

Water Resources & the Regional Economy

Opportunities & Challenges

Part II

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Keynote Address: The Honorable Maurice Hinchey, US Representative, 22nd Congressional District

Gerald Benjamin

Director, Center for Research, Regional Education & Outreach at SUNY New Paltz

A Discussion Brief recently published by the SUNY New Paltz Center for Research, Regional Education and Outreach, entitled “Hudson Valley Water: Opportunities and Challenges (Fall 2010) demonstrates that there is an urgent need in the Hudson Valley for regional water resource planning and protection in the Hudson Valley to assure the region’s future. The authors, Scott Cuppett and Russell Urban-Mead, encourage watershed planning initiatives that integrate best preservation practices with water resource uses, while encouraging economic growth.

Cuppett and Urban-Mead recommend approaches and strategies that capitalize on our ecosystem’s ability to provide clean and abundant water that include:

- Taking a holistic watershed approach to water management;
- Protection of forests, floodplains, and wetlands;
- Promotion of groundwater recharge to assure that groundwater is replenished;
- Replacement of failing waste water treatment facilities;
- Balancing competing human and wildlife water needs;
- Developing responses for occasional droughts;
- Minimizing cumulative impacts from land use change on water quality and quantity;
- Identifying “water-ready” sites for potential development.

Introduction of Congressman Maurice Hinchey:

Maurice D. Hinchey, an alumnus of SUNY New Paltz and a great friend of our college and of the Hudson River, has long represented our region and is a leading Democratic voice in Congress. His 22nd district includes spans eight counties, reaching from the Hudson Valley to the Finger Lakes region.

Maurice is a senior member of the House Appropriations Committee, which allocates funds in the federal budget. Hinchey is also a member of the House Natural Resources Committee.

Additionally, the congressman is one of only 20 members on the bicameral Joint Economic Committee.

Upon graduating from high school, Maurice enlisted in the U.S. Navy, serving in the Pacific on the destroyer U.S.S. Marshall. After receiving an honorable discharge, he worked for two years as a laborer in a Hudson Valley cement plant. He then enrolled in the State University of New York at New Paltz and put himself through college working as a night-shift toll collector on the New York State Thruway to do so.

Congressman Hinchey went on to earn a master's degree at SUNY New Paltz, and followed with advanced graduate work in public administration and economics at the State University of New York at Albany. Maurice has three children. He and his wife, Allison, live in Hurley, New York.

Recognizing that the renewable energy sector will increasingly play a leading role in our economy, Maurice has worked tirelessly to position upstate New York in general, and the Hudson Valley in particular, as a world leader in the high-tech, clean energy manufacturing job revolution.

Early in his first year in Congress, Hinchey also initiated and led the successful effort to preserve Sterling Forest, the last significant area of open space in the New York metropolitan region and an important watershed for southeastern New York and northern New Jersey.

He also introduced and saw enacted legislation to create the Hudson River Valley National Heritage Area, the first federal action formally recognizing the fundamentally significant role the people of the Hudson Valley played in the early development of America and its institutions.

Hinchey began his 18-year tenure in the New York State Assembly in 1975. He was the first Democrat elected to the state legislature from Ulster County since 1912, and only the second since the Civil War.

He became Chairman of the Environmental Conservation Committee in 1979 and successfully led the fight --first in Albany and later in Washington-- to force the cleanup of PCBs from the Hudson River. During his tenure in Albany, he was responsible for the development of the statewide system of Urban Cultural Parks (now called Heritage Areas), including those in Kingston and Binghamton. Hinchey is the author of the act that created the Hudson River Valley Greenway and the Hudson River Estuary Management Program.

Scott Cuppett

Watershed Coordinator, NYSDEC Hudson River Estuary Program/Cornell University

I'm going to attempt to explain our paper recommendations in the simplest way through a few examples that we can all relate to.

As a child, I remember being told not to "waste" water by letting the faucet run while I was brushing my teeth, implying that somehow letting water run down the drain unused was the same as destroying a toy by leaving it out in the rain.

Have you ever thought about what this statement, "Don't waste the water," really means? How do you waste water, when water cannot be created or destroyed like a toy? In fact, you have likely sipped some of the same water molecules that the dinosaurs did millions of years ago, and the ice cubes you tossed into your lemonade last week may include some of the same water molecules our ancestors used when flushing their toilet. BUT, water can be made unusable or inaccessible when we transform or redistribute it.

Asking people to not waste water is more subtle than you might initially think. I mean, why not let the water run? When you let the faucet run while brushing your teeth, you aren't causing that water to disappear from our planet forever. Instead, you are moving water from one place to

another and allowing that clean water to mix with dirtier water, which now will need to be treated and cleaned unnecessarily. By letting the faucet run you are adding to the wastewater treatment requirement in a small way, and requiring more clean water to be siphoned from its source.

This small example illustrates a key message. Leaving the faucet running contributes incrementally to the movement of water across the landscape, from one watershed to another, with a loser and a gainer...a donor and a recipient, if you will. One location is losing high quality water while another location is receiving lower quality water. Allow yourself to envision this on a large scale, whether it's making computer chips, processing baby food, creating electricity, or supplying thousands of families with clean water, you begin to understand some of the possible impacts to aquatic resources and our ability to store, distribute, and use water.

Further, consider the consequence of placing an impervious barrier or surface on the land such as a parking lot, roof top, or road. Impervious surfaces waste water in a similar fashion to my teeth brushing example. When precipitation falls on these surfaces it is not able to absorb into the ground but instead is shunted off into nearby streams and rivers. It's prevented from contributing to the local groundwater storage and "lost" from use in the local water supply. This stormwater is a lost opportunity to store groundwater for a future use, whether it be providing water to a stream during dry periods or for brushing someone's teeth.

These are simple local examples of the some of the systemic water supply and availability challenges we face. We must find ways to effectively store our water for future needs, whether that is for people or wildlife, especially in light of climate change. We must also begin to understand and evaluate the movement of water from one place to another, and the implications that can have on water availability and quality. This movement of water can have winners and losers, consequences to aquatic life, and future water availability and regional economic growth plans.

Our abundant water resources here in the Hudson Valley may be a legitimate reason we grow in the future, but growth and development can, and often do, incrementally degrade our water, one parking lot or faucet at a time. Somewhere between low density development and a built out community is a threshold that, when reached, begins to show measurable declines in water quality and overwhelms our ability to use engineering to solve water quality problems. It's like death by a thousand cuts.

What are the actions we can take now?

1. We need to maintain as much green infrastructure as feasible, both avoiding certain areas as off-limits to development because of their positive role in protecting water, and incorporating it into development as a way to mitigate water impacts. Think of green infrastructure as the forests, wetlands, vegetation, and soil's natural ability to cleanse our water and conserve our "blue infrastructure." Employing green infrastructure is more effective, sustainable, and cost effective than relying on engineering approaches alone to treat drinking water, wastewater, and stormwater. It's plain smart!
2. For those who know me, you know that that I think at watershed scales and use the word watershed a lot, perhaps too often. The watershed approach enters this discussion as the overarching framework for how we need to approach water protection and use. We must work within the hydrologic cycle and live within our water availability limits. We should be taking and returning water in parallel, and try hard to return the water in the highest quality to the same source from where it was taken. Upstream source watershed protection must be our first line of defense, not an afterthought, focusing all or our resources on treatment at the point of delivery just before the faucet. We must begin to understand where we have excess water, what the aquatic limitations might be on using too much, and set in place policies and procedures at regional and watershed-scales to protect our abundant water now, not years

from now when demand on our water is knocking at our door. We need to run our decisions through a watershed filter.

I'd like to provide you two quick examples that illustrate the synergies of economics, green infrastructure, and a watershed approach:

A recent study by the American Water Works Association revealed that for every 10% increase in a watershed's forest cover (or green infrastructure), water treatment and chemical costs decrease by about 20%. Basically, more trees means less water treatment cost.

EPA estimates that a 1% loss in wetlands within a watershed can increase flooding by almost 7%. A 1-acre wetland may retain 1 million gallons of water. Recent research suggests that every acre of wetlands provides \$689,700 in annual storm-protection benefits. Based on wetland loss numbers I've seen for the Hudson Valley, we've lost about 2,900 acres of wetlands between the mid 80s and mid 90s. That equates to \$2 billion lost in FREE stormwater protection benefits and 3 billion gallons of water retention capability that could reduce flooding. As a reference, 3 billion gallons of water would cover about 7,000 football fields with 1 foot of water.

I'm practical enough to understand that changing the way we grow on the landscape to be more sensitive to water resource use can be contentious because it is likely to affect such things as landowner return on investment or be influenced by community values. I'm also realistic enough to know that we must figure this out for our own well-being and for future Hudson Valley residents.

I hope you've realized through my simple example of "turning off the faucet" that all we really need to know about water we were taught in kindergarten.

Russell Urban Mead

Senior Hydrogeologist, Chazen Companies

Good Morning, my name Russell Urban-Mead, a hydrogeologist working at The Chazen Companies, where I have spent more than a decade helping communities, counties, and towns develop water supplies and water resource planning strategies and manage remediation sites. It is a pleasure to be here today.

We read world status articles about declining aquifer reserves, rivers that no longer reach the oceans, and droughts around the world. Sober reports indicate that billions of human beings already, or soon, will live in water distressed conditions, and a recent reputable report suggests that global water demand will outstrip available water resources by 40% as soon as the year 2030.

But this isn't our condition here in eastern New York. As Scott Cuppett and I have indicated in the CRREO publication (so well introduced by Gerry Benjamin), we are not a water distressed part of the world: Specifically:

- We have between 38 and 44 inches of rain a year, dipping to perhaps 32 inches per year during drought years – compare this to under 20 inches for many midwestern American states and less yet in arid parts of the world. We have lots of rain!
- As we look to the future, climate change models all suggest we will continue to receive this amount of water or even receive more – unlike many parts of the United States and the world where many areas are expected to see rainfall declines as a result of changing global weather patterns.
- Finally, our third advantage is our location along the Hudson River. South of the Hudson Valley, the river becomes saline. This means it is fair to say that we reside at the freshwater

outlet of the Hudson River. Water gathered from a 12,000-square mile collection watershed pours past us in such volumes that withdrawals such as those currently tapped by the City of Poughkeepsie represent tiny percentages of the available water capacity.

I have said, perhaps provocatively, that our three water-rich factors (our ample rain, climate change predictions of more rain in the future, and our location at the freshwater outlet of a 12,000 square mile watershed) position us as the “Saudi Arabia of water.” We are as rich in water as Saudi Arabia is iconically rich in oil. Only we are yet better off, because water is a renewable asset, unlike geologically ancient oil reserves. Water issues are also more critical and enduringly significant because while there are substitutions for oil, there are none for water.

Does this water advantage matter? And does this offer us an opportunity here in the Hudson Valley?

YES: It does matter, and I believe it either offers a huge opportunity if we handle it properly, or it exposes us and our local environments to great misuse and hazard if others notice our advantage before we develop proper plans.

FACTS: Multinational benchmark companies are today evaluating their business risk exposure to water access interruptions. In a 2010 water disclosure risk evaluation completed by the Carbon Disclosure Project [CDP], some 175 of the top 500 largest global corporations in the world (from the US, UK, Japan, South Africa, Germany, and Switzerland.) reported the following:

- 39% of companies have already experienced detrimental water-related impacts. These impacts fall into the broad categories of operational disruptions due to drought or flooding, declining water quality necessitating costly on-site pre-treatment, increases in water prices, and fines and litigation relating to pollution incidents.
- 67% indicated that water related programming had risen to the executive management level.
- 89% had developed specific water policies
- 60% had set water-related production challenges or targets.
- 96% of responding companies were able to identify whether their own operations were exposed to water supply vulnerabilities.
- 53% were even able to do so for their supply chains.
- More than half of the risks identified by these companies were classified as either current or near-term (1-5 years).

These data come from the kinds of firms that bring high paying jobs. As noted by Lance Matteson earlier today, it is appropriate industry and manufacturing (not tourism and agriculture) that offer jobs with pay at levels that support the ways we like to live. These firms are seeking locations where water reliability is assured. Even if we are not preparing for them, some of them are noting us as a place in the world where water capacity appears robust and secure, now and into the future.

The CDP report is just one snapshot perhaps. But it highlights our unique opportunity and challenge here in the Hudson Valley: to prepare, invite, and thrive because of this geographically unique environmental factor. Eastern New York has this natural resource opportunity – water. If we are smart and careful, our economy, quality of life, and environmental outlook could be very good. Scott and I have offered our ideas on how to prepare

for this future, and look forward to hearing and working with others on these planning investments.

I will close with a few quotes from some representative multinational firms:*

“Typically water is a get into business and/or stay in business requirement.”

Anglo Platinum (the world's largest primary producer of platinum)

“Industries need clean, abundant, secure, and competitively priced sources of water.”

Caterpillar

Thank you.

* [quotes from <https://www.cdproject.net/water-disclosure>]

Keynote Address: Water Resources & the Regional Economy

The Honorable Maurice Hinchey

US Representative, 22nd Congressional District

I'm delighted to join all of you today for this important conference, and I appreciate the opportunity to share some thoughts as part of your discussion today regarding “Water Resources and the Regional Economy.”

I'd like to thank Fran Dunwell and the DEC's Hudson River Estuary Program for sponsoring today's event. I'd also like to convey my appreciation to SUNY New Paltz for hosting today.

I was impressed to review the agenda and topics for today and see the list of the many distinguished speakers and participants that you've brought together for this event.

It's clear to me that all of you in this room today have a tremendous amount of combined expertise and vision regarding the many aspects of issues involving water, infrastructure, and economic development.

I therefore thought the contribution I might make to today's discussion is to share some thoughts on the context and the critical importance of this conversation regarding the future of our region. I also hope these remarks will help to underscore the significance and the urgency of the work that all of us are doing.

The Hudson River Valley has played an incredibly significant and historic role in the establishment of our Republic and the development of the United States.

Our National Historic Area designation recognizes this central role in so many areas : the formation of our nation, the outcome of the Revolutionary War, the Industrial Revolution and growth of commerce, the development of American art and culture, and the growing recognition of the value of nature and environmental protection.

This central role in the history of this nation is at its core a story about water and its inextricable relationship to our economy, then and now.

It is the story of our River – as a transportation corridor and strategic crossroads; as a provider of food, energy, and irrigation; as a commercial route that opened up the passageway with the interior of the nation and built the greatest metropolis in this country; as a source of recreation and artistic inspiration; as the birthplace of the modern environmental movement; and as a resource that binds together and defines this incredibly beautiful region.

If we are to build on these great legacies and ensure that our region continues to play a vital role in the development of our state and country, then we must make sure we have wise management policies in place to protect our invaluable water and natural resources. There has been a growing recognition of this fact in the past decades in the Hudson Valley, and I think

many communities are recognizing the tremendous assets we share and must collaborate to protect.

Our economy depends upon the conservation and protection of water resources. We cannot expand and sustain economic prosperity in this region without this being broadly understood and communicated more effectively to all sectors of our communities.

For too many years, the River served more as a dumping ground than a resource that links our communities and underlies our region's economy. But the progress we've made together in cleaning up the Hudson and getting communities to reconnect with the River fills me with hope for our future. Yet there is still much work left to be done.

We are at the point now where we need to critically consider the difference between two competing models for our economic future: short-term economic *growth* or sustainable economic *development*.

The Hudson River Valley continues to draw more and more people. Not just visitors, but new residents. Over the last decade, population growth in the Valley outpaced that of the state at large. With that in mind, the concept of perpetual growth needs to be replaced with the idea of sustainable development – the latter being a process in which we recognize the vital importance of the environment and tap into our society's creativity, resourcefulness, and wisdom to make a transition to less impactful ways of doing things that don't undermine future generations.

We're very good at assessing the economic benefits of a new development that impacts wetlands, but at least in the short-term, we often fail to understand the impact that development has on the ecological services provided by the wetlands: the recharging of groundwater, the filtering of pollution, the support of biodiversity, the absorption of storm water, and flood prevention.

We see an example of this playing out as New York State now considers hydraulic fracturing and horizontal drilling for natural gas – the limitations of our cost accounting is striking. On the one side, it is very easy to estimate the dollar value of gas production, to highlight the money to be made on leases and equipment purchases, and to forecast the positive impact on employment.

But it is much harder to quantify the value of clean groundwater. How much is an unpolluted well or a stable, clean stream worth? What is the value of the natural services performed by the forests that would be cleared for tens of thousands of new drilling sites? The closest we can come is to say it would cost billions if New York City had to begin filtering its water, but even that cost represents only a fraction of the true costs and is only a narrow understanding of the manifold impacts.

A robust and sustainable economy cannot exist without the protection of these natural systems whose costs we may only fully see when they are gone. As a quote from 1732 by Thomas Fuller hanging in my district office says, "We never know the worth of water until the well is dry."

Some years ago, I had the opportunity to meet a scientist from Uzbekistan who was part of a project to restore parts of the Aral Sea in Central Asia.

I think the Aral Sea provides us one of the most stark examples of the need to think in terms of sustainable development rather than simply growth.

As my visitor from Central Asia noted, he and others were working to analyze and try to somehow reverse the impact of decades of Soviet development policies – policies to draw vast quantities of water from this water body for irrigation of cotton and other crops, and growth of industry that consumed and polluted the remaining water.

The Aral Sea once hosted tremendously productive fisheries and supported a large number of communities along its shores. It also once was the fourth largest lake on this planet.

Today, however, 90% of that lake is gone and the remaining 10% has actually separated into a number of much smaller lakes.

These remaining waters are incredibly polluted and vast areas of the former lake are now desert areas. Residue pollution and salty sand blow across the region causing serious public health concerns.

The fishing industry, agriculture, shipping, and most of the former economic activities that supported these Central Asian communities are no longer viable. They are no longer there.

The scientist relayed to my staff and me that the disruption of the natural systems had in fact caused local climate change and disrupted the water cycles. Photos he had showed large ships stranded in desert areas where the nearest water was now miles away.

The money that was made from this short-term industrialization and expansion of water-intensive agriculture, like cotton and rice production, is now long gone and forgotten.

But the incalculable loss of one of our earth's greatest water bodies now stands as a reminder that no amount of money at this point will ever fully restore that region's ecological or economic health.

When people talk about the economy and our environment as if they were two mutually exclusive factors that don't profoundly impact each other, I'm reminded of the photos of the Aral Sea or the scenes of air pollution in Chinese cities where one doesn't see blue sky for most of the year due to industrial emissions.

What makes me hopeful is that many of the things that we can do here in the Hudson Valley to protect and conserve our precious resources, such as water, can also add to our economic development, tourism, clean industrial innovation, and the revitalization of our communities.

For instance, adding green infrastructure to our aging urban areas – through projects like rain gardens and green roofs to absorb stormwater runoff – also creates jobs, supports community revitalization efforts, and improves local air quality.

Upgrading and repairing our drinking water, wastewater sanitation, and stormwater systems not only protects public health and the environment, it also puts in place necessary infrastructure for smart-growth redevelopment of our cities, villages, and hamlets.

Installing water saving devices throughout our communities reduces energy and other costs for treating drinking water and then processing the resulting wastewater.

The work that the Estuary Program and all of you are doing is part of this broader transition – in which we move to a more sustainable development model that improves our region's economy, provides opportunities for us and our children, and also takes into account the natural wealth upon which we rely.

I am grateful for all of your efforts, and I will continue to support and promote this ongoing transition to sustainable development at every opportunity through the federal government.

Thank you.