even cancer.

The Safe Drinking Water Act covers approximately 100 contaminants.

Kristi Pullen **Fedinick**, Mae **Wu**, Mekela **Panditharatne**, and Erik D. **Olson**, “Threats on Tap: Widespread Violations Highlight Need for Investment in Water Infrastructure and Protections,” May 2017, <https://www.nrdc.org/sites/default/files/threats-on-tap-water-infrastructure-protectionsreport.pdf>

Under the SDWA, the EPA must identify hazardous drinking water contaminants from arsenic to xylene—and develop rules that either set maximum permissible levels for them or establish protocols to treat the contaminated water to minimize the levels of the contaminant. These drinking water rules cover around 100 contaminants such as toxic chemicals, microorganisms, radioactive elements, and metals that can cause health impacts like cancer, birth defects, miscarriages, and cognitive impairment.

Perhaps, everyone should be very concerned about EPA’s response to these “forever chemicals,” and now take action to address these problems. The EWG noted in January 2020, the status of these contaminants and the failure of the EPA to set a “nationwide legal limit.”

Evans, Sydney, David Andrews, Ph.D., Tasha Stoiber, Ph.D., and Olga Naidenko, Ph.D. “PFAS Contamination of Drinking Water Far More Prevalent Than Previously Reported New Detections of ‘Forever Chemicals’ in New York, D.C., Other Major Cities,” **EWG, 22 January 2020**, accessed Online 22 January 2020.
<https://www.ewg.org/research/national-pfas-testing/>

The EPA was first alerted to the problem of PFAS in drinking water in 2001 but in almost 20 years has failed to set an enforceable, nationwide legal limit. In 2016, the agency issued a non-enforceable lifetime health advisory for PFOA and PFOS in drinking water of 70 ppt. Independent scientific studies have recommended a safe level for PFAS in drinking water of 1 ppt, which is endorsed by EWG.

In the absence of a federal standard, states have started to set their own legal limits. New Jersey was the first to set to a maximum contaminant limit for the compound PFNA, at 13 ppt, and has proposed standards of 13 ppt for PFOS and 14 ppt for PFOA. Some other states have now set or proposed limits or guidelines for PFAS in drinking water, including California, Connecticut, Massachusetts, Michigan, Minnesota, New Hampshire, New York, North Carolina and Vermont.

Neglecting these long-festering problems plaguing our water supply has imposed a heavy toll on public health and the environment -- and as the ongoing coronavirus pandemic attests, a failure to address serious public challenges threatens the welfare of all. When it comes to the nation’s water policy, those challenges extend beyond the obvious health and environmental issues implicated. In the digital economy of 2020, the nation’s critical water infrastructure is increasingly vulnerable to cyber-attacks at the hands of rogue actors or hostile governments. Our infrastructure is fragile and needs to be replaced. Moreover, experts have warned for years that the U.S. water sector faces threats of chemical, biological, or radiological attack. Even prior to 9/11, various terrorist groups were examining our dams, infrastructure, and water quality to determine easy access to destroy our water supply.

In October 2018, President Trump signed the bi-partisan bill, **Water Resources Development Act of 2018** (H.R. 8) and **America’s Water Infrastructure Act of 2018** (Amendment to H.R. 8), which allocates “\$6 billion in federal spending on ports, harbors and waterways” (Birnbaum, E.). This bill requires an authorization and is up for reauthorization during the 2020 election. With President Trump’s philosophical inconsistencies regarding

various issues facing the nation, and especially his position on climate change, his use of executive order of “... rolling back Obama-era environmental standards requiring the federal government to account for climate change in infrastructure projects. ...the president directed agencies to loosen environmental regulations in California in order to free up water for irrigation” (Birnbaum, E.).

Additionally, the coronavirus pandemic has given the executive branch the opportunity to further weaken enforcement of environmental laws affecting water policy.

Lewis, Sophie (Social Media Producer) “‘An open license to pollute’: Trump administration indefinitely suspends environmental protection laws during coronavirus pandemic.” CBS News. March 28, 2020. Accessed 3/29/20.
<https://www.cbsnews.com/news/coronavirus-trump-administration-epa-suspends-environmental-protection-laws/>

The Trump administration introduced this week a sweeping relaxation of environmental laws and fines during the coronavirus pandemic. According to new guidelines from the Environmental Protection Agency (EPA), companies will largely be exempt from consequences for polluting the air or water during the outbreak.

In a letter to all government and private sector partners on Thursday, **the EPA's Assistant Administrator for Enforcement and Compliance Assurance Susan Parker Bodine said that the agency does not expect power plants, factories or other companies to meet environmental standards and reporting of pollution during this time — and it won't pursue penalties if companies break the rules.** Under normal circumstances, companies are required to report when they release certain levels of pollution into the air or water. Now, the EPA has effectively ceded its federal authority to state offices and said companies will be responsible for monitoring their own air and water pollution during this time.

...
"This is an open license to pollute. Plain and simple," Gina McCarthy, president and CEO of the Natural Resources Defense Council and former EPA Administrator, said in a press release. "The administration should be giving its all toward making our country healthier right now. Instead, it is taking advantage of an unprecedented public health crisis to do favors for polluters that threaten public health. We can all appreciate the need for additional caution and flexibility in a time of crisis, but this brazen directive is an abdication of the EPA's responsibility to protect our health."

These changes come on the heels of the rollout of a new Trump administration rule effectively rolling back critical Clean Water Act protections, despite expert warnings that the move would damage key ecosystems.

Ward, Adam S. and Riley Walsh, “New Clean Water Act Rule Leaves U.S. Waters Vulnerable,” February 11, 2020, <https://eos.org/opinions/new-clean-water-act-rule-leaves-u-s-waters-vulnerable>

The Clean Water Act (CWA), which became law in 1972, is the primary federal mechanism by which streams, lakes, and wetlands are protected from degradation in the United States. The act is enforced in tandem by the U.S. Army Corps of Engineers and the Environmental Protection Agency (EPA; hereinafter referred to as “the agencies”) and requires that a permit be issued prior to dredging, filling, or discharging pollutants in “navigable waters.” **On 23 January, the agencies released the Navigable Waters Protection Rule (NWPR), which details how the CWA will be enforced, including which waters receive federal protections under the act. We argue that this rule blatantly ignores established science—including the agencies’ own studies and syntheses—and risks degrading U.S. waters to the point that ecosystems may be permanently harmed. Moreover, the rule runs counter to its own goal to strike a “reasonable and appropriate balance between Federal and State waters” by shifting the cost and burden of analysis and enforcement to states.**

...

The contraction in federal protections under the NWPR means that each state will need to determine what waters within its boundaries are no longer covered and whether adjustments are needed to its own current regulations. Some states may need to decide whether to continue enforcing their existing regulations that go beyond the now contracted federal rules. **The agencies’ own economic analysis predicts several states will contract their protections to match those of the NWPR.** Although other states may expand coverage, this process is not instant and will require scientific input and political will to achieve.

...

One notable danger in shifting the regulatory power to the states is that most states lack the policy infrastructure to handle these new responsibilities. For example, Michigan and New Jersey are the only states that have opted to, and have been deemed capable by the agencies of, administering the federal wetland permitting program. In all other states, final permitting decisions for WOTUS wetlands have been made by the U.S. Army Corps of Engineers. In 48 states, the decision to maintain status quo wetland protections will necessitate hiring and training new staff to handle permit obligations. **The administration’s economic analysis concluded that the NWPR will net cost savings for the federal government. However, this ignores real costs to the states.** From the perspective of a taxpayer who wants to keep the previous level of water protections, there are new costs in having state and local agencies re-create enforcement and protection systems that existed nationwide a month ago.

As a result of not following independent scientific studies regarding our nation’s water, and in the interests of facilitating debate on critical long-term challenges facing the nation, these authors are offering the following resolutions for consideration.

II. Resolutions

1. The USFG should substantially increase its protection of its drinking water in the US.
2. The USFG should substantially increase its regulation of water quality in the US.
3. The USFG should substantially increase its protection of water resources in the US in one or more of the following areas: infrastructure, pollution, security.
4. The USFG should establish a comprehensive national policy to protect the quality of water in the United States.
5. The USFG should substantially improve its water quality in the US.
6. The USFG should establish a national policy to address water quality and/or water scarcity in the United States.

III. Definitions

Comprehensive:

Legal definition of “comprehensive” (<https://definitions.uslegal.com/c/comprehensive/>) as:

Comprehensive means including all or everything. Something that is detailed, broad in scope and content. For **example Comprehensive report means** a detailed report including everything that is required. **Example** of a state statute (New York) using the word **Comprehensive**.

Dictionary.com definition of “comprehensive” (<https://www.dictionary.com/browse/comprehensive>) as:

adjective. of large scope; covering or involving much; inclusive: a comprehensive study of world affairs. comprehending or thoroughly understanding with one's mind; having an extensive mental range or grasp, as of a particular subject or many subjects.

Contaminant(s):

The EPA defines “contaminant” through the Safe Drinking Water Act (<https://www.epa.gov/ccl/definition-contaminant>) as:

The Safe Drinking Water Act (SDWA) defines "contaminant" as any physical, chemical, biological or radiological substance or matter in water. Drinking water may reasonably be expected to contain at least small amounts of some contaminants. Some contaminants may be harmful if consumed at certain levels in drinking water. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Black's Law Dictionary defines “contaminant” (<https://thelawdictionary.org/contaminant/>) as:

A substance that can harm living organisms. It is passed through air, water, soil, and food.

Cambridge Dictionary defines “contaminant” (<https://dictionary.cambridge.org/dictionary/english/contaminant>) as:

a substance that makes something less pure or makes it poisonous:
Make sure that all equipment is clean and free of contaminants.

Clean water:

EPA Blog defines “**clean water**” (<https://blog.epa.gov/2012/09/27/clean-water-is-environmental-justice/>) as:

Clean Water is **Environmental Justice**. ... **Environmental justice** shapes our priorities, frames our projects, and informs our actions. It embraces the idea that every community, regardless of its size and economic standing, deserves access to safe **water**

Drinking water:

Merriam-Webster defines “**drinking water**” (<https://www.merriam-webster.com/dictionary/drinking%20water>) as:

water that is clean enough for people to drink

EPA Enterprise Vocabulary definition of “**drinking water**” (https://ofmpub.epa.gov/sor_internet/registry/termreg/searchandretrieve/enterprisevocabulary/search.do;jsessionid=OKA__2gK2H7ZjYDUcdxSxXSis7IvjgrbpMPOSAgWCWvv9pX9b7Wx!-1357501470?search=&searchString=water&matchCriteria=Contains&tierTwoSelected=0&searchString=water&matchCriteria=Contains&tierTwoSelected=0&searchString=water&matchCriteria=Contains&tierTwoSelected=0) as:

Drinking Water: Definition: Water that is agreeable to drink, does not present health hazards and whose quality is normally regulated by legislation. [General Multilingual Environmental Thesaurus]

Improve:

According to *Merriam-Webster* online defines “**improve**” (<https://www.merriam-webster.com/dictionary/improve>) as:

transitive verb

1a: to enhance in value or quality : make better

b: to increase the value of (land or property) by making it more useful for humans (as by cultivation or the erection of buildings)

c: to grade and drain (a road) and apply surfacing material other than pavement

2: to use to good purpose

3 archaic : EMPLOY, USE

intransitive verb

1: to advance or make progress in what is desirable

2: to make useful additions or amendments

Infrastructure:

According to *Merriam-Webster* online defines “**infrastructure**” (<https://www.merriam-webster.com/dictionary/infrastructure>) as:

- 1: the system of public works of a country, state, or region
also : the resources (such as personnel, buildings, or equipment) required for an activity
- 2: the underlying foundation or basic framework (as of a system or organization)
- 3: the permanent installations required for military purposes

“Critical Infrastructure and Key Resources”

Inclusion of both terms

The term “**critical infrastructure**” was originally defined in section 1016(e) of the USA PATRIOT Act of 2001 (42 U.S.C. 5195c(e)). “Key resources” is defined in section 2(9) of the Homeland Security Act of 2002 (6 U.S.C. 101(9)). As a 2006 GAO Report explains, Critical Infrastructure and Key Resources (CIKR) are:

(<http://www.gao.gov/new.items/d0739.pdf>)

Critical infrastructure are systems and assets, whether physical or virtual, so vital to the United States that their incapacity or destruction would have a debilitating impact on national security, national economic security, and national public health or safety, or any combination of those matters. Key resources are publicly or privately controlled resources essential to minimal operations of the economy or government, including individual targets whose destruction would not endanger vital systems but could create a local disaster or profoundly damage the nation’s morale or confidence.

CIKR’s are listed by the DHS as the following 18 sectors:
(<http://www.gao.gov/new.items/d0739.pdf>)

- Agriculture and Food
- Banking and Finance
- Chemical
- Commercial Facilities
- Communications
- Critical Manufacturing
- Dams
- Defense Industrial Base
- Emergency Services
- Energy
- Government Facilities
- Healthcare and Public Health
- Information Technology
- National Monuments and Icons
- Nuclear Reactors, Materials and Waste

- Postal and Shipping
- Transportation Systems
- Water

Legal definition of “**infrastructure**” (<https://definitions.uslegal.com/i/infrastructure/>) as:

Infrastructure generally refers to the most basic level of organizational structure in a complex body or system, upon which the rest of the structure is based. In economic terms, it often refers to basic public services, such as power and water supplies, public transportation, telecommunications, roads, and schools.

Precise definitions will vary by local law and governing entity.

National:

Legal definition of “**national**” (<https://definitions.uslegal.com/n/national/>) as:

In the noun form of the term, a “**national**” is a person who is considered under the legal protection of a country, but not necessarily a citizen. National status generally applies to someone who lived in places acquired by the U.S. before the date of acquisition. A person can be a national-at-birth under a similar set of rules for a natural-born citizen. U.S. nationals must go through the same processes as an immigrant to become a full citizen. U.S. nationals are not considered natural-born after becoming a citizen.

Example of a Federal Statute defining “**national**” as:

The term “**national**” means a person owing permanent allegiance to a state.[8 USCS § 1101]

Collins Dictionary defines “**national**”

(<https://www.collinsdictionary.com/dictionary/english/national>) as:

National means relating to the whole of a country or nation rather than to part of it or to other nations. Ruling parties have lost ground in **national** and local elections. ...

Policy:

Legal definition of “**policy**” (<https://legal-dictionary.thefreedictionary.com/Policy>) as:

Policy. The general principles by which a government is guided in its management of public affairs, or the legislature in its measures. ... As applied to a **law**, ordinance, or Rule of **Law**, the general purpose or tendency considered as directed to the welfare or prosperity of the state or community.

Cambridge Dictionary defines “**policy**”

(<https://dictionary.cambridge.org/us/dictionary/english/policy>) as:

a set of ideas or a plan of what to do in particular situations that has been agreed to officially by a group of people, a business organization, a government, or a political party:

They believe that Europe needs a common foreign and security policy.

*What is your party's policy **on** immigration?*

Protect:

Merriam-Webster online defines "**protect**" (<https://www.merriam-webster.com/dictionary/infrastructure>) as:

- 1a: to cover or shield from exposure, injury, damage, or destruction : GUARD
 - b: DEFEND sense 1c protect the goal
 - 2: to maintain the status or integrity of especially through financial or legal guarantees: such as
 - a: to save from contingent financial loss
 - b: to foster or shield from infringement or restriction, specifically : to restrict competition for (something, such as a domestic industry) by means of tariffs or trade controls
 - 3: DEFEND sense 5 protect a lead
- intransitive verb
- : to provide a guard or shield
- protects against tooth decay

Cambridge Dictionary online defines "**protect**" (<https://dictionary.cambridge.org/us/dictionary/english/protect>) as:

to keep someone or something safe from injury, damage, or loss:

*clothing that protects you **against** the cold*

*It's important to protect your skin **from** the harmful effects of the sun.*

Surely the function of the law is to protect everyone's rights.

Of course the company will act to protect its financial interests in the country if war begins.

Patients' names have been changed to protect their privacy.

Public pressure to protect the environment is strong and growing.

*Vitamin C may help protect **against** cancer.*

Protection:

Merriam-Webster online defines "**protection**" (<https://www.merriam-webster.com/dictionary/infrastructure>) as:

- 1: the act of protecting : the state of being protected
- 2a: one that protects
- b: supervision or support of one that is smaller and weaker
- c: a contraceptive device (such as a condom)

- 3: the freeing of the producers of a country from foreign competition in their home market by restrictions (such as high duties) on foreign competitive goods
- 4a: immunity from prosecution purchased by criminals through bribery
- b: money extorted by racketeers posing as a protective association
- 5: COVERAGE sense 1a
- 6: anchoring equipment placed in cracks for safety while rock climbing

Legal definition of “protection”

(<https://legal-dictionary.thefreedictionary.com/protect>) as:

PROTECTION, merc. law, The name of a document generally given by notaries public, to sailors and other persons going abroad, in which is certified that the bearer therein named, is a citizen of the United States.

PROTECTION, government. That benefit or safety which the government affords to the citizens.

PROTECTION, Eng. law. A privilege granted by the king to a party to an action, by which he is protected from a judgment which would otherwise be rendered against him. Of these protections there are several kinds. F. N. B. 65.

Black’s Law online dictionary defines “environmental protection”

(<https://thelawdictionary.org/contaminant/>) as:

Environmental guardianship based on policies and procedures. Objectives are (1) the conserving of natural resources, (2) the preserving of the existing natural environment and, (3) where possible, repairing damage and reversing trends.

The EPA defines source “water protection” (<https://www.epa.gov/sourcewaterprotection/basic-information-about-source-water-protection>) as:

Source **water protection** includes a wide variety of actions and activities aimed at safeguarding, maintaining, or improving the quality and/or quantity of sources of drinking water and their contributing areas. These activities may depend on the type of source being protected (e.g., groundwater, reservoir, or river).

Some examples of source **water protection** are:

- Riparian zone restoration to reduce runoff pollution;
- Stream bank stabilization to reduce sedimentation;
- Land protection/easements;
- Best management practices for agricultural and forestry activities or stormwater control;
- Local ordinances to limit certain activities in source water or wellhead protection areas;
- Developing emergency response plans; and
- Educating local industry, businesses, and citizens on pollution prevention and source water protection.

Regulations:

The Kansas Department of Health and Environment defines EPA's "regulations" for drinking water (<https://www.kdheks.gov/>) as:

The Safe Drinking Water Act (SDWA) authorizes and permits the Environmental Protection Agency (EPA) to **set national standards for drinking water contaminants. In addition to the establishment of drinking water standards, these regulations identify methods and schedules by which contaminants must be analyzed and tested.** As long as state standards are at least as stringent as federal standards, states have the ability to promulgate their own drinking water regulations. Some Kansas Administrative Regulations do differ from Federal Regulations set forth by EPA

The Department of Health and Human Services defines "regulations" (<https://www.hhs.gov/about/index.html>) as:

Agencies create regulations (also known as "rules") under the authority of Congress to help government carry out public policy.

Black's Law Legal Dictionary defines "regulation" as:

(<https://legal.thomsonreuters.com/en/products/law-books/blacks-law-dictionary>) as:

The act of regulating; a rule or order prescribed for management or government; a regulating principle; a precept. See *Curry v. Marvin*, 2 Fla. 415; *Ames v. Union Pac. Ry. Co.* (C. C.) 64 Fed. 178; *Hunt v. Lambertville*, 45 N. J. Law, 282.

The Legal Information Institute defines "regulation" (<https://www.law.cornell.edu/>) as:

A Regulation is an official rule. In the Government, certain administrative agencies have a narrow authority to control conduct, within their areas of responsibility. These agencies have been delegated legislative power to create and apply the rules, or "regulations." Derived from "regulate."

Merriam-Webster online dictionary defines "regulation" (<https://www.merriam-webster.com/>) as:

- 1: the act of regulating : the state of being regulated
- 2a: an authoritative rule dealing with details or procedure
safety regulations
- b: a rule or order issued by an executive authority or regulatory agency of a government and having the force of law

Water Quality:

The United States Geological Survey website defines the phrase "water quality" (<https://www.usgs.gov/>) as:

“What is in that water that you just drank? Is it just hydrogen and oxygen atoms? Is it safe for drinking? All water is of a certain "quality" (and you can't tell by just looking), but what does "water quality" really mean? Water full of dirt and grime might work fine for a tomato plant but would you want to drink it? **Water quality can be thought of as a measure of the suitability of water for a particular use based on selected physical, chemical, and biological characteristics.**”

The Florida Keys National Marine Sanctuary defines “**water quality**” (https://marinesanctuary.org/sanctuary/florida-keys/?gclid=Cj0KCQjwyur0BRDcARIsAEt86IB54pTk58rijl_r9srThxsVdhJi9ioU-Pqxq-Aacmh7aYKG2i61KPUaAqcEEALw_wcB) as:

Water quality describes the condition of the water, including chemical, physical, and biological characteristics, usually with respect to its suitability for a particular purpose such as drinking or swimming. Water quality is measured by several factors, such as the concentration of dissolved oxygen, bacteria levels, the amount of salt (or salinity), or the amount of material suspended in the water (turbidity). In some bodies of water, the concentration of microscopic algae and quantities of pesticides, herbicides, heavy metals, and other contaminants may also be measured to determine water quality. Although scientific measurements are used to define water quality, it is not a simple thing to say “that water is good” or “that water is bad.” So, the determination is typically made relative to the purpose of the water – is it for drinking or to wash a car with or for some other purpose? Poor water quality can pose a health risk for people. Poor water quality can also pose a health risk for ecosystems.

Water Scarcity:

According to *Science Daily* defines “**water scarcity**” (https://www.sciencedaily.com/terms/water_scarcity.htm) as:

Water scarcity is the lack of sufficient available **water** resources to meet the demands of **water** usage within a region. It already affects every continent and around 2.8 billion people around the world at least one month out of every year. More than 1.2 billion people lack access to clean drinking **water**.

According to the *Encyclopedia Britannica* defines “**water scarcity**” (<https://www.britannica.com/topic/water-scarcity>) as:

Water scarcity, insufficient freshwater resources to meet the human and environmental demands of a given area. Water scarcity is inextricably linked to human rights, and sufficient access to safe drinking water is a priority for global development. However, given the challenges of population growth, profligate use, growing pollution, and changes in weather patterns due to global warming, many countries and major cities worldwide, both wealthy and poor, faced increasing water scarcity in the 21st century.

According to the *Food and Agriculture Organization* of the United Nations defines “**water scarcity**”

(<http://www.fao.org/resources/infographics/infographics-details/en/c/218939/>) as:

Physical water scarcity occurs when there is not enough water to meet all demands. Arid regions are most often associated with physical water scarcity, but an alarming new trend is an artificially created physical water scarcity due to over allocation and overdevelopment of water resources. **Symptoms of physical water scarcity include, among other factors, severe environmental degradation and increasing occurrence of conflicts.**

Economic water scarcity is caused by a lack of investment in water or a lack of human capacity to satisfy the demand for water, even in places where water is abundant. Symptoms of economic water scarcity include inadequate infrastructure development: people have trouble getting enough water for domestic and other purposes; high vulnerability to seasonal fluctuations: floods and drought; and inequitable distribution of water, even when infrastructure exists.

Water Security

United Nations defines “water security” (<https://www.unwater.org/publications/water-security-infographic/>) as:

“The capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.” This is the definition proposed by UN-Water to serve as a starting point for dialogue in the UN system. Discover on this infographic the key elements of water security, and the centrality of water to achieving a larger sense of security, sustainability, development and human well-being. UN-Water hence supports the inclusion of water security on the agenda of the UN Security Council and in the post-2015 development agenda as part of the Sustainable Development Goals.

According to *EPA Enterprise Vocabulary* defines “**water security**”

(https://ofmpub.epa.gov/sor_internet/registry/termreg/searchandretrieve/enterprisevocabulary/search.do?jsessionid=OKA__2gK2H7ZjYDUcdxSxXSis7IvjgrbpMPOSAgWCWvv9pX9b7Wx!-1357501470?search=&searchString=water&matchCriteria=Contains&tierTwoSelected=0&searchString=water&matchCriteria=Contains&tierTwoSelected=0&searchString=water&matchCriteria=Contains&tierTwoSelected=0) as:

Water Security: Definition: Actions taken to assess and reduce consequences, threats, and vulnerabilities to potential terrorist attacks; to plan for and practice response to natural disasters, emergencies, and incidents; and to develop new security technologies to detect and monitor contaminants and prevent security breaches.[Adapted from EPA Water Security Home at <http://water.epa.gov/infrastructure/watersecurity/>]

A contextual definition from:

Tindall, J. A., & Campbell, A. A. *Water Security: Conflicts, Threats, Policies.* (2012). DTP Publishing. Ebook. 710,712.

“Water Security is the protection of adequate water supplies for food, fiber, industrial, and residential needs for expanding populations, which requires maximizing water-use efficiency, developing new supplies, and protecting water reserves in event of scarcity due to natural, [man-made], or technological hazards. [Eco-system functioning, environmental, social, and economic parameters are composite water-security components].”[6]

US **“water security”** falls under the EPA.

Tindall, J. A., & Campbell, A. A. *Water Security: Conflicts, Threats, Policies.* (2012). DTP Publishing. Ebook. 1747.

The Water Security (WS) initiative is the U.S. Environmental Protection Agency (EPA) program addressing the risk of intentional contamination of drinking water distribution systems established in response to Homeland Security Presidential Directive 9, under which the Agency must “develop robust, comprehensive, and fully coordinated surveillance and monitoring systems, including international information, for ... water quality that provides early detection and awareness of disease, pest, or poisonous agents. ” [ellipses in original text.]

Water Vocabulary

Term	Definition
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHAP	Children’s Healthcare Access Program
Chloramine	Secondary disinfectant to treat drinking water
Crypto	Cryptosporidium (microscopic parasite), Hanna-Attisha, 2018
CWA	Clean Water Act
CWS	Community Water System
DoD	Department of Defense
FDA	Food and Drug Administration
leaching	“...process of water carrying soluble substances or small particles through soil or rock.” Kumar, 2015
MCL	Maximum Contaminant Level
MDEQ	Michigan Dept of Environmental Quality
NIST	National Institute of Technology
NSF	National Sanitation Foundation
PFAs	Per- and Polyfluoroalkyl Substances
PFCA	Perfluoroalkyl Carboxylic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
ppb	Parts per billion
RCRA	Resource Conservation and Recovery Act
SDWA	Safe Drinking Water Act
TSCA	Toxic Substances Control Act
TTHMs	Trihalomethanes—chemical compounds found in drinking water in ‘70s; pollutant, carcinogenic
UCMR	Unregulated Contaminant Monitoring Rule
USACE	US Army Corps of Engineers
USGS	US Geological Survey
WCIT	Water Contaminant Information Tool
WISE	Water Infrastructure Security Enhancements Project-funded by EPA
WQBEL	Water Quality-Based Effluent Limits
WQS	Water Quality Standards

IV. Timeliness

The event that has most clearly focused national attention on the quality of water in the United States recently is the Flint water crisis. Starting in 2014, water quality has come under scrutiny due to harmful levels of lead being present in the taps of Flint, Michigan citizens (“Flint Water Crisis Fast Facts,” 2019). At the same time, more is being understood about levels of harmful chemicals like Perfluorooctanoic acid (PFOA) and other man-made chemicals (Isaacs-Thomas, 2020). In 2019, primarily in response to the aftermath of Flint, the EPA has sought to update its Copper and Lead Rule. However, critics do not see this action as effective at solving the current problem (Frazin, 2020). Likewise, the US House of Representatives acted in early 2020 to regulate PFOA’s. But, the president signaled that he would veto the measure, and the Republican-controlled Senate is unlikely to pass the bill proposed by the Senate Democrats (Beitsch, 2020). On one hand, environmentalists feel that the government/EPA has not done enough, and on the other hand, it is clear that the current administration has no interest in increasing environmental regulations. Due to this tension, there will continue to be ample literature written about the harms in the US, possible solutions, and the cost of a broader water policy.

V. Scope

Water policy affects every American. The average citizen trusts that their representatives are advocating for their safety and that water utilities are guarding their water quality. However, many times the regulations, already in place, are not enough to keep drinking water safe. For example, in 2015, community water systems serving 77 million people were in violation of rules and regulations in place by the EPA. In some cases, this means failure to test, with officials and constituents alike in the dark about the safety and quality of their local water supplies. However, in other cases, this means that the water quality itself is not adequate. For 27 million of those people mentioned, the water provided by the community water system violated health provisions of the Safe Drinking Water Act.

Feidnick, Kristin Pullen, Mae **Wu**, and Erik D. **Olson**, “Threats on Tap: Widespread Violations Highlight Need for Investment in Water Infrastructure and Protections,” May 2, 2017, <https://www.nrdc.org/resources/threats-tap-widespread-violations-water-infrastructure>

Established in 1974, **the Safe Drinking Water Act is one of our bedrock environmental laws, consisting of rules that regulate about 100 contaminants found in drinking water.** NRDC has documented serious problems with our outdated and deteriorating water infrastructure, widespread violations and inadequate enforcement of the Safe Drinking Water Act for more than 25 years. Our analysis shows that **in 2015 alone, there were more than 80,000 reported violations of the Safe Drinking Water Act by community water systems. Nearly 77 million people were served by more than 18,000 of these systems with violations in 2015.** These violations included exceeding health-based standards, failing to properly test water for contaminants, and failing to report contamination to state authorities or the public. **What’s worse, 2015 saw more than 12,000 health-based violations in some 5,000 community water systems serving more than 27 million people.**

This proves that the current system is failing to meet two basic requirements under the law. It is failing to enforce testing, and it is failing to remove contaminants from the water.

The problem of drinking water quality is not isolated to certain areas of the country; rather, it is systemic in nature. Due to the structure of how water is tested and reported, states are

underreporting Safe Drinking Water Act violations and 9 in 10 violations are not subject to enforcement.

Fedinick, Kristi Pullen, Mae Wu, Mekela Panditharatne, and Erik D. Olson, “Threats on Tap: Widespread Violations Highlight Need for Investment in Water Infrastructure and Protections,” May 2017, <https://www.nrdc.org/sites/default/files/threats-on-tap-water-infrastructure-protections-report.pdf>

Under the SDWA, the EPA is ultimately responsible for setting and enforcing rules for all public water systems. However, the act allows states and Native American tribes to apply for primary enforcement responsibility, or “primacy,” which grants them substantial federal funding and imposes legal obligations. The EPA grants primacy if the state or tribe’s regulations are at least as stringent as the EPA’s own rules, and if it has demonstrated the authority to adequately compel compliance. **Public water systems are required to report results from sampling and report violations to state authorities, which then relay the information to the EPA.** The state takes the lead in bringing noncompliant systems back into compliance, while the EPA acts as a backup if the state fails to resolve violations. **This system of self-reporting relies heavily on the honor code, blowing the margin for error wide open. Past EPA audits have found widespread underreporting of violations.**

...

Even when violations are known, they’re not necessarily corrected. According to the EPA’s Safe Drinking Water Information System (SDWIS) data, of the more than 80,000 reported violations that occurred in 2015, the agency and states took formal enforcement action against a mere 13.1 percent. Nearly 9 out of 10 violations were subject to no formal action by the state or the EPA, such as the issuance of a notice of violation, a site visit, or the filing of a civil or criminal filing of a civil or criminal action. Even fewer of those reported violations—**an abysmal 3.3 percent—received penalties. Health-based violations barely fared better. Agencies took formal enforcement actions against 21.2 percent of health-based violations.** Furthermore, penalties (either criminal punishment or civil fines) were sought or assessed for only a tiny fraction (6.7 percent) of violations. **This lack of accountability tells water systems that are knowingly violating the SDWA, with state and federal complicity, that their wrongdoing will go unpunished.** The data highlight the need for a culture change at the EPA and state regulatory bodies to ensure that violations are taken seriously and that public health threats are addressed promptly.

The lack of enforcement for current violations creates a culture of complacency that feeds into further violations. Unfortunately, the status quo has created a system where safety is being undervalued in the interest of economics.

The financial costs of testing and regulation have long kept water policy stagnant. The passage of the 1996 Amendments to the Safe Drinking Water Act imposed restrictions on the

EPA's ability to further regulate drinking water standards. Specifically, it required the EPA to prove that the benefits of regulating a contaminant would offset any costs to water utilities.

Snider, Annie. "What broke the Safe Drinking Water Act?" Politico. May 11, 2017. Retrieved from <https://www.politico.com/agenda/story/2017/05/10/safe-drinking-water-perchlorate-000434>

"Industry exploits the uncertainties and puts EPA in an endless cycle of analysis," said Rep. Frank Pallone, the top Democrat on the House Energy and Commerce Committee, which oversees drinking water issues. Pallone and other Democrats blame **the 1996 amendments to the Safe Drinking Water Act**, saying they **took the EPA's foot off the gas and posed new hurdles to setting regulations**. They have introduced a bill to update the measure by removing some of the procedural requirements and mandating that the agency set standards for 10 new contaminants every three years, along with another measure to significantly increase federal funding to drinking water utilities.

This effectively froze the addition of any contaminants to the list, and explains why not a single compound has been added to the EPA's list of regulated contaminants since 1996. This appears negligent as corporations continue to develop and use new chemicals each year without regulation through the EPA.

A more prudent course would be to look at the long-term costs of not regulating water, which may be much higher. Countries around the world have found that quality water influences economic growth.

The World Bank. "Worsening Water Quality Reducing Economic Growth by a Third in Some Countries," August 20, 2019. Retrieved from <https://www.worldbank.org/en/news/press-release/2019/08/20/worsening-water-quality-reducing-economic-growth-by-a-third-in-some-countries>

The world faces an invisible crisis of water quality that is eliminating one-third of potential economic growth in heavily polluted areas and threatening human and environmental well-being, according to a World Bank report released today. Quality Unknown: The Invisible Water Crisis shows, with new data and methods, how a combination of bacteria, sewage, chemicals, and plastics can suck oxygen from water supplies and transform water into poison for people and ecosystems. To shed light on the issue, the World Bank assembled the world's largest database on water quality gathered from monitoring stations, remote sensing technology, and machine learning. The report finds that **a lack of clean water limits economic growth by one-third**. It calls for immediate global, national, and local-level attention to these dangers which face both developed and developing countries. **"Clean water is a key factor for economic growth. Deteriorating water quality is stalling economic**

growth, worsening health conditions, reducing food production, and exacerbating poverty in many countries.” said World Bank Group President David Malpass. “Their governments must take urgent actions to help tackle water pollution so that countries can grow faster in equitable and environmentally sustainable ways.” When Biological Oxygen Demand – a measure of how much organic pollution is in water and a proxy measure of overall water quality – crosses a certain threshold, GDP growth in downstream regions drops by as much as a third because of impacts on health, agriculture, and ecosystems. **A key contributor to poor water quality is nitrogen, which, applied as fertilizer in agriculture,** eventually enters rivers, lakes and oceans where it transforms into nitrates. Early exposure of children to nitrates affects their growth and brain development, impacting their health and adult earning potential. The run-off and release into water from every additional kilogram of **nitrogen fertilizer per hectare can increase the level of childhood stunting by as much as 19 percent and reduce future adult earnings by as much as 2 percent, compared to those who are not exposed.**

In this context, the federal focus on short-term costs is penny wise and pound-foolish.

Continuing to neglect water quality for the sake of avoiding financial costs runs the risk of creating a widespread health and economic disaster that could be costly for our economy and society.

While urban communities may receive more publicity, rural communities can experience water issues to a heightened degree. Locations with reduced populations are uniquely hard-hit by water quality violations. Water systems serving smaller populations often lack the resources of larger utilities making water quality a higher hurdle.

Fedinick, Kristi Pullen, Mae Wu, Mekela Panditharatne, and Erik D. Olson, “Threats on Tap: Widespread Violations Highlight Need for Investment in Water Infrastructure and Protections,” May 2017, <https://www.nrdc.org/sites/default/files/threats-on-tap-water-infrastructure-protections-report.pdf>

Troublingly, we also found that systems serving very small communities—such as rural and more sparsely populated areas—had a significantly higher rate of violations of the health standards and a higher percentage of total violations compared with larger systems. Systems serving less than 500 people accounted for nearly 70 percent of all violations and a little over half of all health-based violations. This means that rural Americans could be at greatest risk from some drinking water contaminants.

It is apparent that rural systems are underperforming larger more urban systems. There is a clear opportunity for solutions directed to this demographic of the country. Without additional

measures to improve the water quality of rural locales, there will continue to be regular violations of current EPA standards.

The water quality issues that rural communities face is not new, and they are not likely to end soon under the status quo. Rural America is in the midst of a water crisis due to large scale agriculture.

Jones, Sarah and Emily Atkin, “Rural America’s Drinking-Water Crisis,” Feb. 12, 2018, <https://newrepublic.com/article/147011/rural-americas-drinking-water-crisis>

But, in reality, most health-based violations of drinking-water standards occur outside of big cities, in places like Martin County: small, poor, out of the way. **Of the 5,000 drinking-water systems that racked up health-based violations in 2015, more than 50 percent were systems that serve 500 people or fewer.**

...

Large-scale agriculture is the contamination culprit in many other rural areas: Nitrogen-based fertilizer slides off of farmlands and into the nation’s freshwater systems. The tap water in Pretty Prairie, Kansas, for example, “has exceeded the Environmental Protection Agency’s legal limit” for nitrate for more than 20 years, the Environmental Working Group reported in 2017. As a result, the town’s 672 residents have imbibed carcinogens for decades.

The Environmental Working Group reports, “Studies by the National Cancer Institute have found that drinking water with just 5 [parts per million] of nitrate increases the risk of colon, kidney, ovarian and bladder cancers.”

Rural communities are routinely being exposed to harmful contaminants in their drinking water.

If the country wants to continue to support rural communities, it must make the safety of those communities, including their water, a larger priority.

One issue that will hinder improvement in water quality is the mechanisms for additional scrutiny of water systems. Currently, the U.S. lacks sufficient oversight for systems without recent reported violations.

Allaire, Maura, Haowei Wu, and Upmanu Lall, “National trends in drinking water quality violations,” February 27, 2018, <https://www.pnas.org/content/pnas/115/9/2078.full.pdf>

Routine quality monitoring is specified at the federal level and allows for more frequent sampling at systems with recent violations. However, **no guidelines exist for identifying systems without recent reported violations that could benefit from additional oversight.**

Identifying hot spots and vulnerability factors associated with violations could better direct enforcement activity to struggling utilities and allow for increased compliance across the country.

This is one of many loopholes in the current system. It also makes utilities less likely to report violations. If a utility knows that reporting will lead to further oversight, there is no incentive to report in the first place.

Furthermore, the current administration has been acting to remove regulations in many areas including water policy. The Trump administration repealed clean water regulation covering 60% of U.S. bodies of water in 2019.

Newburger, Emma, “Trump finalizes repeal of Obama-era clean water rule,” Sept. 12, 2019, <https://www.cnbc.com/2019/09/12/trump-expected-to-roll-back-obama-era-water-regulations.html>

The new rule limits the number of waterways the federal government can protect from pollution, including ditches, storm water control facilities and groundwater systems. It would also limit the government’s oversight to larger bodies of water. The repeal could take effect in just a few weeks. **The clean water rollback is the latest in a string of moves by the administration to dismantle major environmental protections against pollutants, from curtailing regulations on methane emissions and energy-efficient light bulbs, to pushing for oil and gas drilling in the Arctic National Wildlife Refuge. Environmental groups condemned the move to weaken water regulations, claiming that loosening restrictions will substantially harm the country’s sources of safe drinking water and habitats for wildlife.** The Obama rule was developed to limit pollution in roughly 60% of the country’s bodies of water. It gave the federal government the authority to oversee a wide range of lakes, streams and wetlands that connect to large waterways protected under the 1972 Clean Water Act.

While it is possible that a future administration could alter these same rulings, the timeframe for solving water policy is critical. While environmental policies become weaker, stresses on environmental systems are growing. None is more prescient than climate change.

As the earth warms, more is being understood about the effects this will have on human life. One impact of a warmer climate is increased precipitation in the United States. In this regard, climate change is already making America’s water crisis worse by increasing nitrogen pollution.

Sinha, E., A. M. Michalak, and V. Balaji, “Eutrophication will increase during the 21st century as a result of precipitation changes,” July 28, 2017, <https://science.sciencemag.org/content/357/6349/405>

The across-model mean projected increase in nitrogen loading within the continental United States is 19% (Fig. 2), with the Northeast (28%), the upper Mississippi Atchafalaya River Basin (24%), and the Great Lakes basin (21%) experiencing the largest increases (Fig. 2). To put these numbers in context, the U.S. Environmental Protection Agency recently set a 20% load reduction target relative to 1980–1996 levels for the Mississippi Atchafalaya River Basin as a whole (26), with the aim of reducing the size of the massive annual hypoxic zone in the Gulf of Mexico (31). We find here that precipitation changes alone will instead lead to an 18% increase in loading within the Mississippi Atchafalaya River Basin as a whole. **Offsetting this increase in loading would require a 30% reduction in nitrogen inputs for the region, whereas achieving a 20% loading reduction in light of the confounding effect of precipitation changes would require a 62% reduction in nitrogen inputs (see supplementary materials). For the continental United States, a 33% reduction in nitrogen inputs would be required to offset the 19% nitrogen load increase attributable to changes in precipitation.**

Nitrogen is a substance that the EPA currently regulates, but if climate change alters the amounts of nitrogen entering water systems, more will need to be done to ensure that water is being tested and cleaned. This is an example of how even with current regulations in place, the United States will need to expand its thinking on climate change in relation to public water contamination.

Water scarcity will be an issue in many states in the near future, if it is not already. The problem of water scarcity affects ecosystems, as well as the quality and amount of drinking water that is available. Climate change will only increase the need for solutions to water scarcity issues in the United States.

According to NCEL (National Council of Environmental Legislators) 26 February 2019. Online accessed 22 March 2020. <https://www.ncel.net/2019/02/26/water-scarcity-what-it-is-what-states-can-do/>

Water scarcity is not just a water use issue. Water scarcity is impacted by: climate change, population growth and demographic changes, depleting groundwater sources, and ensuring adequate water is reserved for natural ecosystems. Water scarcity is not just a Western issue. In a 2013 survey, 40-50 state water managers expected to see freshwater shortages in their states given average conditions.

Without a plan to address our water scarcity nationally, there could soon be a day where the taps run dry, and it is too late to act. While this would surely affect arid regions of the country sooner, water scarcity may require federal guidance to prevent a widespread water crisis.

Fracking is another issue that affects water quality. Hydraulic fracturing in the United States has led to lower energy prices while spurring the domestic energy sector. However, it is not without its detractors. Both independent and government agencies have been sounding the alarm about water contamination due to fracking. Recent research by the EPA has affirmed environmental groups' concerns about the negative effects of fracking.

Davenport, Coral “Reversing Course, E.P.A. Says Fracking Can Contaminate Drinking Water,” Dec. 13, 2016, <https://www.nytimes.com/2016/12/13/us/reversing-course-epa-says-fracking-can-contaminate-drinking-water.html>

The Environmental Protection Agency has concluded that hydraulic fracturing, the oil and gas extraction technique also known as fracking, has contaminated drinking water in some circumstances, according to the final version of a comprehensive study first issued in 2015. The new version is far more worrying than the first, which found “no evidence that fracking systemically contaminates water” supplies. In a significant change, that conclusion was deleted from the final study.

...

The E.P.A has been working on the report since 2010, when it was requested by Congress. Mr. Burke called the study unprecedented in scope and depth, saying it included a review of over 1,000 existing studies as well as new research, modeling and analysis conducted by E.P.A scientists. In the process of completing the study, the E.P.A. produced 13 peer-reviewed reports and published as many studies in scientific journals.

Fracking will continue to be an economic and political issue as some call for stricter regulation in the face of environmental impact studies, while others choose to focus on the benefits of fracking such as energy independence. Issues like these put on display the tension between economic and environmental forces in the area of water policy.

Another example of how economics comes into conflict with water quality is the prices utilities set for water. The unfortunate consequence of low water prices has been a lack of investment in water systems. In this way, low water prices have bred complacency.

Eting, Shira, “Making the Business Case for Water Projects,” July 2016,
<https://milkeninnovationcenter.org/wp-content/uploads/2016/09/108-EN-F-W-Shira-Eting-2.pdf>

As mentioned above, **the primary lever to save water and invest in new solutions is its price, yet the low price of water in the United States in general, and in California in particular, currently does not provide enough motivation to do so. This affects all members of the value chain across all sectors, and creates difficulties in financing new water projects.**

Pleasing customers has meant keeping water prices low. However, this has affected investment in water systems negatively. In order to solve this problem, investment needs will result in requiring higher prices on water or subsidies from the federal government. In the end, much is left up to states and localities in our current system and that is one of the biggest concerns.

The lack of funding or political action will be major impediments to improving water quality in the United States. The status quo is clearly unequipped to handle the current problems facing the water systems in the US. In some cases, states and localities are without the essential data required to make informed choices about their water systems.

Eting, Shira, “Making the Business Case for Water Projects,” July 2016,
<https://milkeninnovationcenter.org/wp-content/uploads/2016/09/108-EN-F-W-Shira-Eting-2.pdf>

A major obstacle is the absence of essential data: California lacks basic information about water supply and demand, water usage, and water leakage (Pacific Institute 2014b; Mercer and Christensen 2013). **Reasons for this include the low price of water, policies that do not require users to report water use, fragmented water supply systems, and utilities that track information in cumbersome ways** (Hanaket al. 2015; Ajami et al. 2014; Hanak et al. 2012). **The lack of essential data may also be due to social or political resistance to changing the current water situation.** For example, a statewide comprehensive assessment of groundwater overdraft has not been conducted since 1980 (Pacific Institute 2014b), and the percentage of non-revenue water (NRW)⁸ is not accurately tracked by many municipalities (Efrat 2016; Financial Innovation Lab report, Milken Innovation Center 2016).

Data based decisions are critical to making water policy. It should not be the case that lack of oversight or accurate testing cause inaction to improve water quality.

Overall, there are a myriad of ways that water in the United States is lacking regulation or protection: poor oversight of current regulations, no regulations on new chemicals, lack of research and testing of drinking water, insufficient funding for aging infrastructure, deregulation of ecosystems, etc. The problem area for this topic would allow many opportunities for core topic debate as well as creative thinking around the edges of the topic.

VI. Range

Water policy can be both digestible for young debaters, and wide-ranging and complex for advanced debaters. While most have a basic understanding of how water is cleaned and provided to utility customers, few have an in-depth appreciation for the history of water policy, the legal requirements under the law, and the scientific processes that provide drinking water to the common household. Debating this topic will enable debaters to delve into a broad array of relevant discussions, pertaining to public health, the environment, economics, federal power, and more. This debate topic will allow novice debaters to hone their skills while learning the basics of significance, inherency, harms, solvency, and topicality. On the other side of the spectrum, advanced debaters will be able to argue over the philosophical issues and political implications of environmental policies in addition to more creative use of plans, counterplans, and kritiks. Additionally, the political calendar ensures that there will be a wide range of timely and topical issues for debaters to discuss. The debating season will kick off a few months into either the first term of a new Democratic president – a prospect that will likely involve a thorough re-examination of U.S. environmental policies – or the second term of President Trump, who may institute additional regulatory rollbacks, heightening the urgency of this issue. Regardless of the White House occupant, the impending 2022-midterm elections will keep issues like regulatory policy and the environment in the public discussion.

The rich diversity of both affirmative and negative ground comes into sharper focus when considering the major issues surrounding U.S. water policy.

Water Quality

Pollutants/Contaminants

Core Affirmative Ground

With an ample literature base establishing lax enforcement of water protection laws on the books and dangerously high levels of pollutants and contaminants in numerous water systems, affirmative teams have a bevy of options for focusing on specific water pollution issues -- by proposing a plan to address lead, mercury, or other specific pollutants and contaminants, for instance -- or proposing a national policy designed to comprehensively address the pollution and contamination of the nation's water supply. Additionally, debaters can orient the debate toward national security with cases emphasizing the persistent chemical, biological, and radiological threats to the water supply. Potential advantages include: public health, environmental, bioterror, economy, and many more.

We can also expect affirmatives to present “environmental justice” as a core advantage of any plan to address water quality. Racial minorities and other historically disadvantaged populations have borne the brunt of water quality violations, and environmental policy experts have increasingly emphasized this dimension of the issue.

Pullen Fednick, Kristi, Steve Taylor, and Michele Roberts, “Watered Down Justice,” September 2019, <https://www.nrdc.org/sites/default/files/watered-down-justice-report.pdf>

So, it is no surprise that drinking water safety is a significant concern, especially for communities of color. A 2017 Gallup poll revealed that 80 percent of U.S. residents of color worry “a great deal” about the purity of their drinking water—up from 73 percent in 2015. For communities already overburdened with health and environmental hazards, which tend to be low-income communities and/or communities of color, toxic drinking water can be devastating. NRDC, the Environmental Justice Health Alliance for Chemical Policy Reform (EJHA), and Coming Clean analyzed national drinking water data to investigate the relationships between SDWA violations and sociodemographic characteristics such as race and income, and found that drinking water violations, long-term noncompliance, and weak enforcement were more likely to occur in counties with greater racial, housing, transportation, and economic disenfranchisement. Racial, ethnic,

and language vulnerability and poor housing and transportation quality, had the strongest relationships to drinking water violations. Racial, ethnic, and language vulnerability, had the strongest relationships of the characteristics studied with most indicators of weak compliance and enforcement, including length of time out of compliance.

Core Negative Ground

Given the significant resources it would require to address the nation's water quality challenges, negative debaters have the opportunity to link affirmative cases to numerous spending, tradeoff, budget, economy, and politics disadvantages. Federalism is another area ripe for debate: Not only are there traditional conservative arguments to make against a significant expansion of federal government power, but as the mounting divide between President Trump and Democratic governors over coronavirus-related state lockdowns in spring 2020 shows, left-of-center sources are also increasingly receptive to states' rights, including in the area of environmental policy.

Indeed, California and other states have recently sued the Trump EPA to prevent the agency from blocking the state's more stringent fuel-efficiency standards.

Dennis, Brady and Juliet Eilperin, "California and nearly two dozen other states sue Trump administration for the right to set fuel-efficiency standards," Nov. 16, 2019, <https://www.washingtonpost.com/climate-environment/2019/11/15/california-nearly-two-dozen-other-states-sue-trump-administration-right-require-more-fuel-efficient-cars/>

California and 22 other states sued the Environmental Protection Agency on Friday, asking a federal court to block the Trump administration from stripping the nation's most populous state of its long-standing authority to set its own fuel-efficiency standards on cars and trucks.

"We've said it before, and we will say it again: California will not back down when it comes to protecting our people and our environment from preventable pollution," the state's attorney general, Xavier Becerra, said in a statement announcing the action. "No matter how many times the Trump administration attempts to sabotage our environmental progress, we will fight for clean air."

Due to states' leadership on environmental issues and wild fluctuations in federal policy in recent decades, negative teams could highlight numerous disadvantages to a federally-

mandated approach, from economic uncertainty DAs to solvency arguments that the federal government is a poor agent of action for ensuring water quality is protected and maintained. Negative teams that desire a K debate may target the plan as a source of structural violence as many impacts of environmental damage are unevenly borne by minority communities. Negative teams may question whether the affirmative appropriately addresses racial inequalities in environmental policy or they may decide to run an anti-blackness position that scrutinizes the entire substance of the debate topic and its lack of action on violence against the black community.

Infrastructure

Core Affirmative Ground

For all of the much-ballyhooed “Infrastructure Weeks” the administration has proclaimed in recent years, the U.S. has yet to undertake a major infrastructure policy change. Affirmative cases could focus on the need to upgrade the nation’s aging water infrastructure, as well as on the modern cyber threats to critical infrastructure systems including the national water grid. This opens opportunities for vibrant debates on U.S. economic growth, national security, hegemony, and technological leadership, in addition to implicating critical issues like improving access to quality water.

Core Negative Ground

Negative routes of attack include agent counterplans (e.g. alternate government agencies or the private sector), politics DAs, federalism DAs, spending/budget DAs, and economy DAs. While affirmative teams could cite macroeconomic evidence pointing to the economy-stimulating “multiplier effect” of infrastructure spending, negative teams can cite evidence from economists arguing that such public investments crowd out private spending and consumption.

Given that this debate would unfold amid the aftermath of a likely coronavirus-induced recession, these economic questions could infuse the debate with even more timeliness and relevance. With many affirmative teams likely to focus on the national security aspect of U.S. critical infrastructure, kritiks like “terror talk” and “securitization” are also relevant. Teams wishing to run a feminist argument will have plenty of literature supporting a view of linking feminism to questions of environmentalism.

Daza, Vanessa “Two Fights in One: Feminism and Environmentalism.” *Dejusticia*, 22 Apr. 2019, www.dejusticia.org/en/column/two-fights-in-one-feminism-and-environmentalism/.

They certainly seem like two different battles. However, a front has existed for decades that views environmental degradation and gender inequality as two sides of the same coin.

Ecofeminism, which emerged as a nearly inevitable consequence of the synapse between the feminist and ecological movements of the seventies and eighties, is founded on the premise that forms of oppression are connected. It attempts to establish a connection between environmental degradation and the oppression of women. For ecofeminists like Maria Mies and Vandana Shiva, **this connection stems from a common root of domination: the patriarchal-capitalist power structure. This structure combines the patriarchal understanding and organization of the world into binaries (man/woman, human/nature), which manifests itself in a hierarchical social order where some are superior to others, with the capitalist logic of the creation and accumulation of wealth at the lowest possible cost as the only form of progress for societies. This association between patriarchy and capitalism results in a binary and hierarchical structure that promotes and justifies the superiority of the white, male, “human” subject, allowing for the “other/s” to be considered in opposition to and therefore inferior. Women and nature, then, can be used by the white male at his convenience; he progresses and prospers at their expense.**

A neoliberalism/capitalism kritik could question how water and its infrastructure are treated as commodities rather than public goods.

Drinking Water

Core Affirmative Ground

The ongoing Flint water crisis is one of the starkest illustrations of the threats to the nation’s drinking water supply, but Flint is far from the only place to see its drinking water

contaminated. With reportage and research indicating that rural areas are particularly hard-hit by drinking water quality problems, affirmative teams could focus their plans on those or other specific regions of the country. Teams could also focus on specific contaminants, including pharmaceuticals, pesticides, herbicides, metals, and other polluted runoff.

Despite laws on the books meant to ensure safe and clean drinking water, affirmative teams can draw on a substantial body of literature demonstrating that the threats to drinking water -- and our understanding of those threats -- have evolved since major U.S. environmental laws were signed in the late 20th century.

Beckman, David S., “The Threats to Our Drinking Water,” Aug. 6, **2014**,
<https://www.nytimes.com/2014/08/07/opinion/the-threats-to-our-drinking-water.html>

The first is that while our country has made huge strides in reducing water pollution since the 1970s, when Congress passed federal laws like the Clean Water Act and the Safe Drinking Water Act, controlling water pollution is not a “set it and forget it” endeavor. Those statutes set broad goals but depend on states and the Environmental Protection Agency to design and update programs to keep the water clean. Charleston underscores the imperative of ensuring that clean water policies are fully implemented and strengthened where necessary. Toledo reminds us that threats are not static and neither is the environment. Polluted runoff was not a primary focus in 1970, and the consequences of climate change were not considered then. But now we recognize that runoff from farms, lawns, streets and parking lots is a major problem across the country and more difficult to control because of its ubiquity. And we also now know that climate change doesn’t just warm the air, it can warm water — resulting in more algae blooms.

Affirmative cases could also focus on climate change mitigation strategies; experts warn that worsening climate change will further jeopardize safe drinking water.

Smith-Schoenwalder, Cecilia, “EPA Head Says Drinking Water a Larger Threat Than Climate Change,” Mar. 20, **2019**,
<https://www.usnews.com/news/nationalnews/articles/2019-03-20/epa-head-says-drinking-water-a-larger-threat-than-climate-change>

Dennis Lettenmaier, a professor at the University of California, Los Angeles Geography Department, said he partially agrees with Wheeler's statements on drinking water. Despite agreeing that contaminated drinking water is a "now" problem, Lettenmaier said it should not prevent work on climate change. The two issues go hand-in-hand, he said.

Climate change "provides an additional stress on our ability to provide safe drinking water," Lettenmaier said over email. Water issues influenced by climate change include reduced streamflow and higher contamination rates for surface water, Lettenmaier said. Surface water, which includes rivers, streams, lakes and reservoirs, made up nearly 80 percent of all the water used in the U.S. in 2015, according to the U.S. Geological Survey.

Core Negative Ground

Because so many complex challenges intersect with the issue of safe drinking water -- climate change, pollution, and a patchwork of state and local policies -- negative teams can assail the solvency of any affirmative plan they argue is insufficiently large in scope. In the cases of wide-scale plans, DAs like federalism, spending, politics, and so on come into play. Negative teams could also present environmental tradeoff DAs -- arguing, for example, that passing a plan to protect safe drinking water will undercut other important environmental initiatives, like addressing climate change, air pollution, clean energy, and more. Debates may center on the ontological underpinnings of resolving water issues. Philosophers like Bataille, Baudrillard, Deleuze, Foucault and Guattari can be cited to investigate the way environmental policy is constructed. The very reality of environmental crises or the efficacy of solutions from a policy lens may be questioned.

Hargreaves, Tom (2010): Putting Foucault to work on the environment: Exploring pro-environmental behaviour change as a form of discipline, CSERGE Working Paper EDM, No. 10-11, University of East Anglia, The Centre for Social and Economic Research on the Global Environment (CSERGE), Norwich

A series of studies in the mid-1990s and early 2000s questioned the self-evident nature of 'the environment' and 'environmental problems' that is taken for granted at the heart of psychological understandings. Instead, this line of research sought to understand how the environment was discursively constructed as in crisis and as in need of remedial action. These studies demonstrated empirically how **the environment and environmental problems are not 'out there' and fixed, but are in fact constructed in different ways by different agents at different times and in different places** (e.g. Burgess et al 1998; Burningham and O'Brien 1994; Harrison et al 1996; Myers and Macnaghten 1998; Macnaghten and Urry 1998). Subsequent studies examined how **these environmental discourses functioned in the course of everyday life, revealing not only that they are often marginalised by other prevailing social discourses in specific contexts** (e.g. Bedford 1999; Burgess et al 2003; Moisander and

Pesonen 2002), **but also that the dominant environmental discourses of ecological modernisation themselves contain and reinforce an individualistic conception of social agency** (e.g. Maniates 2002). Further still, this inherent individualism is often resisted by individuals themselves, who do not merely accept exhortations to ‘do their bit’, but are seen to contest a discourse that presents individual action as the logical response to systemic unsustainability (Macnaghten et al 1995; Macnaghten and Jacobs 1997; Hobson 2004). More recently still, **proponents of social practice theory have begun to emphasise the routine and inconspicuous nature of everyday consumption (Shove and Warde 2002) and to consider the extent to which anti-environmental action is a systemic property locked-in to the bundles of social practices that make up normal everyday life** (e.g. Hargreaves 2008, forthcoming; Røpke 2009; Shove 2003, 2004, forthcoming; Southerton et al 2004; Spaargaren and Van Vliet 2000; Warde 2005). These studies have considered the systems of provision that enable and constrain everyday practices, demonstrating how **particular and often unsustainable norms and conventions are literally built-into the surrounding material infrastructure** (Shove 2003). Further, these studies illustrate how, far from picking, choosing and controlling the practices they perform, **individuals are in fact only a small part of the practices they ‘carry’** (Reckwitz 2002). Accordingly, **even if exhortations to change behavior were widely heeded, practices and the systems of provision amid which they are performed may not respond so readily or predictably.**

These positions would allow advanced debaters to learn about theory arguments that go beyond traditional policy discussions.

Water Security

Core Affirmative Ground

Security has taken priority in national policy in a pointed way since the terrorist attacks of September 11th, 2001. While security is always one of the most important aspects of federal responsibility, the attacks on 9/11 made the unimaginable, real. Attacks that once seemed like fantasy can no longer be dismissed. An example of an unimaginable attack would be one involving the US water system. The United States could suffer greatly from an attack on public or private water systems. Although this threat is known to many in the security community, not enough is being done to enhance water security. Affirmative teams will work to establish the negligence of the status quo in failing to act to secure the water supply and demonstrate the impact that an attack could have on our country.

First, affirmative teams will want to outline water vulnerability in the United States. For instance, water security has not received adequate attention because most resources go toward simply maintaining our aging water systems.

Tindall, J. A., & Campbell, A. A. *Water Security: Conflicts, Threats, Policies*. (2012). DTP Publishing. Ebook. 1784.

A number of water - supply specialists also concede that the country's 54,065 public and private water systems are vulnerable. Stanford professor Richard Luthy, chair of the Water Science and Technology Board of the National Research Council, in Congressional testimony said, "Although recognized in the past, the vulnerability of our water systems to deliberate acts has not received sufficient attention. The reasons include the fact that simply developing and maintaining our existing water system received primary attention."

Also, affirmative teams can point to concrete examples of water being ignored as a security risk. An example of how water is often omitted from security concerns is its absence from the DHS anti-terrorism program.

Harrell, Brian, "Protecting vital water infrastructure," 2017,
<https://www.csoonline.com/article/3190651/protecting-vital-water-infrastructure.html>

Multiple governing authorities pertaining to the security of the water sector provide for public health, environmental protection, and security measures. Notably, **the water sector is currently excluded from the Chemical Facility Anti-Terrorism Standards (CFATS), a DHS program that regulates high-risk chemical facilities to ensure they have security measures in place to reduce the risks associated with these chemicals. Water associations have won the exclusion argument by suggesting that they are adequately covered by the rules under the Bioterrorism Act of 2002. Currently, CFATS excludes public water systems (as defined in the Safe Drinking Water Act) and water treatment facilities (as defined in the Federal Water Pollution Control Act) from the program. This exemption has been called into question many times, even by the leadership of the US House Committee on Homeland Security.**

Harrell goes on to discuss how the security of the water sector has often been overshadowed by concerns over the power grid. This has left the water sector vulnerable to chemical, biological, and radiological attack.

Harrell, Brian, “Protecting vital water infrastructure,” 2017,
<https://www.csoonline.com/article/3190651/protecting-vital-water-infrastructure.html>

Improving the security of the United States' drinking water and wastewater infrastructure has not received the attention it requires. Over the past two decades of combating home grown and international terrorism, the electricity sector has received the majority of critical media headlines; however, the water sector may be the more vulnerable.

The most prominent and likely forms of terrorist attack on the water sector include the intentional release of chemical, biological, and radiological contaminants into the water supply or wastewater systems, disruption of service from explosions, and breaches in cybersecurity. The water sector is complex, composed of drinking water and wastewater infrastructure of varying sizes and types of ownership. The sector has its own unique risks driving sector security and resilience activities, including threats, vulnerabilities, and consequences.

In addition, cybersecurity is a concern for the nation’s water systems. Rogue hackers and hostile nation-states are exploiting cyber weaknesses in U.S. critical infrastructure, including water.

Walker, Jennifer Lynn, et al., “15 Cybersecurity Fundamentals for Water and Wastewater Utilities: Best Practices to Reduce Exploitable Weaknesses and Attacks,” 2019,
<https://www.waterisac.org/system/files/articles/15%20Cybersecurity%20Fundamentals%20%28WaterISAC%29.pdf>

Water and wastewater utilities provide critical lifeline services to their communities and their regions. Safe water and clean water are essential for public health, ecosystem protection and economic strength. Supporting these important functions requires secure information technology (IT) and operational technology (OT). Yet, our sector’s IT and OT networks continue to face an onslaught of threats from cyber criminals and nation-states, hacktivists and others. Cyber criminals’ attacks, both indiscriminate and targeted, are designed to steal or extract money and collect sensitive personal information, which in turn can be sold to the highest bidder. Nation-states – primarily Russia, China, North Korea and Iran – have demonstrated the desire and ability to infiltrate IT and OT systems and, in the case of the energy and manufacturing sectors in other countries, to disrupt operations. **“Moscow is now staging cyberattack assets to allow it to disrupt or damage U.S. civilian and military infrastructure during a crisis, and poses a significant cyber influence threat,” says Dan Coats, Director of National Intelligence.**

As this evidence demonstrates, water security as an affirmative case offers teams the opportunity to discuss national security and gain advantages from a reduction in risk of terrorism.

Core Negative Ground

The negative team will have ample opportunity to argue that current efforts are adequate for the threat that is currently posed. Also, any plan to broadly improve security to such a vast system will run into several problems: cost, collaboration, and capability. The first major issue will be the cost of the plan. According to the EPA there are over 148,000 public water systems in the United States. The cost to improve security at all of these locations would be immense whether it involved training, staff, or technology. Furthermore, the ability for different sectors of government to coordinate will surely play a role in determining the success of a water security policy. Water security is often a shared responsibility between the EPA and DHS. Negative teams will be able to show that neither has the ability to succeed without the other, yet cannot successfully execute this collaboration. Other critical infrastructure also plays an important role in water security. Since power is required to run water facilities, negative teams can argue that a tradeoff between water and energy security where the power grid is left vulnerable will harm both. Finally, there is the question of whether the federal government even has the capacity to achieve such a broad goal. The issue of federalism could still come into play despite the fact that the plan would deal with national security. If this hurdle is overcome, there will always be the nagging issue of federal follow-through. With a variety of governmental agencies involved, there are many ways for solvency to be diminished. Also, whenever the issue of security is broached, securitization kritiks will surely be discussed. Teams may wish to analyze the extent to which the assumptions of security threats occlude other more prescient impacts like structural violence. Authors like Foucault and the idea of biopower could be brought up to consider the ramifications of focusing on security as a policy goal. Finally, debaters may wish to focus on the capitalist hierarchies that make national water security credible and necessary.

VII. Quality

Providing students the opportunity to discuss water quality not only encourages the civic discussions we want for our students, but also inspires the historical, political, and scientific discussions that are vital for young adults. This topic has massive value as a cross-curricular tool for teachers. Also, the topic provides students the opportunity to discuss issues of equity in our country that disparities in water quality expose.

VIII. Material

In the course of researching and debating this topic, debaters will encounter a diverse range of high-quality source material covering a variety of perspectives – from scientific studies on water quality, to mainstream media coverage of the issue, to think tank analyses (liberal, conservative, and centrist) on the pros and cons of different policy and regulatory approaches. Water quality will continue to be discussed in academic science journals. Books are written every year about the issue of water quality in the United States. In addition, daily publications cover it as it has become a political issue locally and nationally. The likelihood of students finding high quality source material while researching this topic is assured.

IX. Balance

The topic has ample ground on both sides of the debate. While the affirmative will rely on strong harms scenarios and environmental advantages, the negative will be well equipped with arguments about enforcement, circumvention, federalism, cost, and environmental justice.

Enforcement:

In order for environmental policies to move forward, they must be supported and executed at the local level. In many cases, this does not occur. The water crisis in Flint, MI shows how despite the presence of regulations, water quality was not protected.

Bliss, Laura. “The Flint Water Crisis Shows How Environmental Regulations Fall Prey to Local Politics.” Bloomberg.com, Bloomberg, 12 Feb. 2016, www.bloomberg.com/news/articles/2016-02-12/the-flint-water-crisis-shows-how-environmental-regulations-fall-prey-to-local-politics

One crucial concept is environmental federalism, the basic enforcement structure underlying America’s big environmental protection laws. **The federal government sets environmental standards, such as the Safe Drinking Water Act. States are the “primacy agencies” charged with implementing and enforcing those standards on a local level.** Local governments and public water districts are supposed to comply with the state (and, by extension, the feds). **But environmental federalism creates some common trip-ups.** First of all, **“local and state politics always affect compliance,”** says Teodoro. **Local governments might determine that the cost of complying with federal and state standards is simply too high, too burdensome, or too politically onerous. For instance, compliance might require raising water rates, a risky move for local leaders seeking reelection. Or maybe the local population served by the water agency is politically marginalized, and thus deemed unworthy of the funding necessary for compliance.**

The realities of enforcing mandates at the local level will certainly prove challenging at best for the affirmative. At worst, many communities of color that already experience environmental risks at heightened levels will be left behind as other, more affluent/politically engaged communities improve.

Circumvention:

The Trump administration's attitude toward science during the coronavirus pandemic is a prime example of what can happen to sound scientific advice when it runs afoul of economic interests. Affirmative teams might need to prove that their policies can survive the political circumvention that occurs when science attempts to hamper economic gains.

Beynen, P. E. Van. "Editor's Message: Impact of Politics on USA Water Quality Monitoring, Protection and Management." *Hydrogeology Journal*, vol. 26, no. 6, **2018**, pp. 1763–1765., doi:10.1007/s10040-018-1791-5.

What steps can hydrogeologists take to improve public awareness of the need to protect our groundwater that is being threatened under the current political regime? No quick and easy answer exists to this question and the concerns of scientists are often ignored. For example, in 2015 the EPA Regulations Manager of the Groundwater and Drinking Water Branch, Miguel Del Toral, informed Thomas Poy, the branch chief, that high lead concentrations had been found in Flint's drinking water (Pieper et al. 2017). The environmental and health concerns of high levels of this contaminant were raised by Dr. Marc Edwards who alerted the Flint public of this threat. The Poy report was ignored leading to the 2016 crisis and the subsequent State of Emergency declaration by President Obama. Intimidation is another strategy used, as found by Dr. Tyrone Hayes of UC Berkeley. He determined that a common herbicide, atrazine, in high concentrations can produce sexual abnormalities in frogs. Syngenta, the company that produces this herbicide, consequently tried to discredit Dr. Hayes research and even prevent the EPA from banning this chemical (Aviv 2014). The Center for Regulatory Effectiveness, run by a consultant of Syngenta, was the organization that petitioned the EPA to prevent this ban from being instituted. Syngenta also formed a panel of scientists to critique his findings even though his research had been published in the Proceedings of the National Academy of Sciences, a top scientific journal. In 2012, Syngenta paid out \$US 105 million to settle class-action lawsuits pertaining to the presence of atrazine in drinking water (Aviv 2014).

The fact that public officials often openly question established science cannot be understated in this scenario. While it may be critical to enact a certain environmental policy, it is rarely possible to do so on a national scale, especially if it could lead to negative impacts for corporations. The inability of the government to act to reduce CO₂ emissions is another example of how corporations can conspire to discredit science that it views as antagonistic to their economic goals.

Federalism:

The federal government provides basic guidelines to keep all citizens safe, but it leaves more specific measures up to states. One benefit to this system is that states are able to specifically address the needs of their local communities. One state that has already signaled a desire to act on water policy is California.

Cahill, Nick. "Newsom Lays Out Big Dreams for California's Water Future July 28, 2020 <https://www.courthousenews.com/newsom-lays-out-big-dreams-for-californias-water-future/>

Touting ways to shield California's most precious resource from climate change, Governor Gavin Newsom released strategies Tuesday to improve drinking water quality, revive a stalled multibillion-dollar tunnel and build new dams. Newsom says the sweeping water portfolio will help the Golden State prepare for global warming by reinforcing outdated water infrastructure and reducing the state's reliance on groundwater during future droughts. "Water is the lifeblood of our state, sustaining communities, wildlife and our economy," said Newsom in a statement. "For more than a year, my administration has worked to assemble a blueprint to secure this vital and limited resource into the future in a way that builds climate resilience for all communities and sustains native fish and the habitat they need to thrive." Newsom kicked off his second year in office in January by announcing the rough draft of the so-called "Water Resilience Portfolio." The planning document, which details 142 water-related ideas, was shaped by the state's resources management agencies and is the result of Newsom's April 2019 executive order. While the resulting blueprint doesn't promise a "quick or singular fix" to California's longstanding water woes, it does offer ways to improve physical infrastructure and water transfers, settle disputes between environmentalists and farmers, implement new recycling programs, improve soil health, wetlands expansion and even restore the Salton Sea.

Different states have different needs concerning water policy. The status quo allows states to act freely to achieve goals tailored to their concerns. This freedom provides the innovation that can lead to technological improvements to the overall system. Unfunded mandates can force states to deprioritize efforts that they had already begun. Even when the federal government provides funding for policies, the strings attached make the mandates less palatable to the localities.

Cost:

Most individuals unknowingly experience the cost of water quality in the form of their utility bill. If regulations were increased, those costs could end up being passed down to consumers, unless defrayed by the federal government. In the case of the former, undue burden would be put on the low-income population of our country. In the case of the latter, the government might find itself unable to pay for mandates which would nullify their positive intended effects.

Frazer, Kate. “Study Examines Costs, Benefits of Clean Water Measures.” Cornell Chronicle, 15 Nov. **2018**, news.cornell.edu/stories/2018/11/study-examines-costs-benefits-clean-water-measures.

The U.S. has invested \$140 per person per year – or more than \$1.9 trillion – since 1960 to decrease pollution in rivers, lakes and other surface waters. According to a pair of new studies, this investment in clean water is working, but questions remain about whether the benefits outweigh the costs. In the first comprehensive look at water pollution in several decades, published in the Quarterly Journal of Economics, researchers from the University of California, Berkeley, and Iowa State University collected 50 million water quality measurements at 240,000 monitoring sites throughout the U.S. between 1962 and 2001. Most of the 25 water pollution measures they used showed improvement, including an increase in dissolved oxygen concentrations and a decrease in fecal coliform bacteria. The number of rivers safe for fishing increased by 12 percent. “It’s difficult to put a dollar amount on things like the value of clean water or a healthy ecosystem.” Catherine Kling, professor of environmental, energy and resource economics. **To explore these findings further, the researchers teamed up with Catherine Kling, professor of environmental, energy and resource economics in Cornell’s Dyson School of Applied Economics and Management and faculty director at the Atkinson Center for a Sustainable Future, to look at the economics of clean water. The resulting study, published online Oct. 8 in Proceedings of the National Academy of Sciences, painted a murkier picture: Almost all of the 20 evaluations of water pollution policies they examined estimated the costs of the Clean Water Act to outweigh its benefits. “There is a general belief that benefits of clean water exceed the costs, so we were surprised to find most actual cost-benefit analyses say the opposite,”** said Kling. That finding led her team to another critical question: Do the costs of current U.S. water-quality regulations exceed their benefits, or do existing analyses underestimate benefits or overestimate costs?

The United States already spends a tremendous amount of money protecting and providing clean water. Unless technological advances make environmental goals more cost effective, certain

initiatives simply will not be economically or politically viable. In addition, local fluctuations in funding make consistency in environmental goals difficult to achieve.

Beynen, P. E. Van. “Editor’s Message: Impact of Politics on USA Water Quality Monitoring, Protection and Management.” *Hydrogeology Journal*, vol. 26, no. 6, **2018**, pp. 1763–1765., doi:10.1007/s10040-018-1791-5.

I do not suggest that water monitoring will cease in the future or that governmental agencies will no longer support relevant programs. National legislation stipulates that monitoring must occur. Such regulation includes the Integrating Clean Water Act Sections 305(b) and 303(d) on monitoring and assessment of state waters. These sections require states to provide lists of impaired water bodies and they require that water monitoring must be an integral part for states to receive Section 106 grants for administering water-pollution-control programs. **Water monitoring programs at all levels of government are essential for maintaining public health, advancing scientific knowledge and protecting the natural environment; however, expenditures–appropriations for monitoring and assessment can vary significantly, thereby making consistent rigorous monitoring difficult. For example, the Minnesota Pollution Control Agency’s water quality monitoring and assessment program, funded by the state’s 2006 Clean Water Fund, had appropriations that varied from the fiscal year 2016–2017 at 11% to the fiscal year 2018–2019 projected to be 18%. In the case of Flint, Michigan, the state’s Department of Environmental Quality, the agency responsible for detecting lead in drinking water, had its 2010 annual budget reduced to approximately \$1.5 million, a \$300,000 decrease from the previous fiscal year (EPA 2010). Obviously, changing appropriations for water monitoring programs can make implementation of regulation requiring monitoring a complex issue and even threaten public health.**

Fluctuations in funding will threaten to undermine the affirmative team’s solvency. Furthermore, these inconsistencies also open the door for more damaging claims of unequal treatment for communities of color.

Environmental Racism:

As Covid-19 has most recently pointed out, health impacts are often overrepresented in communities of color across our country. Water policies are no different. While polluted water can impact anyone, it is more likely to occur in poorer communities and communities of color.

Beech, Peter (Author/Writer) “What is environmental racism?” World Economic Forum. July 31st, **2020**. <https://www.themandarin.com.au/136674-what-is-environmental-racism/>

Poisoned tap water in Flint, Michigan. Toxic waste dumps in the Lower Rio Grande Valley. A town in China where 80% of children have been poisoned by old computer parts. What do these things have in common? All are examples of environmental racism, a form of systemic racism whereby communities of colour are disproportionately burdened with health hazards through policies and practices that force them to live in proximity to sources of toxic waste such as sewage works, mines, landfills, power stations, major roads and emitters of airborne particulate matter. As a result, these communities suffer greater rates of health problems attendant on hazardous pollutants. It was African American civil rights leader Benjamin Chavis who coined the term “environmental racism” in 1982, describing it as “racial discrimination in environmental policy-making, the enforcement of regulations and laws, the deliberate targeting of communities of colour for toxic waste facilities, the official sanctioning of the life-threatening presence of poisons and pollutants in our communities, and the history of excluding people of colour from leadership of the ecology movements”. In practice, **environmental racism can take many forms**, from workplaces with unsound health regulations to the siting of coal-fired power stations close to predominantly non-white communities. **It can mean citizens drinking contaminated groundwater** or being schooled in decaying buildings with asbestos problems. Many of these problems face low-income communities as a whole, but race is often a more reliable indicator of proximity to pollution. **A landmark 2007 study by academic Dr Robert Bullard – the “father of environmental justice” – found “race to be more important than socioeconomic status in predicting the location of the nation’s commercial hazardous waste facilities”.** He proved that African American children were five times more likely to have lead poisoning from proximity to waste than Caucasian children, while even black Americans making \$50-60,000 a year were more likely to live in polluted areas than their white counterparts making \$10,000. In the UK meanwhile, a government report found that black British children are exposed to up to 30% more air pollution than white children. **The case of Flint, Michigan, is a prime example of environmental racism.**

The negative team can run the position as a critical argument or as a solvency turn. The protests proceeding the murder of George Floyd have shown that racism permeates all facets of American society. Environmental policy is no exception. Affirmatives will need to address the concerns of communities of color within their advocacy in order to be viable. Environmental policies must address racism to succeed.

Ali, Mustafa Santiago (Senior Vice President of Climate, Environmental Justice & Community Revitalization for the Hip Hop Caucus. He previously served for 24 years at high-levels within the U.S. Environmental Protection Agency and has worked with over 500 domestic and international communities to secure environmental, health and economic justice reforms) “Environmental racism is killing Americans of color. Climate change will make it worse.” *The Guardian*. July 28th, 2020.
<https://www.theguardian.com/commentisfree/2020/jul/28/climate-change-environmental-racism-america>

We've turned a blind eye to a public health time bomb in already vulnerable communities. "I Can't Breathe" is echoing across the planet. Filled with anguish and pain, these haunting words are spotlighting the systemic racism that has infected unjust policing practices, putting black and brown communities in its crosshairs. As police take lives with choke holds and asphyxiate others with knees on their necks, we are reminded that racism is literally killing our people and planet. Communities of color have appealed for decades to politicians, policymakers and environmental organizations that they "can't breathe," only to be ignored. The simple fact is that Black, Brown, Indigenous and lower-wealth communities have disproportionately been the dumping grounds for our country's deadliest toxic pollutants. We have instituted economic and environmental apartheid through redlining, restrictive covenants and unfair zoning practices. These continuing actions have created sacrifice zones, filled with smelters, coal-fired power plants, incinerators, petrochemical facilities and a host of other polluters. Along with the deadly co-pollutants being pumped into the lungs of local residents every day, sacrifice zones become killing fields. These are the areas of the unseen and unheard, where bodies are riddled with chronic medical conditions such as cancers, liver, kidney, heart and lung diseases, while also being the most medically underserved. These are also the areas where viruses with exotic names like Covid-19, West Nile and dengue come to feed. Studies show that Hispanics, Asians, American Indians/Alaska Natives and especially African Americans experience higher risks of harm (including premature death) from air pollution. Approximately 74 million people of color, or 57%, live in counties with at least one failing grade for ozone and/or particle pollution, compared with 38% of whites. Let's be clear: we got here because we turned a blind eye to the public health time bomb that has been exploding in our most vulnerable communities, and as a result we now have an equally dangerous climate bomb that is accelerated by fossil fuels, racially tinged transportation development and deforestation. Once again, our most vulnerable are most at risk. The late congressman John Lewis warned: "When we take our air, waters and land for granted; when we show a simple lack of respect for nature and our environment, we unmake God's good creation. Humanity is the most important endangered species under threat from climate change and yet we flood our ecology with poisons and pollution." In this light, the Trump administration's decision to withdraw from the Paris climate accord, which will formally take effect in less than 100 days, is all the more troubling. Frontline communities are hit first and worst from climate change. They are the least likely to be able to recover, often forgotten as decisions take place about rebuilding their communities by those who benefit from the disaster economy. And like other pollution, climate change has a cumulative effect on frontline communities. Since 1980, America has been hit with more than 250 weather and climate disasters, with increasing frequency in recent years. According to the National Oceanic and Atmospheric Administration (Noaa), the total cost of these events has exceeded \$1.7tn. From 2016 to 2018, the US experienced a total of 45 billion-dollar weather and climate disasters, or an average of 15 events annually.

-2019 was the Earth's second-hottest year on record. African Americans are disproportionately exposed to extreme heat. From the urban heat island effect, making cities much warmer than rural areas, to the lack of air conditioning and cooling stations in many communities of color, rising temperatures are deadly.

-Floods and hurricanes in 2019 cost dozens of lives and \$20bn in damages. Vulnerable communities endure housing insecurities due to historic discrimination and residential segregation, often locating them in flood-prone areas that obstruct their access to affordable flood insurance and loans to rebuild.

-The climate emergency will have a disproportionate impact on Black and Brown communities. More than two-thirds of US adults say they have some anxiety about climate change, while nearly half of young adults say climate change stress impacts their daily lives. Mental health stressors will probably hit disadvantaged communities the hardest. **President Trump claimed that he wants “crystal clean water and the cleanest and the purest air on the planet”.** **Environmental justice advocates like me agree, but the rhetoric is at odds with his administration’s actions to reverse at least 100 environmental rules. Along with attacks on voting and civil rights, the clear message is that the lives in Black, Brown and Indigenous communities don’t matter. If America is ever going to “win” on climate change, it must first break its addiction to fossil fuels and racism. Only then can it truly be great.**

The issue for the affirmative team in many cases on this topic will be to prove that harms will not simply be shifted away from white communities to communities of color.

A water policy topic, while critically important to any judge, does not skew either way based on the topic itself. Moreover, in a highly dynamic political and policy environment, this topic presents a number of compelling lines of argumentation for both affirmative and negative teams to pursue – including the merits of different agents of action. For instance, is a Trump-led USFG the best agent for ensuring water quality? Is any federal administration the best agent of action, particularly when states with substantial economic clout both nationally and globally, like California, have been more effective agents of environmental change? Numerous political advantages/disadvantages could occur based on political perceptions around further environmental regulations. (e.g. Would zeroing in on water quality advance the cause of environmental protection or divert focus from larger systemic issues that must be addressed to ensure clean air, clean water, etc?) Finally, the economic consequences of an expanded environmental policy (positive or negative) will surely arise amid what is shaping up to be an increasingly turbulent U.S. and global economy. For all these reasons, the topic would offer a fair debate for either side.

X. Interest

Water is of interest to every individual. We all drink water, and we assume that it is healthy and clean. As the crisis in Flint, MI shows, there is no issue that can so fundamentally alter an entire community as the quality of water that is available. Students have a natural curiosity of the world around them. This includes the water they drink.

Possible Affirmative Cases

Increase funding for infrastructure (pipes, dams, treatment facilities, security, port/harbor)
Increase tech investment
Create independent council on water quality
Increase or further regulate testing
Water subsidies for the poor
Regulate pharmaceutical residue
Regulate PFOA's or forever chemicals
Consolidate utilities
Regulate rural/private water
Move drinking water to Health and Human Services
Fund research into chemicals
Safe Drinking Water Act reform
Clean Water Act reform
Wastewater reuse
Regulate water use
Desalination
Address Climate Change
Green New Deal

Possible Negative Positions

Federalism Disadvantage
Spending Disadvantage
Economy Disadvantage
Environmental Trade-off Disadvantage
Security Trade-off Disadvantage
Politics Disadvantage
States Counterplan
Courts Counterplan
Foreign Partnership Counterplan
Agent of Action Counterplans
Case Negatives (Cost/Efficacy)
Circumvention/Non-compliance
Anthropocentrism Kritik
Environmental Racism Kritik
Neoliberalism Kritik
Securitization Kritik
Biopower Kritik
Baudrillard Kritik
Anti-Blackness Kritik
Feminism Kritik

Domestic Water

2021-22

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