



The WATER Act:

Restoring Federal Support for Clean Water Systems

Across the country, outdated wastewater systems dump hundreds of billions of gallons of raw sewage into our waterways each year, polluting water resources, endangering public health, harming aquatic life and damaging our environment.¹ It has been 50 years since the passage of the Clean Water Act, and an unprecedented climate emergency is overwhelming our aging wastewater systems.

Climate chaos is driving extreme weather that worsens sewage spills and dumps toxic waste in cash-strapped communities across the country, particularly in the Midwest and Northeast,² while the Southwest suffers a megadrought, fueling fires and depleting water supplies.³ Without dedicated federal funding, many communities cannot afford to make the necessary repairs to the collection, treatment and septic systems that keep our water clean and safe. This lack of investment in water infrastructure isn't just shortsighted; it's dangerous. Aging systems contaminate our natural and built environments and threaten the health and safety of our water and of people everywhere.

It's time to pass landmark water legislation for the 21st century: the Water Affordability, Transparency, Equity and Reliability (WATER) Act. Our nation's water systems need dedicated federal commitment to keep the promise of clean, safe water for everyone.

Clean Water Act

In 1972, Congress overrode a veto by President Richard Nixon to pass into law the Clean Water Act, a defining environmental victory of the 20th century. The legislation was intended to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." It has been one of our most effective environmental laws.⁴

To help communities comply with wastewater standards, the law dramatically increased funding for the wastewater system construction grants program, providing nearly \$41 billion through 1984. According to the Congressional Research Service, it was “the largest nonmilitary public works program since the Interstate Highway System.”⁵

The Daunting State of the Nation’s Wastewater Systems

Aging Systems

Many of the nation’s wastewater treatment plants were built or improved with the federal dollars provided by the Clean Water Act.⁶ By 2021, however, water and sewer pipes were averaging 45 years old, and many were approaching the end of their lifespan.⁷ These aging wastewater systems need major updates to protect human health and the environment.⁸ Overall, the American Society of Civil Engineers gave the country’s wastewater infrastructure a grade of D+ in 2021.⁹

Growing Needs

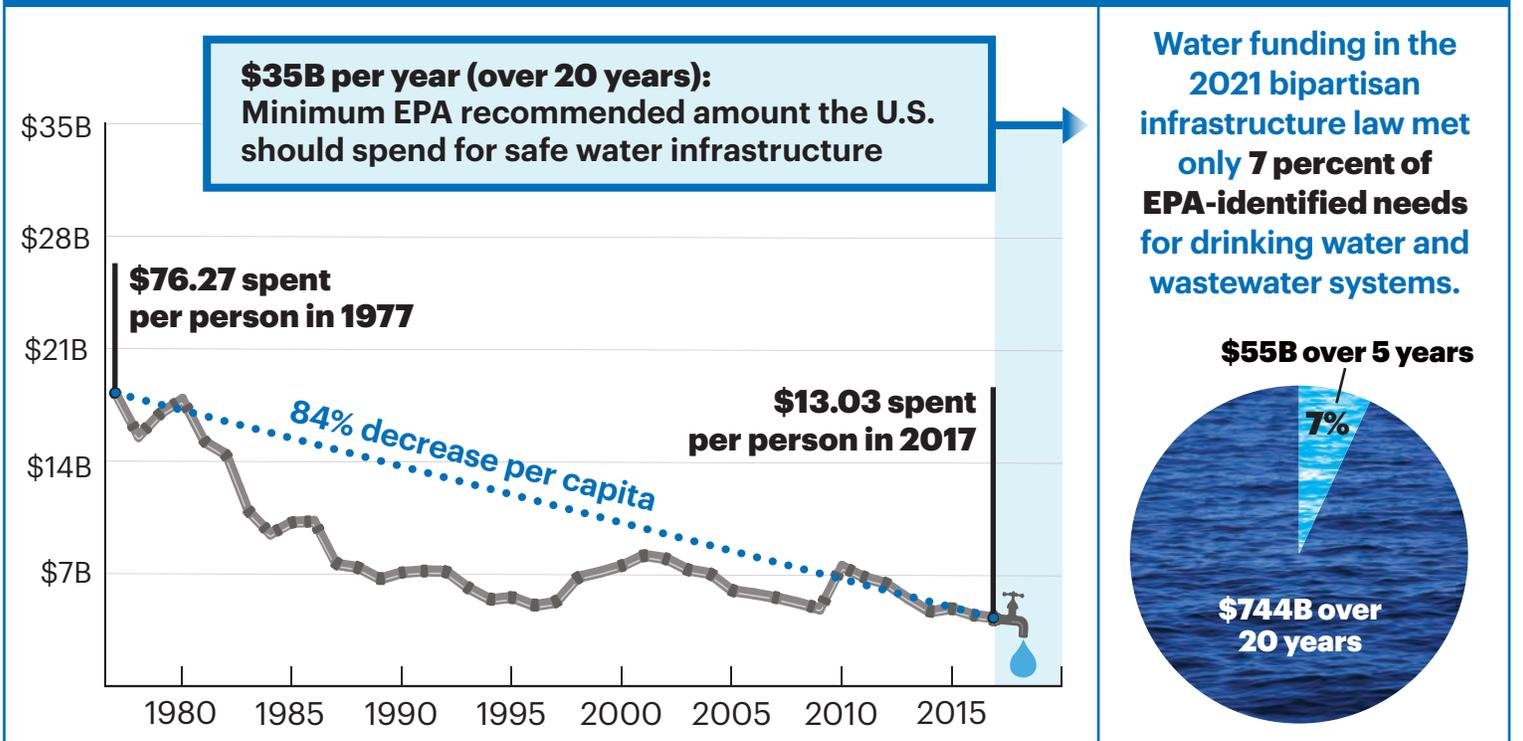
In total, our drinking water and wastewater systems require at least \$744 billion in investment over the next

20 years, or more than \$35 billion a year (see Figure 1).¹⁰ Public wastewater systems alone, as of the latest needs survey in 2012, needed at least an estimated \$271 billion over two decades to improve treatment plants, sewer lines, address stormwater and stop overflows.¹¹ But the U.S. Environmental Protection Agency’s (EPA) Clean Water State Revolving Fund Program, the main source of federal support for wastewater projects, provided a mere \$1.6 billion in 2021,¹² and the infrastructure law of 2021 added only \$12.7 billion over five years to this program.¹³ This falls far short of the total need.

Overall, federal funding for water and wastewater infrastructure has plummeted since its peak in the 1970s, dropping 77 percent from 1977 to 2017 in real terms.¹⁴ That’s a per capita decrease in funding of 84 percent.¹⁵

A 2020 wastewater industry survey found that two-thirds of spending on capital improvement plans went to update aging systems and to address combined sewer overflows, and that improvement budgets had grown 24 percent over the previous three years.¹⁶ Federal support through the State Revolving Fund program, however, accounted for only 15 percent of long-term financing,¹⁷ leaving a huge gap between what communities know they need and what the federal government has provided.

FIG. 1: Federal Spending on Public Water Infrastructure



Climate Chaos

Climate chaos threatens to strangle the nation's access to clean water, causing more sewage spills and compounding the costs of urgently needed updates to aging systems.¹⁸ In 2022, the megadrought in the southwestern United States was so severe that the last two decades were estimated to be the driest period in 1,200 years, causing water shortages and fueling wildfires.¹⁹

Weather disturbances also contribute to water system disruptions, including operational outages, loss of supply or restrictions on water use, and degraded water quality.²⁰ Extreme weather has been catastrophic to water infrastructure. Flooding and sea-level rise further threaten systems and can force infrastructure relocation. Also, heavy rainfall leads to more sewage overflows. The total costs of adapting our water and sewer systems to meet the threats of climate chaos are already high and are projected to near \$1 trillion by 2050.²¹

Affordability Crisis

Many communities struggle to meet the costs of keeping water clean, maintaining aging systems and grappling with climate emergencies. With meager federal support, water and wastewater systems are forced to hike customer rates.²² From 2008 to 2014, water and sewer rates nationwide increased by about 40 percent on average.²³ Over the last 15 years, water bills have increased at three times the rate of inflation, but household incomes have fallen in real terms.²⁴



Households and localities are grappling with water service costs that are increasingly unaffordable.²⁵ This problem has become especially complex in this period of widening income inequality and reliance on regressive water billing practices, which lead low-income households to pay a disproportionate amount of their income for their water service.²⁶

Many communities are stuck with an impossible choice: raise rates on people who cannot afford to pay, or allow aging systems to spill sewage into homes and waterways and endanger public health. Because of structural inequities, this crisis is not felt equally. Black and Brown communities are disparately impacted because of systemic racism, leading to unaffordable water bills,²⁷ service shutoffs,²⁸ failing wastewater and septic systems, greater pollution burdens and human illnesses.²⁹

Threats

Outdated Systems and Sewage Spills

The EPA estimated in its last assessment that more than 850 billion gallons of raw sewage were being spilled each year across the country.³⁰ That's enough to fill more than 1 million Olympic-sized swimming pools. Sewer overflows can cause raw sewage to back up into basements, flood onto streets and spill into rivers, lakes and streams.³¹ While improvements have been made, this remains a problem in communities across the country.³²

Outdated systems are vulnerable to spills during storms. When there is heavy rainfall or snowfall, outdated wastewater systems overload, and large volumes of sewage spill into local waterways.³³ In 2014, nearly 1,500 different spills discharged at least 22 billion gallons of untreated sewage into the Great Lakes Basin alone.³⁴

Climate change is making things worse.³⁵ The storm surge caused by 2012's Hurricane Sandy—the largest storm to hit the Northeast to date—resulted in the spillage of 11 billion gallons of raw and partially treated sewage into waterways and city streets.³⁶ In 2021, Hurricane Ida also caused major spills of raw and partially treated sewage, including 350,000 gallons in Panama City, Florida;³⁷ nearly 1 million gallons in

Mobile, Alabama;³⁸ more than 130 million gallons in the Merrimack watershed, Massachusetts;³⁹ and hundreds of thousands of gallons in New Orleans.⁴⁰

Failing Septic Systems

Aging home septic systems add to the problem. Wastewater from failing septic systems is a large source of groundwater pollution in the United States.⁴¹ More than one in five U.S. households rely on home septic systems instead of a centralized sewer system. Together, these decentralized systems treat more than 4 billion gallons of sewage every day.⁴²

Many septic tanks are aging, failing, and endangering the environment and human health.⁴³ Households bear the burden of maintaining and updating their septic systems, but the cost is unaffordable for many low-income rural residents.⁴⁴ Failing household septic systems can contaminate water supplies and endanger human health.⁴⁵ A 2013 survey in Ohio estimated that 31 percent of household septic systems were failing.⁴⁶ Many rural residents in central Appalachia do not have a safe way to dispose of wastewater.⁴⁷

Failing septic systems have been associated with bacterial contamination of groundwater.⁴⁸ A 2003 study found that 40 percent of Alabama's septic systems were failing or in need of repair, while bacteria contaminated 46 percent of household water wells in the state, leaving an estimated 340,000 residents with greater risks of waterborne disease.⁴⁹ In Alabama's Black Belt region, because of rural poverty, structural racism, and soil characteristics, not only do many septic systems fail but also many homes use straight pipes that directly pour raw sewage into woods or a ditch. A 2016 survey of Wilcox County, Alabama found that only 7 percent of homes had permitted septic systems, while 60 percent of homes examined had straight pipes, which together released more than half a million gallons of raw sewage every day.⁵⁰ In Lowndes County, Alabama, a majority-Black county, at least 40 percent of homes lack adequate sanitation, and the cost of installing a system can exceed the average resident's annual income.⁵¹

Climate chaos will continue to amplify these problems. More systems will fail as sea levels rise, precipitation increases and temperatures warm.⁵²

Polluted Waters

Sewage spills harm the environment; they pollute rivers, streams, and other water bodies, and they can contain toxics and dangerous pathogens that endanger human health.⁵³ These toxic overflows have destroyed aquatic life, killed fish and closed shellfish harvesting areas.⁵⁴

Overall, because of all sources of pollution, two-thirds of estuaries in the United States have elevated risks of eutrophication (see box) and harmful algal blooms.⁵⁵ More than a third of the shoreline area of the Great Lakes is in fair or poor biological condition (a third of the area was unable to be studied).⁵⁶ Less than one-fifth of estuarine and Great Lakes waters have fish in good condition.⁵⁷ In total, more than half of U.S. rivers and streams, 40 percent of lakes and 21 percent of coastal waters have excess nutrients (which can lead to excessive algal growth and cause fish kills), and 73 percent of U.S. wetlands have lost plant life, which can stress the ecosystem.⁵⁸

Sewage spills have made water too polluted to swim, boat or fish.⁶⁰ In 2020, one-third of the recreational beaches in the United States had at least one advisory or closing. Over the last five years, between



Eutrophication

A process that occurs when an estuary or another body of water has an excess of nutrients that causes too many plants and algae to grow. This can lead to toxic algal blooms and low-oxygen waters that kill aquatic life.⁵⁹

28 percent and 33 percent of beaches have had at least one advisory or closing each year. Aging and poorly designed sewage and stormwater systems contribute to many of the beach closures.⁶¹ In 2020, wastewater and septic systems were responsible for one-fifth of the beach closings and advisories with known causes (although nearly half of closings have unknown causes, some of which may be related to wastewater events).⁶² Increased funding to improve wastewater systems and address stormwater can help stop pollution of the nation's beaches.



Human Illnesses

More than 7 million cases of waterborne diseases are reported in the United States every year.⁶³ As a result of these illnesses, more than 100,000 people are hospitalized and over 6,000 people die a year.⁶⁴ People become sick from drinking contaminated water; swimming in polluted pools, lakes and beaches; and other exposures to contaminated water.⁶⁵

The EPA estimated that thousands of people become sick each year just from exposure to sewage-contaminated recreation areas.⁶⁶ Wastewater contains viruses, bacteria and other pathogens that can cause serious illness. Many people are exposed to raw sewage that backs up in their homes or yards from overloaded municipal sewer systems or failing septic systems.⁶⁷ People exposed to sewage-polluted waters can become sick with hepatitis, gastroenteritis, and infections of the skin, lungs and ears, among other illnesses.⁶⁸

Failing septic systems can also expose people to high nitrate levels in household well water, which can lead to the potentially deadly blue baby syndrome in infants.⁶⁹ In Wilcox County, Alabama, researchers estimated that the raw sewage dumped from straight pipes from homes into the environment releases 10 billion viruses and 19 billion parasites every day.⁷⁰ In Lowndes County, Alabama, one study found that more than 40 percent of households were exposed to raw sewage, and more than a third of adults tested positive for gastrointestinal parasites, including hookworm.⁷¹

Conclusions and Recommendations

It's time for the WATER Act — the landmark 21st-century legislation that we need to restore federal support and help protect clean water. The WATER Act is the only permanent solution to our nation's water funding woes, providing \$35 billion each year to restore our public water infrastructure.

In addition to funding drinking water improvements, the WATER Act will provide \$18.1 billion each year to address the nation's wastewater problems:

- \$15.7 billion a year to the Clean Water State Revolving Fund to fund publicly owned wastewater system upgrades, with at least half of the funding prioritized as grants or additional subsidization to disadvantaged communities;
- \$871 million a year to help update and install household septic systems and other on-site sewage disposal systems;
- \$871 million a year for non-point-source management programs;
- \$523 million a year for pollution control programs; and
- \$174 million a year for technical assistance to rural, small or indigenous wastewater providers.⁷²

Now is the time to fully fund our wastewater infrastructure to help clean up our waterways and protect our communities.

Endnotes

- 1 U.S. Environmental Protection Agency (EPA). Office of Water. "Report to Congress: Impacts and Control of Combined Sewer Overflows and Sanitary Sewer Overflows." (EPA 833-R-04-001). August 2004 at ES-2, ES-3 and ES-5.
- 2 Bagenstose, Kyle and Kevin Crowe. "US sewer systems weren't built for climate change; heavier rainfall can overwhelm systems, causing toxic spills in communities that can least afford it." *USA Today*. December 7, 2021.
- 3 Fountain, Henry. "How bad is the western drought? Worst in 12 centuries, study finds." *New York Times*. February 14, 2022.
- 4 Hines, N. William. "History of the 1972 Clean Water Act: The story behind how the 1972 Act became the capstone of a decade of environmental reform." *Journal of Energy & Environmental Law*. Summer 2013 at 80, 81 and 98.
- 5 Ramseur, Jonathan L. and Mary Tiemann. Congressional Research Service. "Water Infrastructure Financing: History of EPA Appropriations." Updated April 10, 2019 at 1.
- 6 *Ibid.* at 1; American Society of Civil Engineers (ASCE). "2021 Infrastructure Report Card." 2021 at 153.
- 7 ASCE (2021) at 153.
- 8 EPA. "Clean Watersheds Needs Survey 2012: Report to Congress." (EPA 830-R-15005). January 2016 at 1; ASCE (2021) at 152.
- 9 ASCE (2021) at 151.
- 10 EPA (January 2016) at 1; EPA. "Drinking Water Infrastructure Needs Survey and Assessment: 6th Report to Congress." (EPA 816-K-17-002). March 2018 at 9.
- 11 EPA (January 2016) at 1, 2 and 6.
- 12 EPA. "FY 2021 CWSRF Allotments: \$1,638,826,000." Available at <https://www.epa.gov/cwsrf/clean-water-state-revolving-fund-cwsrf-allotments-federal-funds-states>. Accessed December 22, 2021.
- 13 Regan, Michael. EPA. Letter to Governors. December 2, 2021 at 6.
- 14 Congressional Budget Office. "Public Spending on Transportation and Water Infrastructure, 1956 to 2017." October 15, 2018 at Supplemental Tables. Table W-8.
- 15 Food & Water Watch (FWW) calculation based on *Ibid.*; U.S. Census, Population Estimates Program. "Historical National Population Estimates: July 1, 1900 to July 1, 1999." June 28, 2000; U.S. Census. "Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2019." (NST-EST2019-01). Last revised October 21, 2021.
- 16 National Association of Clean Water Agencies (NACWA). "NACWA Financial Survey: Executive Highlights." August 2021 at 7.
- 17 *Ibid.* at 18.
- 18 Bagenstose and Crowe (2021).
- 19 Fountain (2022).
- 20 U.S. Government Accountability Office (GAO). "Water Infrastructure. Technical Assistance and Climate Resilience Planning Could Help Utilities Prepare for Potential Climate Change Impacts." (GAO-20-24). January 2020 at 2, 17 and 61.
- 21 NACWA and Association of Metropolitan Water Agencies. "Confronting Climate Change: An Early Analysis of Water and Wastewater Adaptation Costs." October 2009 at ES-1 and ES-8.
- 22 National Academy of Public Administration. "Developing a New Framework for Community Affordability of Clean Water Services." October 2017 at 25.
- 23 *Ibid.* at 21.
- 24 *Ibid.* at 22.
- 25 National Consumer Law Center. "Review and recommendations for implementing water and wastewater affordability programs in the United States." March 2014 at 1 and 5.
- 26 Economic Policy Institute. "Income Inequality in the U.S. by State, Metropolitan Area, and County." June 16, 2016 at 1 to 4; Miroso, Oriol. "Water affordability in the United States: An initial exploration and an agenda for research." *Sociological Imagination*. Vol. 51, Iss. 2. December 2015 at 52.
- 27 Butts, Rachel and Stephen Gasteyer. "More cost per drop: Water rates, structural inequality, and race in the United States — The case of Michigan." *Environmental Reviews & Case Studies*, Vol. 13, No. 4. December 2011 at 386 and 392 to 393.
- 28 Foltz-Diaz, Kimberly et al. Massachusetts Global Action. "The Color of Water: A Report on the Human Right to Water in the City of Boston." July 2014 at 1 and 5; GAO. "Water Infrastructure: Information on Selected Midsize and Large Cities With Declining Populations." (GAO-16-785). September 2016 at 57 to 58 and 72 to 73.
- 29 Alabama Center for Rural Enterprise, Columbia Law School Human Rights Clinic and the Institute for the Study of Human Rights at Columbia University. "Flushed and Forgotten: Sanitation and Wastewater in Rural Communities in the United States." May 2019 at 12, 19 to 24 and 30; Flowers, Catherine Coleman. "A county where the sewer is your lawn." *New York Times*. May 22, 2018; Okeowo, Alexis. "The heavy toll of the Black Belt's wastewater crisis." *The New Yorker*. November 23, 2020; Smith, Catherine. "If white people were still here, this wouldn't happen: The majority-Black town flooded with sewage." *The Guardian*. February 11, 2021.
- 30 EPA (2004) at ES-5 to ES-7.
- 31 EPA. "NPDES Compliance Inspection Manual. Chapter 13." (305-K-17-001). January 2017 at 297.
- 32 EPA (2004) at ES-5 to ES-7; ASCE (2021) at 153; Bagenstose and Crowe (2021).
- 33 EPA. Office of Wastewater Management. "Report to Congress: Combined Sewer Overflows to the Great Lakes Basin." (EPA 833-R-16-006). April 2016 at 1 to 2.
- 34 *Ibid.* at ES-2.
- 35 Kenward, Alyson et al. Climate Central. "Sewage Overflows From Hurricane Sandy." April 2014 at 3.
- 36 *Ibid.* at 1.
- 37 "Hurricane Ida — 350K gallons in raw sewage spill in area; Rains from hurricane overflowed 10 separate wastewater systems." *The News Herald* (FL). September 8, 2021.
- 38 Specker, Lawrence. "Hurricane Ida's silver lining: Mobile sewer improvements are working." *Press-Register* (AL). September 8, 2021.
- 39 Wade, Christian M. "Lawmakers hear more pitches for relief money." *The Eagle-Tribune*. September 13, 2021.
- 40 Natter, Ari. "Ida leaves toxic chemicals, sewage swirling in its wake." *Bloomberg*. September 3, 2021.
- 41 EPA. Office of Water. "Managing Septic Systems to Prevent Contamination of Drinking Water." (EPA 816-F-01-021). July 2001 at 2; Mihaly, Elena. "Avoiding septic shock: How climate change can cause septic system failure and whether New England states are prepared." *Ocean and Coastal Law Journal*. Vol. 23, Iss. 1. January 2018 at 7.
- 42 EPA. "Decentralized Wastewater Program Annual Report 2013." (EPA-832-R-140006). August 2014 at 1.
- 43 Hoghooghi, Nahal et al. "Frontiers in assessing septic systems vulnerability in coastal Georgia, USA: Modeling approach and management implications." *PLOS One*. Vol. 16, Iss. 8. August 2021 at 2 to 3; Mihaly (2018) at 7.
- 44 United Nations. Human Rights Council. "Report of the Special Rapporteur on the human right to safe drinking water and sanitation on her mission to the United States of America (22 February – 4 March 2011)." August 2, 2011 at 7 to 8.

The WATER Act: Restoring Federal Support for Clean Water Systems

- 45 Mohamed, R. "Why households in the United States do not maintain their septic systems and why state-led regulations are necessary: Explanations from public goods theory." *International Journal of Sustainable Development Planning*. Vol. 4, No. 2. 2009 at 41.
- 46 Ohio Department of Health. "Household Sewage Treatment System Failures in Ohio." January 2013 at 1.
- 47 United Nations (2011) at 7.
- 48 Wedgworth, Jessica Cook and Joe Brown. "Limited access to safe drinking water and sanitation in Alabama's Black Belt: A cross-sectional case study." *Water Quality, Exposure and Health*, Vol. 5, Iss. 2. June 2013 at 70.
- 49 *Ibid.* at 69 to 70.
- 50 Elliott, Mark. University of Alabama. "Innovative Technologies and Approaches to Address Decentralized Wastewater Infrastructure Challenges in the Alabama Black Belt." Presented at EPA Decentralized Wastewater Webinar Series. May 26, 2021 at 22; Elliot, Mark and Kevin White. Alabama Water Resources Research Institute. "Onsite Wastewater Management in Hale and Wilcox Counties: Failing Septic Systems, Direct Discharge by 'Straight Pipes' and Microbial Source Tracking." Annual Technical Report. FY 2016 at 1 to 2; Flowers (2018).
- 51 Flowers (2018); Okeowo (2020).
- 52 Mihaly (2018) at 2 and 4 to 6.
- 53 EPA (2004) at ES-2, ES-3, ES-7 and ES-8.
- 54 *Ibid.* at ES-7 to ES-8; EPA. "Keeping Raw Sewage and Contaminated Stormwater Out of the Public's Water." 2011 at 4.
- 55 EPA. "National Coastal Condition Assessment." (EPA 841-R-21-0001). August 2021 at 25.
- 56 *Ibid.* at 37.
- 57 *Ibid.* at 29 and 43.
- 58 EPA. "How's My Waterway?" Available at <https://mywaterway.epa.gov/national>. Accessed November 9, 2021.
- 59 National Oceanic and Atmospheric Administration, National Ocean Service. "What is eutrophication?" Available at <https://oceanservice.noaa.gov/facts/eutrophication.html>. Last updated February 26, 2021.
- 60 EPA (2004) at ES-7 to ES-8.
- 61 Note: the recreational beaches that are monitored are program beaches under the BEACH Act. EPA, Office of Water. "EPA's Beach Report: 2020 Swimming Season." (EPA-820-R-21-004). August 2021 at 2.
- 62 FWW calculation based on *Ibid.* at 3.
- 63 Collier, Sarah A. et al. U.S. Centers for Disease Control and Prevention. "Estimate of burden and direct healthcare cost of infectious waterborne disease in the United States." *Emerging Infectious Diseases*. Vol. 27, No. 1. January 2021 at 140 and 145.
- 64 *Ibid.* at 140 and 145.
- 65 *Ibid.* at 140 and 145.
- 66 EPA (2004) at ES-9; EPA (2011) at 4.
- 67 EPA. Office of Enforcement and Compliance Assurance. "EPA enforcement: Preventing backup of municipal sewage into basements." *Enforcement Alert*. Vol. 8, No. 1. (EPA 325-N-06-001). September 2006 at 1; Mihaly (2018) at 7.
- 68 EPA (2011) at 4.
- 69 EPA (2001) at 2; Hoghooghi et al. (2021) at 2 to 3.
- 70 Elliot and White (FY 2016) at 1 to 2.
- 71 McKenna, Megan L. et al. "Human intestinal parasite burden and poor sanitation in rural Alabama." *The American Journal of Tropical Medicine and Hygiene*. Vol. 97, Iss. 5. September 2017 at 1 and 2.
- 72 S. 916. 117th Congress. §2 (2021); H.R. 1352. 117th Congress. (2021).

Food & Water Watch mobilizes regular people to build political power to move bold and uncompromised solutions to the most pressing food, water and climate problems of our time. We work to protect people's health, communities and democracy from the growing destructive power of the most powerful economic interests.



(202) 683-2500

foodandwaterwatch.org • info@fwwatch.org
Copyright © March 2022 Food & Water Watch