



# Coming Together for Clean Water

## EPA's Strategy to Protect America's Waters







## Introduction

Forty years ago EPA was created in answer to mounting public concern about the air, water, and waste contamination that was visibly impairing the public's health and well-being. The burning Cuyahoga River remains an icon of the unbridled contamination of the 1960s and a catalyst for change. The statutes, regulatory framework, and institutions that were created starting 40 years ago are still central to protection of today's water resources; as such, they reflect their origin in countless ways. This architecture was designed to address the contamination priorities prevalent at the time and it did so effectively.

Today the challenges faced by EPA—and its many state and local partners—to uphold the quality of the nation's fresh and marine aquatic resources and ecosystems are different in character. While the main causes of degradation in the 1970s were point sources that could be targeted more directly, sources of contamination are now prevalent throughout entire watersheds and are caused in part by patterns of development, population growth, and consumer behavior. States are now equal partners with EPA in the protection of water quality; in addition to their own water quality programs, 46 states now implement federally-enacted water quality permit protection programs directly, with EPA assistance, technical support, policy and guidance.

Despite many successes over recent years, the rate at which waters are being listed for impairment exceeds the rate at which they are being restored. The causes of degradation are in many cases far more complex, and not as visible to the naked eye as they were years ago; the solutions are often available technically, but because the pollution comes from multiple sources, and involves a greater array of pollutants and stressors, it requires

new and innovative partnerships and approaches. In some cases EPA and state authorities are limited in scope, and as a result it is challenging to directly address root causes—i.e., population growth, increased urbanization and nonpoint source pollution. Building strong and effective partnerships with the widest range of stakeholders, state, local, and tribal partners, and other federal agencies has never been so urgent if we are to protect our water and its multiple uses for generations to come.

On April 15, 2010, Administrator Lisa P. Jackson convened a diverse group of stakeholders to discuss opportunities to reinvigorate EPA's strategy for achieving clean water. This strategy outlines the challenges that were highlighted at the *Coming Together for Clean Water* forum, describes the public participation process, and highlights the EPA's priorities for achieving clean water goals.

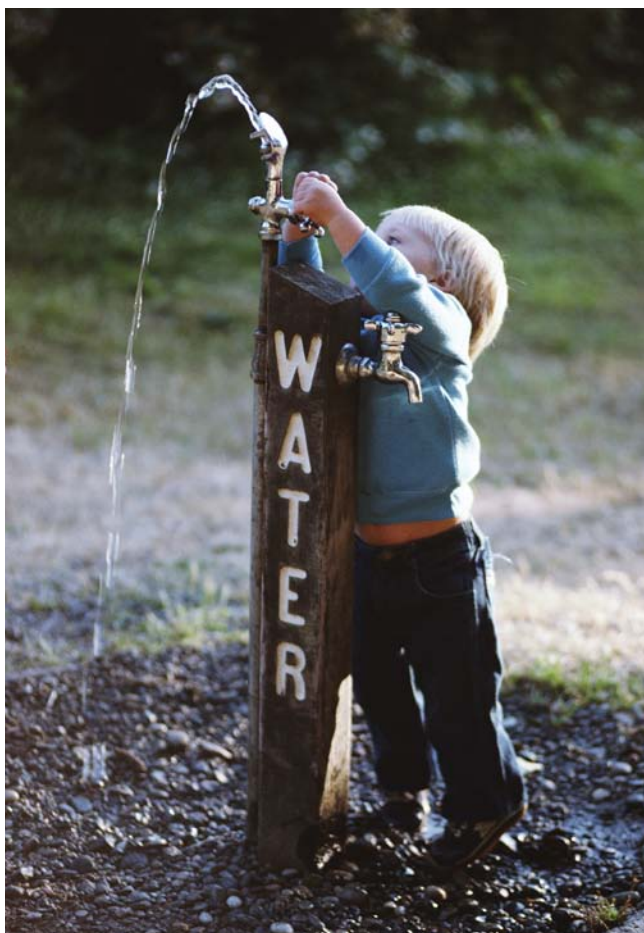




## The Challenges and Opportunities for Protecting America's Waters

### Human and Aquatic Ecosystem Health

**A**lthough tremendous strides have been made in the supply of safe water in the last 40 years, new challenges are also arising. Nutrients, sediments, and novel synthetic pollutants, such as endocrine disruptors and nano pollutants, are posing new challenges for the scientific and management community alike.<sup>1</sup> Human health measures for contaminants are exceeded in one fifth of stream samples, and one third of groundwater wells collected by USGS watershed studies. Human health benchmarks for pesticides and nitrogen are exceeded in 7 percent of urban stream samples.<sup>2</sup> Mercury and PCBs were detected in all fish tissue samples and nearly 50 percent of the nation's lakes have mercury fish tissue concentrations above EPA recommended limits. PCBs exceeded EPA recommended limits in 71 percent of lakes.<sup>3</sup>



The amount of nitrogen and phosphorus pollution entering our waters has escalated dramatically. Nutrient pollution is now one of the costliest and most challenging environmental problems we face. The degradation of groundwater and surface water, including drinking water supplies, due to excess levels of nitrogen and phosphorus in our nation's water has been studied and documented extensively.<sup>4</sup> Streams and lakes with high levels of nitrogen or phosphorus are more than twice as likely to have degraded biology.<sup>5</sup> Following current U.S. population growth estimates, nutrient pollution—from urban stormwater runoff from existing and new development, municipal wastewater discharges, air deposition, agricultural livestock activities and row-crop run-off—is expected to grow as well. A few examples of this trend include the following: more than half of U.S. streams and more than 40 percent of the nation's lakes have medium to high levels of nitrogen and phosphorus;<sup>6</sup> 78 percent of assessed coastal waters exhibit eutrophication;<sup>7</sup> nitrate drinking water violations have doubled in eight years;<sup>8</sup> algal blooms are steadily on the rise and related toxins like microcystin, which was detected in 30 percent of U.S. lakes, have potentially serious health and ecological effects. Higher nutrient levels can also spur the need for greater use of drinking water disinfection agents for turbid source waters which are linked to increased health risks.<sup>9</sup>

Aquatic habitats and species are impacted by multiple stressors, including contaminants, habitat degradation and reduced flows. In recent studies, benchmarks for the protection of aquatic life from contaminants were exceeded in half of the streams tested—83 percent of samples from urban streams, and 94 percent of sampled sediments.<sup>10</sup> Across the country, streams with excess sedimentation and lakes with poor habitat are 2 to 3 times more likely to have degraded biology.<sup>11</sup> Thirty-seven percent of native freshwater aquatic species, including fish and sensitive invertebrates, are now at risk of extinction, a much higher percentage than in other nonaquatic ecosystems.<sup>12</sup> Sixty-two percent of freshwater plant communities in wetland and riparian areas are at risk.<sup>13</sup>

### *Infrastructure Needs and the Cost of Pollution*

The nation's drinking water and wastewater infrastructure has a long and successful history controlling pollution and providing safe and clean drinking water. However, there is growing concern in the water sector over the enormous and continuously expanding infrastructure and capital investment need now estimated to be over \$600 billion over 20 years.<sup>14</sup> This growing need is attributed to capital investment needed to service new growth, deferred maintenance, aging infrastructure, poor systems management, increasing competition for water, and increased implementation of new technologies that protect human health and the environment. As financial resources continue to be stretched, protecting source waters from contamination will remain more cost effective than remediating the contamination. And while the Clean Water Act (CWA) was designed to eliminate the discharge of pollutants into "navigable" waters, more than half of the nation's water bodies are now degraded.

### *Climate Change and the Carbon Footprint of Water*

As today's challenges loom larger, water resource managers are also faced with the added complexity posed by climate change. Observed and projected impacts from climate change include shifts in the hydrological cycle such as increased severity of storms, more extreme rainfall events, longer droughts, more rain or snow events, and earlier spring melt, as well as warming waters, sea level rise and ocean acidification. This 'nonstationary' hydrological cycle, that is, patterns that are outside of the historical experiences on which current supply and water quality models were built, challenges water managers to adopt risk management practices and plans for an uncertain future. In the last five years, nearly every region of the country has experienced water shortages, with the Southwest now experiencing severe drought. At least 36 states are anticipating local, regional, or statewide water shortages by 2013, even under non-drought conditions.<sup>15</sup> The energy cost of treating and delivering safe water also needs to be accounted for, and strategies adopted to reduce the nation's total water-related energy demand. More research and demonstration projects are needed to fully account for the benefits that can be derived in the management of water resources from efforts to conserve energy, utilize renewable

energy, and better integrate green infrastructure, water conservation, reuse, harvesting, resource recovery, and onsite treatment to achieve energy reduction goals.

### *Sustainable Use, Efficiency and Reuse*

Despite successes in reducing per capita water use in the U.S., increased demand driven by demographic trends and constraints in the development of new water sources has spurred the development of water-efficiency programs such as EPA's WaterSense program and reuse programs over the last two to three decades.



The costs associated with treating and transporting water are rising as some communities look to increasingly remote or degraded sources to ensure supply. Some municipalities, industries, and agricultural communities have begun reusing water for non-potable uses, mainly for landscape and crop irrigation and aquifer replenishment; some municipalities are also augmenting water supply with treated municipal water.<sup>16</sup> The potential for onsite water recycling and desalination is also gaining support in communities with serious water shortages, leading many experts to re-think the way in which we have traditionally managed water supply, stormwater, and wastewater. Innovative methods to mimic the natural hydrological cycle and reuse water are also being adopted in some communities.

### *Public Outreach and Participation*

A well informed and engaged public will be essential to addressing our clean water challenges and ensures that we are implementing smarter decisions at the local and community level. As was true with the main pollution challenges of 40 years ago, the public's understanding and active participation is crucial to solving the causes of degradation throughout entire watersheds, from the upper reaches to the urban metropolitan centers and coastal waters. EPA and the states must work to better explain the challenges that we face. Similarly, the private sector, the academic community, civil society and state and local government alike, all share in the responsibility to further the goal of protecting America's waters at a local, state, tribal, and national scale.



## Coming Together for Clean Water

**A**t the *Coming Together for Clean Water* forum, Administrator Jackson challenged the audience to work with EPA to achieve a leap forward in water quality akin to the one precipitated with the passage of the CWA in 1972. This forum was instrumental as a venue to hear first-hand from the participants on their vision for the future of America's waters, and an invaluable opportunity to collectively rethink EPA's path forward in the 21<sup>st</sup> century.

The forum focused on two themes—healthy watersheds and sustainable communities—both critical priorities for EPA. Some of the overarching themes where stakeholders voiced common views at the forum include:

- The challenges of today are different than they were a decade or more ago;
- There is a need for baseline information on the status of water quality nationally;
- Impaired water listings are increasing at an alarming rate;
- Nitrogen and phosphorus pollution are potentially the costliest and most challenging water quality issues of the 21<sup>st</sup> century;

- Climate change, population increase, urbanization, and degradation of water and wastewater infrastructure will compound the challenge;
- Drinking water is threatened nationally by a number of cumulative impacts;
- Disadvantaged communities are often disproportionately impacted by water quality impairments; and,
- The public is largely unaware of the severity of current and future challenges.

EPA considered the input received from stakeholders at the forum in developing a draft of this document for public comment. The draft was released in August of 2010 and EPA received more than 100 comments, all of which were carefully considered in the development of the final strategy. This strategy complements the new approaches identified in the Office of Environmental Enforcement and Compliance Assurance's (OECA) 2009 Clean Water Act Action Plan<sup>17</sup> outlining new enforcement and data management approaches, and the 2010 Drinking Water Strategy.<sup>18</sup> Integrating policy and planning across the agency is a key element of EPA's approach as it strives to make better use of existing resources by integrating and aligning institutional priorities both internally and with its state partners.





## Implementing Clean Water Goals: Key Actions for the Protection of Water Resources

In September 2010, EPA issued its 2011-2015 Strategic Plan.<sup>19</sup> Goal two of the plan is to *protect and restore our waters to ensure that drinking water is safe, and that aquatic ecosystems sustain fish, plants and wildlife, and economic, recreational and subsistence activities*. Within goal two, the Strategic Plan's objectives outline EPA's path forward as well as the applied research needs in support of the two primary objectives. These objectives are:

1. Protect human health; and,
2. Protect and restore watershed and aquatic ecosystems.

These objectives closely mirror the themes discussed at the *Coming Together for Clean Water* forum. The *Coming Together for Clean Water* strategy is intended to provide a framework on how EPA's national water program will address the nation's clean water challenges to achieve our strategic objectives. The successful implementation of this strategy depends on many factors including the ability of local governments, states, and tribes to partner effectively with EPA and other federal agencies in the protection of water resources nationwide. EPA will work to fully engage states in implementing programs and consult with tribes early and throughout the process of developing and implementing this strategy.

EPA has identified key areas to guide its implementation efforts and actions to meet the Strategic Plan objectives in the next two years and beyond:

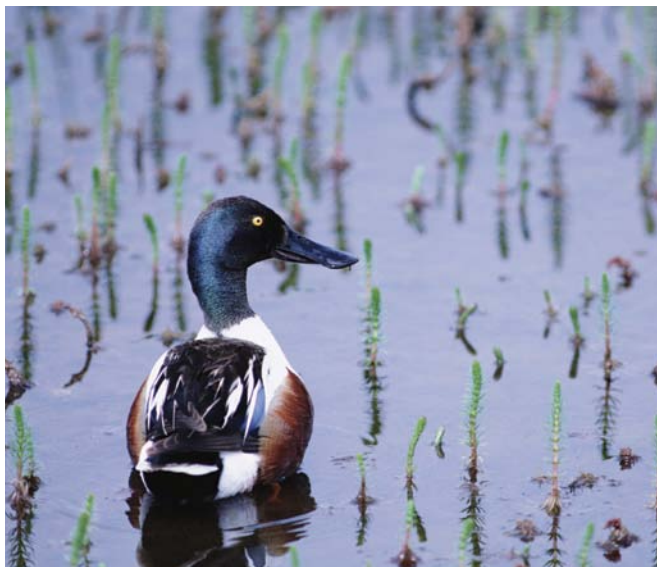
1. **Develop a Baseline for Progress**—Systematically assess the nation's waters to provide a baseline for tracking progress;
2. **Increase Protection of Healthy Waters**—Increase focus on the protection of source waters and healthy watersheds to ensure they remain protected from degradation and depletion;
3. **Restore Degraded Waters**—Enhance the ability of EPA, states and tribes to restore degraded waters, restore ecosystems, and take action to increase the number of restored water bodies, including nutrient impaired waters;

4. **Reduce Pollution from Discrete Sources**—Reduce significant point-source pollution discharges that continue to contaminate waterways; and,
5. **Enhance Watershed Resiliency and Revitalize Communities**—Implement sustainable approaches and technologies that will reduce the impacts and risks associated with climate change, population growth, increased urbanization, infrastructure gaps, and other factors.

EPA will implement actions to gain a better understanding of the state of our nation's waters, work to protect healthy waters, restore waters that are already impaired, expand actions to keep all waters clean, and continue to build projects and programs that support environmental sustainability, economic growth, and meet a wide range of community needs. In doing so, EPA will expand and develop new partnerships, and implement policies that foster approaches that are tailored to local needs and are community-based. EPA will strategically leverage funding opportunities with other federal, state and tribal partners and local governments to implement these priorities.

While carrying out the actions outlined in this plan EPA remains committed to the following principles:

- Rely on the rule of law and seek creative and more effective ways to implement the CWA and other authorities, as well as voluntary approaches and market-based incentives;
- Rely on robust science and cutting-edge technologies, particularly in emerging areas such as climate adaptation, agricultural manure treatment, ecosystem services, integrated watershed approaches, and emerging pollutants;
- Partner with states, tribes and local entities to agree upon priorities, integrate data, actions and resources, streamline workloads, and ensure joint strategies for success;
- Increase focus on improving environmental quality and public health protection in disadvantaged communities that have historically suffered severe degradation of water quality and aquatic habitats;



- Ensure transparency and engage a broad range of stakeholders in decision-making while providing the public with reliable information on the impacts of pollution; and,
- Achieve and document measurable results.

### *Develop a Baseline for Progress*

Effective management of water resources requires reliable, comprehensive information and an informed public. The National Aquatic Resource Surveys (NARS) have been instrumental in providing information on the ecological conditions of inland and coastal waters using direct measures of aquatic life and ranking chemical and physical stressors. These surveys provide a baseline for the state of water quality across the nation against which statistically significant changes can be tracked at the national and regional scales. An EPA/state “Monitoring and Assessment Partnership” is working to identify opportunities to further enhance the NARS program to support state and tribal water management needs, and identify and track healthy, threatened, and impaired waters. EPA will complete the first set of five Aquatic Resource Surveys, providing a complete picture of the condition of all waterbody types across the nation by 2012, and begin implementing the second set of surveys to begin tracking changes in water quality.

Key EPA actions:

- A. Complete the five-year NARS cycle to provide baseline information on the status of our waters and begin tracking trends in overall condition and major stressors;

- B. Complement existing impaired waters listings with the identification of healthy watersheds across the U.S. (see discussion of healthy watershed assessments below);
- C. Work with states and tribes to provide more comprehensive information on water quality parameters nationally using the data that support the Integrated Water Quality Monitoring and Assessment Reports<sup>20</sup>; and,
- D. Explore ways to integrate federal, state and tribal data and information with data collection efforts at the regional and local scale, both public and private.

### *Increase Protection of Healthy Waters*

EPA’s water quality protection program has long focused on the remediation of impaired waterbodies and the reduction of specific pollutant levels. While EPA and its state and tribal partners continue to make considerable progress in this area, the need to protect and maintain healthy waterbodies is becoming more critical. Healthy watersheds provide communities with drinking water sources, recreational opportunities, habitat for wildlife, and a number of environmental services such as resilience against climate impacts. Protecting healthy watersheds and the aquifers that contribute to stream flows and lake levels will result in considerable savings over time if the need for costly restoration can be avoided in watersheds that would otherwise become impaired.

EPA will implement a range of actions to ensure that healthy waters are protected and prevent further pollution of lakes, rivers and streams. EPA will explore, develop, and make available more effective methods and tools for ecological assessments, and the classification and identification of healthy watersheds. By developing a science-based national approach, EPA will provide a system to inventory and implement actions to protect healthy waters for states and tribes. In partnership with state and local governments and stakeholders, EPA will also develop outreach and education materials targeting public awareness, an essential element for progress and success in the protection of waters and the environment.

Finally, EPA will utilize CWA tools to better protect high quality waters, including revisions to regulations for water quality standards to strengthen antidegradation provisions, and focus on protecting headwaters that are threatened by resource extraction activities.



### Key EPA actions:

- A. Through the Healthy Watersheds Initiative, work with states and tribes to develop a common set of comprehensive indicators that can be used to develop lists of healthy watersheds linked to watershed protection measures (e.g., excellent stream biology attributed to buffer ordinances); and, provide guidance and assistance to states and tribes on top-quality peer-reviewed methods to conduct assessments to identify healthy watersheds. These assessments can be the basis for states, tribes and local governments to set priorities and implement protection and conservation programs;
- B. Work with partners to protect healthy watersheds through implementation of other federal, state, and local regulatory and non-regulatory tools;
- C. Clarify CWA protections for headwaters and wetlands based on ecosystem functions;
- D. Use the full suite of CWA tools to protect high-quality streams and lakes from destruction and degradation caused by industrial activities including mining;
- E. Propose changes to the federal water quality standard regulations that would clarify and strengthen antidegradation regulations to protect high-quality waters; and,
- F. Ensure that EPA and states are implementing antidegradation polices and requirements effectively.

### Restore Waters

The restoration of impaired waterbodies will also be critical to making significant progress. Our nation's large aquatic ecosystems continue to face pressures due to growing populations and increasing development. EPA and its partners can work collectively in a collaborative fashion to restore these and all of our critical waterbodies efficiently in the face of resource pressures. In addition to the work underway in the Chesapeake Bay as part of the President's recent Executive Order 13508, EPA will work towards the protection and restoration of the Great Lakes and the Gulf of Mexico. In the wake of the Deepwater BP oil spill, EPA will lead efforts to restore and improve the ecological health of the Gulf of Mexico, working with state, tribal, non-governmental, and academic partners to ensure that the Gulf's waters are restored and protected. EPA also is leading a multi-agency effort to restore and protect the Great Lakes through the Great Lakes Restoration

Initiative. In other parts of the nation, focus will remain on nutrient pollution, which threatens the long-term health of important ecosystems such as the Mississippi River Basin.

One of the major sources of water impairment is nitrogen and phosphorus pollution. EPA fully recognizes that effectively addressing this challenge will require working collaboratively and in close partnership with federal, state local, tribal partners and other stakeholders. EPA will use the best available peer-reviewed science, and work with state and federal partners and stakeholders to use available regulatory and voluntary tools, collective know-how and expertise to achieve the desired goals. Reducing the amount of nutrient pollution reaching our waters is a top priority for EPA and a responsibility that is clearly shared by the federal government and states. EPA recognizes that states need room to innovate and respond to local water quality needs, so a one-size fits all approach to nitrogen and phosphorus pollution is neither desirable nor necessary. EPA will work with interested and willing states toward a framework of key elements that state programs should incorporate to maximize progress. Maintaining an open dialogue between all partners —states, tribes, EPA, USDA, and local stakeholders—will be essential over time as EPA and its partners work to effectively implement the wide array of programs and approaches that will be necessary to reach the needed reductions.

The steps outlined below represent a first approach to putting local communities on the path to long-term sustainability and reversing the nutrient contamination trends outlined above.

### Key EPA actions:

- A. Determine needed nutrient load reduction targets to restore and maintain water quality in key areas using the best available peer-reviewed science and support the development of numeric nutrient water quality standards;
- B. Work with states to carry out more strategic and effective implementation of watershed nutrient reduction plans to protect their local waterways as well as those downstream;
- C. Maintain and advance an open dialogue between USDA, states, and local stakeholders/landowners regarding how all parties can best cooperate to reduce nitrogen and phosphorus pollution from agricultural nonpoint sources;
- D. Leverage federal funding to assist communities in implementing targeted nutrient reduction strategies;

## Coming Together for Clean Water

- E. Use trading and other market-based tools where appropriate, to improve cost effective clean up of impaired watersheds; and,
  - F. Improve public understanding of the seriousness of nutrient pollution including impacts on drinking water sources and other public health, environmental, and economic benefits.
- D. Promote the use of green infrastructure in combined sewer overflow (CSO) and municipal separate sanitary sewer system (MS4s) control plans as a complement or as an alternative to traditional grey infrastructure solutions;
  - E. Establish performance standards for stormwater discharges for new and redevelopment that will facilitate the use of green infrastructure to reduce pollutant discharges and realize other community and environmental benefits; and,
  - F. Work with state and tribal partners to reduce environmental impacts on our waters from industrial sources such as power plant discharges and increasing resource extraction and development activities.

### *Reduce Pollution from Discrete Sources*

EPA seeks to increase protection of our waters from pollution by reducing current loadings and preparing for substantial predicted increases associated with development, urbanization, climate change and other factors. EPA will strengthen regulatory and enforcement actions to address water quality challenges and strategically undertake necessary modifications to current regulations to make them clear and enforceable. EPA will also work to address increasing concerns about the potential for public health and environmental impacts in the vicinity of hydraulic fracturing and other resource extraction operations by relying on the best available science and statutory authority to ensure balanced approaches that ensure our ability to meet our future energy needs in a sustainable and cost effective way. In so doing, through the actions outlined below, EPA will apply the most cost effective standards available that increase protections.

Key EPA actions:

- A. Support completion of the Office of Research and Development's study currently underway on the relationship between hydraulic fracturing and water resources that will provide a stronger scientific basis for decisions on how best to protect water quality from energy development activities that use this technology;
- B. Work with federal partners and stakeholders to clarify CWA requirements for hydraulic fracturing produced and other wastewaters;
- C. Strengthen the NPDES program to reduce pollution from point sources (including: developing NPDES permit requirements to control pesticide discharges to waters of the U.S. and releases of contaminants from vessels, information gathering for CAFOS, reducing pollution from sewage treatment plants, developing effluent guidelines for key sectors such as steam electric, etc.);

### *Enhance Watershed Resiliency and Revitalize Communities*

Building on synergies within the water sector, integrated approaches can allow communities to sustainably manage water infrastructure needs and better plan for supply costs and regional



Courtesy of the Greenway Foundation

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investment priorities, adapt to climate change, and reduce overall energy consumption by using renewable and alternative energy sources.

In order to maximize clean water protections under current authorities, EPA will work to identify and implement multi-benefit solutions that will help communities plan and be more responsive to changing factors such as development, population growth, increased urbanization and climate change. A collaborative approach to community-based programs—within as well as beyond EPA—will achieve multiple objectives, break down traditionally stovepiped divisions, and broadly engage local communities in decisions that impact local, state and tribal waters.

EPA will develop and implement a renewed strategy on green infrastructure and innovative technologies to promote sustainable and cost effective practices. EPA will also support integrated water management at the state and local level, and will encourage and catalyze solutions that reduce infrastructure costs and promote more efficient, regionally coordinated resource use. These more integrated solutions will lead to community buy in, better water quality, green jobs, and more robust ecosystem services over the long term.

Urban Waters is an interagency effort led by EPA to work with local communities and cities to transform forgotten urban waterways into treasured centerpieces of urban revitalization.<sup>21</sup> This effort targets underserved areas and brings together state, tribal, federal, and local partners in an effort to foster understanding, public access, and enhanced stewardship of our urban water commons. A number of pilot projects are now under way.

Key EPA actions:

- A. Develop and implement a systematic strategy to make green infrastructure an available tool for meeting CWA requirements by: including cost effective green infrastructure approaches in municipal separate storm sewer system (MS4) permits and combined sewer overflow (CSO) long-term control plans, considering the incorporation of non-traditional or green infrastructure alternatives in enforcement orders/consent decrees, and other policies to increase adoption of green infrastructure practices;
- B. Implement policies and help direct attention toward more sustainable water management practices that better

integrate water quantity, quality, energy requirements, carbon emissions, development, and land use at the watershed and aquifer levels;

- C. Encourage states to use the Clean Water State Revolving Funds (CWSRF) for projects that are consistent with EPA's new Clean Water and Drinking Water Sustainability Policy.<sup>22</sup> EPA will continue to work with states to ensure that all CWSRF programs meet the mandated requirement to use at least 20 percent of FY 2011 appropriated funds for green projects such as green infrastructure, water efficiency projects, energy efficiency projects, and other innovative approaches; EPA will encourage states to continue investing in green projects in subsequent fiscal years;
- D. Develop policies that will facilitate greater collaboration and accelerate the commercialization of cutting-edge technologies that help deliver clean water, such as energy self-sufficient wastewater treatment systems and methods;
- E. Develop comprehensive approaches, including all of the above actions, to help transform previously degraded urban waters into community assets by linking environmental programs with existing priorities such as economic development, adding environmental components to economic programs in pilot areas, and facilitating water clean-up efforts; and,
- F. Work to ensure the overall sustainability and climate resiliency of drinking water and wastewater utilities by better incorporating climate change adaptation and mitigation strategies and other cost-efficient infrastructure practices into planning and operations.





## Conclusion and Next Steps

Last year marked the 40 year anniversary of EPA. With its partners, EPA continues to strive to meet the objective established in the CWA of 1972: “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” This objective requires the constant re-examination of EPA’s priorities and focus in light of the emerging issues described above, the promising opportunities afforded by cutting-edge scientific discoveries, the development of innovative technologies and methods, and the potential for building strong and effective partnerships at multiple scales to address these challenges in practical and effective ways.

Many of the challenges inherent in the protection of water resources are linked to other parts of the environment and the activities and services it supports. The solutions required for today’s problems call for a systems approach that will integrate energy and water use, environmental protection, human health, environmental justice, the highest standards for quality of life, and a thriving and vibrant economy. EPA recognizes that it is important to capitalize on opportunities to achieve goals across our drinking water and clean water strategies in a strategic, integrated way. While we continue to advance the four key elements of the Drinking Water Strategy, EPA will also look at opportunities to integrate drinking water concerns and strategies into our clean water programs in a strategic and defined way. As part of its 40<sup>th</sup> anniversary, EPA recently engaged the National Academy of Sciences (NAS) to undertake a sustainability study that will be known as the Green Book. This report is a first step in this new direction. It will establish a scientific framework to understand the linkages between energy, water, air, materials, and land and will explore how to incorporate sustainability concepts into all EPA programs.

EPA has also renewed its commitment to transparency and public participation. Public involvement and commitment at the community levels are essential to good governance and to building the strong partnerships that will be necessary to attain the changes identified in the *Coming Together for Clean Water* forum. In many communities and watersheds throughout the nation, it is a well-informed and involved citizenry that is driving the restoration of urban waters, lakes, coasts, and the protection

of pristine ecosystems through innovative partnerships with multiple stakeholders and based on collaborative actions.

As EPA implements the actions described in this document over the next several years, it will strive to maintain an open dialogue with states, tribes, and a wide range of stakeholders in an effort to be responsive to the challenges identified above, and to the objective of protecting America’s waters. Many of the actions described in this strategy are now being implemented successfully, while others are still in the initial stages of planning and implementation. In all cases EPA is committed to reach out to its many partners and stakeholders in an effort to provide leadership, improve communication, and strengthen participation in pursuit of the objective of providing clean water for this generation and those to come.





## End Notes

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- 2 *The State of the Nation's Ecosystems 2008: Measuring the Lands, Waters and Living Resources of the United States*, The H. John Heinz III Center for Science, Economics and the Environment, 2008. (Data source: U.S. Geological Survey, National Water Quality Assessment Program.)
- 3 *National Study of Chemical Residues in Lake Fish Tissue*, EPA 2009
- 4 *An Urgent Call to Action: Report of the State-EPA Nutrients Innovations Task Group*, August 2009. See also *Nutrients in the Nation's Streams and Groundwater: National Findings and Implications*, US Geological Survey, 2010.
- 5 National Aquatic Resource Surveys, 2006, 2010
- 6 National Aquatic Resource Surveys, 2006, 2010
- 7 Task Group, 2009.
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- 14 *Clean Watersheds Needs Survey 2008 Report to Congress*, EPA, May 2010; and *Drinking Water Infrastructure Needs Survey*, EPA, February 2009.
- 15 *Freshwater Supply: State's View of How the Federal Agencies Could Help Them Meet the Challenges of Expected Shortages*, U.S. General Accounting Office, July, 2003.
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