

Flowing Toward the Future  
21<sup>ST</sup> Century  
**VISIONS AND DIRECTIONS**  
For the Delaware River and its Watersheds



September 1999

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## FLOWING TOWARD THE FUTURE

### 21<sup>ST</sup> CENTURY VISIONS AND DIRECTIONS FOR THE DELAWARE RIVER AND ITS WATERSHEDS

This report was developed from input generously given by the participants in a series of workshops held in April and May 1999. The focus of these workshops was the future of the Delaware River Basin - a future in which millions of people have a stake. In this report are a series of vision statements and directions that point to a specific future for the Delaware River and the numerous watersheds that feed it.

A consortium of governmental agencies and non-profit organizations sponsored the workshops. The ten workshops were held at five locations in the Delaware River watershed. Each workshop used a focus group process with participants divided according to primary interest: preservation/advocacy, commerce/utilities, recreation, and government. Several mixed groups were also conducted. Trained facilitators led the groups through a three-hour process in which they prioritized and described vision elements, challenges and directions. In addition, students attending a regional Youth Summit in Pennsylvania held their own workshops as part of the process.

After all the workshops were completed, the information was analyzed for themes. These themes were consolidated to yield five vision statements that together describe a 21<sup>st</sup> Century Delaware River Basin vision and six categories of directions for attaining these visions. These visions and directions represent approximately 85 to 90 percent of the input offered by the workshop participants.

Various recommended actions flow from the visions and directions. These are presented in the report for consideration. These actions are possible ways of addressing the directions and, therefore, attaining the visions.

The workshops were the first step in a process named *Flowing Toward the Future*. The process culminates with both a Governors' Summit and a Delaware River Watershed-Wide Conference being held in the fall of 1999 (September 29 in Camden, and November 15-17, 1999 in Philadelphia, respectively).



Forsyth Kineon, coordinator of the Delaware Estuary Program, jots down possible components of a "full glass" vision for the Delaware River and its watersheds on a flip chart during a Flowing Toward the Future workshop held in Philadelphia on April 21. Russ Johnson, director of the Heritage Conservancy's Delaware River Watershed Initiative, takes notes as William Sharp of the National Park Service looks on.

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## 21<sup>ST</sup> CENTURY VISION FOR THE DELAWARE RIVER AND ITS WATERSHEDS

Each workshop breakout session (26 in all) began by considering a Delaware River Basin vision. This "vision" consisted of 12 potential vision elements that covered a range of topics from healthy biological populations to less regulations/less government.

In the first step of the process, the participants in each breakout session were asked for additions, deletions, and modifications to the list of 12 vision elements. Once the list of potential vision elements was modified to the participants' satisfaction, a standardized voting process was used to select the top three vision elements. These three vision elements were then addressed in detail, beginning with the development of a list of vision descriptors by the participants for each selected vision element. The 26 workshop breakout sessions yielded lists for 71 priority vision elements. These were readily consolidated into five vision statements.

These vision statements present a somewhat idealistic view of the future divorced from the past. In reality, these visions will likely be attained through well-established institutional arrangements that have evolved from planning, conflict resolution, legislation, and public concern for the environment. Examples of these institutional arrangements include the 1954 U.S. Supreme Court Decree, the Delaware River Basin Compact, and the creation of numerous mission-oriented agencies and non-profit organizations

The following five pages present each vision statement and a list of descriptors consolidated from the numerous lists developed by the workshop participants.

The 21<sup>st</sup> Century Vision for the Delaware River and Its Watersheds consists of:

- The Ecological Vision
- The Water Supply Vision
- The Livable, Pleasing Places Vision
- The Vibrant Economy Vision
- The Stewardship Vision



Pamela V'Combe, watershed planner for the Delaware River Basin Commission, explains the Flowing Toward the Future process at one of the workshops held in Narrowsburg, N.Y.

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## THE ECOLOGICAL VISION

A small stream with a pretty name, Sunflower Stream, flows out of a spring somewhere in Northampton County, Pennsylvania. Its very name suggests sunny days filled with the sights and sounds of dragonflies, frogs, and minnow-filled waters bubbling noisily over small waterfalls of mossy rocks and woody debris. The Delaware River Watershed contains thousands of these pleasant headwater streams. Each stream and the habitat it creates is part of the larger natural and built-up world that makes up the Delaware River Basin.

Between the many Sunflower Streams and the Atlantic Ocean lie bigger streams and rivers plus over seven million people and the huge economy that supports them. These folks, us, aren't necessarily kind to the woods, wetlands, fields, meadows, streams and rivers that make up our world. In fact, we can be quite rough.

This 21<sup>st</sup> Century Ecological Vision is for all the small streams, urban, suburban and rural, in the watershed and everything natural that is downstream from them.

### A watershed-wide habitat that is characterized by:

- The entire biological spectrum: the right number and types of native species with the right amount of biological diversity; i.e., what should be there, is there
- Pristine areas with undisturbed, healthy ecosystems
- Ecosystems that are the best they can be when pristine is not possible
- A natural predator population
- Restored native species and limited invasive, exotic species
- Healthy species populations with none endangered
- Stable spawning areas and environments for desired indigenous species
- Rivers and streams connected to their flood plains in order to preserve riparian habitats
- Large expanses of diverse contiguous natural areas
- Interconnected, naturalized backyard and local habitats
- More self-sustaining habitats and ecosystems - enhanced when needed
- A proper balance between the needs of humans and other species
- Natural settings in all urban areas and urban stream corridors

### And a clean environment that is characterized by:

- Drinkable water
- Breathable air, free of smog and smell
- Edible fish and wildlife
- No adverse human health effects
- No contaminated sites
- No water contamination
- No fish kills
- Minimal artificial light pollution
- Minimal noise pollution

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## THE WATER SUPPLY VISION

A drop of rain falls out of the sky over Margaretville, New York in the heart of the Catskill Mountains. Rolling off a tree leaf, the raindrop becomes part of a puddle along Orchard Street. There it awaits three boys in yellow raincoats who are splashing their way to the Margaretville Central School in the early morning hour. Later in the day, more rain sends the puddle and its water drop down the East Branch, Delaware River to Pepacton Reservoir. Having already served as a recreational resource, the drop is about to become part of someone's water supply.

Whether a drop of water is contained within a reservoir, a pipe, or a stream channel is important business. Not having enough drops of water in the reservoir, pipe, or stream is even more serious. This 21<sup>st</sup> Century Water Supply Vision is for the kids throughout the Delaware River Basin. Water, in many ways, will be a significant ingredient in their futures.

**An ample, high quality and controlled water supply that sustains human life and natural populations is:**

- Enough for agricultural uses
- Enough for recreational uses
- Enough for emergency uses
- Enough for commercial uses
- Enough for domestic uses
- Enough for industrial uses
- Enough to support in-stream and other ecological uses
- Enough for reasonable future growth
- Fish-friendly
- Used equitably
- Sufficient to recharge or not deplete aquifers
- Free from contaminants including seawater
- Affordable, yet meets human health standards
- Better water management of water supplies to ease burdens during drought

**And managed so that the maximum possible efficiency is obtained from the existing and future water supply infrastructure via the:**

- Design and interconnection of water distribution systems
- Timing and location of new facilities
- Equitable allocation of water
- Design, location, and operation of treatment plants
- Operation of reservoirs including flow releases
- Integrated use of surface and ground water
- Development of water conservation, reuse, and recycling programs

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## THE LIVABLE, PLEASING PLACES VISION

A pleasing place for a beaver would certainly be a pond and lodge in the New Jersey portion of the Delaware Water Gap National Recreation Area. Although the recreation area was created largely for human activities, a beaver could be quite happy there swimming around in cool waters and roaming the stream banks looking for just the right mix of trees to gnaw. On nights when the full moon rises high above Kittatinny Ridge, a beaver's life would be quite nice.

While the Delaware Water Gap National Recreation Area is a pleasing place for humans too, we have more complicated needs that often require an urban setting. As we walk through our lives, our environment provides us with a kaleidoscope of sights, interactions, and intellectual stimuli. These are experienced on many levels: emotional, spiritual, intellectual, and physical. Positive experiences within the human environment define what is a livable, pleasing place. The place or region where we live should provide these positive experiences.

This 21<sup>st</sup> Century Livable, Pleasing Places Vision is focused on humans. Characteristics of the Delaware River Basin, and places within the basin, as a livable, pleasing place are:

- Unique character
- Strong sense of community
- Clean, safe communities
- Friendly, caring communities
- Aesthetically pleasing communities
- Economically-viable communities with numerous employment opportunities
- Strong, healthy local economies
- Adequate cultural amenities (arts, museums, historical preservation)
- Walkable, bikeable communities
- Good public transit
- Good public education
- Plenty of recreational opportunities
- Preserved, accessible waterfronts
- Affordable, diverse housing stock
- Adequate, safe drinking water
- Good zoning
- Sound land use planning
- Preserved rural landscape
- Preserved green spaces and vistas
- More green space between communities
- More reuse of existing brownfields and other urban land
- Revitalized, attractive cities
- Orderly, planned growth
- A trend towards controlling urban sprawl

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## THE VIBRANT ECONOMY VISION

The cargo ship's crew was unaware of the Marsh Wrens hidden in the tall salt hay. The birds lazily tracked the slow progress of the ship up Delaware Bay, its bow kicking up small white-capped waves that glistened in the sunlight. Carrying a load of cocoa from South America, the ship was one of thousands that would use the tidal Delaware's port facilities. Much of the cocoa, converted into recognizable name-brand products, would eventually end up on the shelves of stores serving the citizens of the region.

In the early days when both Marsh Wrens and marshes were more plentiful, the non-tidal section of the Delaware was also a major transportation conduit. Durham boats, coal arks, freight canoes, and lumber rafts carried goods both downstream and upstream until railroads and canals made them obsolete. This cargo provided the building materials for towns and cities and the raw materials for industry. As a result, the Delaware River Basin and its residents thrived.

Whether needed to support existing, or to attract new industry, shipping, and tourism, the Delaware River Basin's natural resources are a vital ingredient of the regional economy. It is equally true that a vibrant economy is absolutely necessary for providing the economic support for a healthy environment. This 21<sup>st</sup> Century Vibrant Economy Vision is for everyone.

### A vibrant economy looks like this:

- A healthy mix of industrial, commercial, and service jobs
- An environment that attracts visitors and new residents
- Improved quality of life
- Improved standard of living
- Stable, high per capita incomes
- Multiple employment opportunities
- Low, or no, unemployment
- A boater-friendly haven
- Places to go, and come back to
- Delaware River region integrated into new economy (high tech/tourism)
- Reduced taxation
- Reduced control of commerce
- Incentive-based regulatory alternatives
- Delaware River promoted as focus of the region
- Delaware River promoted as river of commerce
- Recognized importance of marine commerce
- Re-vitalized and connected waterfronts
- Preserved commercial viability of waterfront areas while providing other uses
- Educational and training opportunities
- Adequate water quality and quantity
- Proper balance in decisions so that both a clean healthy environment and a vibrant economy are obtained

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## THE STEWARDSHIP VISION

The sound of bluegrass banjos, guitars, and fiddles permeated the air, around the heads of the audience, and then wafted out over the water. The musicians, their voices harmonizing, sang about rural life, hardship, happy times, and the human condition.

The river festival folks understood the music even if their own life experiences were different than those portrayed in the songs. At the appropriate times, they knew when to be quiet, when to applaud, when to stomp their feet, and when to smile. The audience's response encouraged the musicians to play harder and better. They were the caretakers for music that was rarely heard.

Stewardship is like the shared bond among the music, musicians, and an audience. Each party knows its part; each party knows that its part contributes to the whole. A well-orchestrated stewardship effort, with related educational efforts, was seen by many *Flowing Toward the Future* workshop participants as the single most important activity to insure success in the 21<sup>st</sup> Century.

Stewardship includes our personal and collective responsibility to manage our affairs in such a way that the rights of others are not impinged, now or in the future. Implicit in stewardship is preserving the rights of all life to exist and thrive in co-existence with humans.

This 21<sup>st</sup> Century Stewardship Vision is for all the residents and visitors who will join in the shared bond that will create a harmonious, sustainable Delaware River Basin.

### Stewardship and the means to attain it are characterized by:

- A shared vision of the basin
- Understanding that we all live in a watershed
- Understanding the importance of individual impacts and that every action has a consequence
- A shared sense of stewardship, a caring attitude
- An appreciation of the shared resources
- More sustainable use of resources
- Respect for the environment and each other
- Neighborhood/community spirit for the common good
- Individuals leading by example
- Cultural changes attained through education
- Educators who train kids who, in turn, train their parents
- Education that reduces confrontations
- A feeling that it is socially unacceptable to be a poor steward
- Knowledge that everybody in the watershed has a sense of place
- A goal that in 100 years, all five visions are taken for granted
- Sustainable development
- Sustainable agriculture



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## DIRECTIONS

All visions are idealistic by nature. Visions are attainable, to a large degree, depending upon the resources brought to bear, and the challenges encountered. Directions are ways of meeting challenges, or, at least, reducing their impact. Some of the major challenges that will carry over to the 21<sup>st</sup> Century include funding issues and the constraints inherent in existing institutional arrangements such as the 1954 U.S. Supreme Court Decree that apportions the waters of the basin among the states and New York City, the Delaware River Basin Compact, the Interstate Water Management Recommendations to the Parties to the U.S. Supreme Court Decree of 1954 (the Good Faith Agreement), national scenic river designations, and numerous others.

The participants in the ten workshops were asked to list challenges and directions related to the attainment of each of their top vision priorities. Over 1,700 challenges and associated directions came out of the workshop process. Six categories of directions were derived from these numerous responses. Each represents a collection of related activities that should, or could, be done by agencies, organizations, and/or citizens of the basin.

The six categories of directions are titled The Good Science Direction, The Watershed Education Direction, The Watershed Image and Marketing Direction, The Land Resources Direction, The Water Management Direction, and The Working Better Together Direction. These are not stand-alone directions, but packages of directions that collectively will attain the five vision statements making up the 21<sup>st</sup> Century Delaware River Basin vision.



Richard Albert, basin planner for the DRBC, explains how visions gleaned from the workshops will help to develop directions and action items to be used in managing the basin's natural resources during the 21<sup>st</sup> Century.

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## THE GOOD SCIENCE DIRECTION

Good Science can be defined as the collection, dissemination, and use of sound scientific, economic, and technology information to assist decision-making. Social science is also a significant part of Good Science.

The Good Science Direction would expand and upgrade basin data collection and synthesis, data availability, research, and technology transfer, in order to improve decision-making. Subject areas include: biology; chemistry; hydrology; geology; ecology; growth demands; population projections; all kinds of trend analysis; equity issues; land use; habitats; critical areas; water quality and quantity; cumulative impacts; best technology for a wide variety of needs; the "real" costs and benefits of decisions; and many others.

Good Science is the first step to having an informed public and for informed decision-making in both the public and private arenas. On one side, many believe that decisions are made from an emotional perspective in the absence of good science. Conversely, many believe that science-based decisions would often favor environmental concerns if high quality scientific information were available.

In either case, agreement exists that Good Science, as a tool for many purposes, is needed in the basin and that the availability of good scientific and economic information would enhance decision-making. In addition, a need exists to accelerate studies on a host of issues affecting the watershed and these needs should be identified and prioritized.

### Good Science issues needing to be resolved include:

- Is the current state of science in the basin - good, accurate, needing improvement?
- What level of scientific uncertainty can be tolerated?
- What is meant by "healthy and balanced" biological populations in urban areas, or anywhere for that matter?
- What is meant by "clean," "affordable"?
- What indicators of success should be used i.e., measurable success?
- What are the true costs of doing, or not doing, something (monetary and non-monetary)?
- How can good science be best disseminated to the public and decision-makers?
- How can environmental, economic, and social analyses be better and appropriately factored into the decision-making process?

### Specific research, inventory, and monitoring activities include:

- Develop basin environmental indicators
- Inventory priority areas/scenic vistas
- Biological inventory of the basin and Delaware River
- Research habitat and biological population relationships
- Identify critical areas and habitats
- Habitat prioritization
- Inventory water availability
- Develop water budgets for low-flow and high-flow conditions
- Develop wildlife-based water quality criteria where it doesn't already exist
- Develop additional human health criteria for water quality

- Evaluate historic river flows
- Computerize River Master data
- Economic studies re: river flows and other water and environmental issues
- Develop additional flood control programs
- Standards for monitoring
- Data on runoff quality and quantity
- Increase river flow monitoring in Upper Delaware
- Develop comprehensive basin-wide GIS database
- Develop economically-feasible discharge technology
- Promote more use of natural treatment and alternative stormwater technologies
- Promote and research more efficient and innovative water re-cycling, water conservation technologies in industry and gray water use
- Better modeling of weather/drought patterns
- Develop basin environmental hot line
- Develop science for restoration activities
- Highlight success stories as part of technology transfer
- Import technology from other areas, transferred throughout the basin
- Make sure regulators and public employees have information on newest technologies
- Cause and effect research
- Develop new dredging technologies



Using multi-colored dots, participants in the Flowing Toward the Future process prioritized a multitude of ideas stemming from brainstorming sessions at the ten workshops, held in Dover, Del.; Philadelphia; Bridgeton, N.J.; Narrowsburg, N.Y.; and Bethlehem, Pa. Participants above post their dots at the Bethlehem workshop.

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## THE WATERSHED EDUCATION DIRECTION

The Watershed Education Direction considers multi-faceted education as the most important way to create a watershed-wide sense of stewardship via informed citizens and decision-makers (private and public). The goals are to inspire people with a shared vision of the watershed so that collectively they realign their personal, corporate, organization, and/or agency goals with the vision; and also increase the technical capabilities of the persons who work for them for the same purpose. At the end of the day, the basin vision should be attained almost without conscious thought.

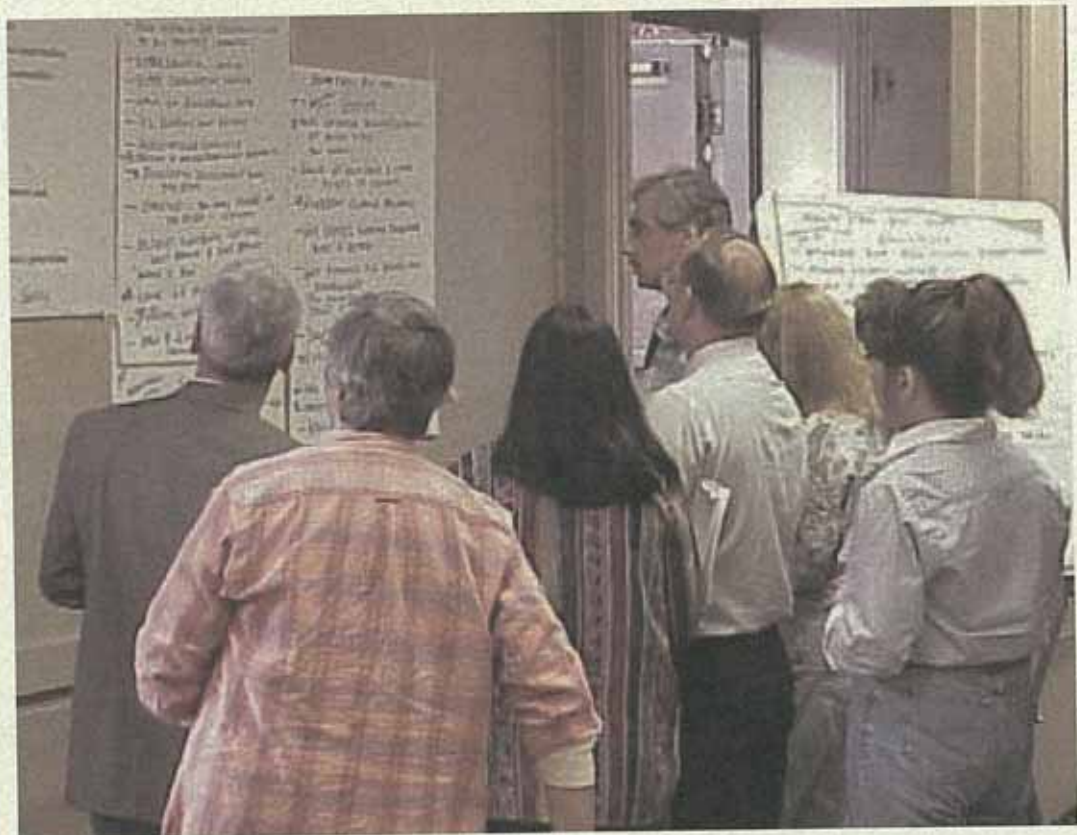
The target audience for this program was quite literally everybody in one way or another. Specifically mentioned in one or more workshop sessions were (in no particular order):

- the general public/citizens
- school children – all ages
- traditionally under-represented groups
- businesses/commercial
- industry
- developers
- teachers
- public officials
- decision-makers
- municipalities
- state environmental inspectors
- planning board members
- zoning boards
- individual property owners
- farmers
- regulators
- environmental groups
- golf course operators
- county workers
- sportsmen
- public employees
- manufacturers
- local code enforcement officers.

Specific watershed education activities that were suggested include:

- Develop more focused environmental curricula concerning the Delaware River and its drainage area for grades K through 12
- More field trips including sewage treatment plants
- Environmental ethics education
- Make more locally focused, but ensure that a watershed stewardship element is present
- Encourage environmental projects in high school
- Make environmental education fun
- Integrate with other subjects e.g., math, history, science
- Increase park education programs

- Signage at watershed boundaries, stream crossings, discharge points, stormwater inlets, etc.
- More nature centers
- More interpretive displays (especially at river access points)
- Create documentary video on the Delaware River Basin
- Use all types of media
- Promote seminars on water supply and other environmental management subjects
- Develop adult scholarship program
- Educate home owners, municipalities, industry, business, regarding how to reduce their impact
- Develop a basin environmental report card, emphasize trends, good and bad news
- Streamline and make rules and regulations understandable and user-friendly
- Develop a basin watershed clearinghouse (including Internet) with Yellow Pages with state and other laws and rules, information on community enhancement projects, current scientific data, technological information (various subjects), and special student sections (e-pals etc.)



Flowing Toward the Future partners at the Narrowsburg workshop study ideas to be used in shaping the future of the Delaware River Basin -- a future that will impact millions of people.

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## WATERSHED IMAGING AND MARKETING DIRECTION

The development of a regional marketing plan for the Delaware River Basin was proposed for two reasons. The first goal is to promote an image of the region as a place for potential visitors with the corollary economic benefits of tourism. The same type of marketing is also believed necessary to promote a sense of living in a special place among the basin's residents.

Specific activities for increasing the visibility of the Delaware River and its watersheds include:

### Watershed Marketing

- Develop a high profile marketing/ advertisement program that highlights the cultural and environmental amenities that would be attractive to new industry, commerce, and tourism
- Organize a coalition(s) of chambers of commerce
- Join private efforts (industrial and commercial) with government
- Recognize the need for off-seasonal marketing plans
- Develop a boating-friendly atmosphere and plan (estuary and bay)
- Improve recreational facilities to attract visitors
- Increase recreation-related facilities to attract visitors including those arriving by boat
- Develop boater-oriented waterfront plan

### Image Creation

- Develop a common basin identity and image which basin residents can aspire to achieve
- Create via regional workshops a promotion identity that is fun, creative and inspiring
- Promote high "quality of life" instead of high "standard of living"
- Develop stewardship programs like "Delaware Bay Aides"
- Recognize stewardship and "good neighbors" efforts
- Develop green certification programs for industries, municipalities, etc.
- Create an image for the basin that links the individual watersheds to the basin as a whole
- Promote regional cuisine, foods, products, textiles, etc.
- Create a regional color scheme from individual colors that identify sub-regions
- While recognizing regional variation, promote architectural themes that make the basin a distinct and pleasing place to live and visit
- An Earth Day-like celebration for the Delaware Bay (Bay Day), or, on a basin level, (Water Day)

### Image Cleanup

- Expand river and watershed cleanups
- Create enhancement programs so that the riversides of towns are attractive to water users
- Increase urban garden and backyard habitat programs
- Create tax incentives (e.g., property tax offsets, reductions in property tax increases due to home improvements, sales tax rebates) for improving property appearance
- Expand local cleanup days, add hazardous chemical drop-offs
- Better trash pickup and recycling programs
- Have river sweeper/response team for Delaware Estuary debris
- Create deposit fund for tires in order to reduce improper disposal practices
- Tougher laws for graffiti and vandalism
- Increase litter enforcement and fines
- Increase enforcement and fines for illegal trash dumping
- Have program to locate and remove illegally dumped solid wastes
- Expand roadside cleanup programs
- Promote the use of recycled materials

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## THE LAND RESOURCES DIRECTION

Land is the one resource that rivers and streams flow through and people live and work on. The Land Resources Direction involves land development activities and land preservation for recreation, wildlife habitat, open space, scenic vistas, source water protection, and other purposes. Included as part of this direction are aspects of urban restoration and revitalization, controlling urban sprawl, preserving agricultural land and important forest resources, and invasive plant species control.

The following directions pertain largely to state government and local municipalities. All workshop participants recognized that there is a constitutional separation of powers existing between states and their municipalities on land issues, the so-called home rule issue. Within the boundaries of this reality, however, are numerous opportunities for each level of government to work together toward mutual goals and objectives. The directions in this section represent these opportunities.

A land-related issue that was not addressed in any detail by the workshops is flooding and its corollary subject, floodplain regulation. The lack of wide-scale flooding and the recent focus on droughts is undoubtedly the reason that flooding was not on the minds of workshop participants. The following directions, therefore, contain nothing regarding flood plain zoning, recognition of flood hazards, structural and non-structural flood control measures, and so forth. Flood issues, however, will be addressed in the basin planning effort described under the Water Management Direction.

### Specific directions for the Land Resources Direction include:

#### Land Regulation and Planning

- Develop basin land use plan that can be used as a guide to environmental decision-making. The plan would be initiated by compiling all the existing land use plans of the basin.
- Manage land use to attain/protect the quality and quantity of water supplies
- States develop resource-based land use guidance and assistance
- State government promote more collaborative land use planning at the local level among developers, environmental groups, citizens, and local government
- Develop and/or improve state land use planning guidelines in each state, insure that guidelines are compatible along the interstate Delaware River
- Have states develop master plan with planned growth areas
- Improve state and regional planning
- Revise municipal planning codes where needed
- Develop a program for certifying local planning and zoning commissions that they have been appropriately trained
- Encourage the creation and use of local environmental advisory commissions
- Encourage land use planning and zoning across municipal boundaries
- Local government consider use of impact fees for loss of natural resources
- Encourage greenways and bikeways
- Develop guidance for improved industrial park planning and zoning
- Give open space priority in land use planning
- Create legally defensible zoning
- Develop waterfront master plans
- Revitalize urban areas and neighborhoods
- Promote use of brownfields and former industrial sites
- Promote communities/developments where people both live and work
- Encourage infill development in already-developed areas

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## Land Preservation and Invasive Plants

- Inventory and acquire environmentally sensitive sites (land and water)
- Prioritize areas for high quality preservation
- Develop incentives for preserving pristine places e.g., state/federal bonds, tax credits, etc.
- Help rural townships with the most open space and the least resources with preservation issues
- Pool resources (private-private, private-public, public-public) to buy open space
- Inventory rails to trails candidates
- Develop communication network for alerting when land is about to come on the market
- Increase use of conservation easements
- Form partnerships with developers to preserve open space
- Develop criteria for assessing scenic vistas
- Develop program to identify, inventory, and protect scenic vistas
- Protect aquifer recharge areas via special zoning category
- Develop planning tools and zoning criteria for protecting valuable timber producing lands
- Preserve stream and river corridors and buffers including rights of way/access
- Prohibit the sale of invasive noxious and/or exotic plant species that crowd out native species of plants
- Increase penalties for the import and sale of invasive plants
- Develop partnerships with private nurseries to advocate native plant use
- Require labeling as to native plants



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## THE WATER MANAGEMENT DIRECTION

The Water Management Direction deals with water quality, water availability and use, storage facilities such as reservoirs, reservoir flow releases, ground water and the institutional complexities of water management in a large interstate river basin. Within this subject are related issues such as storm water, wetlands, flood control including flood plain management, pollution control including the control of both point and nonpoint sources, and aspects of stream corridor management.

Because of the intense and often conflicting demands on the water resources of the Delaware River Basin, a basinwide approach to water resource management was often suggested. A need for multi-level planning and a management framework within this basinwide approach was also recognized; i.e., basin to watershed to regional to local. The need to balance competing interests and uses was acknowledged.

### Water management directions included:

- Develop comprehensive plan for the basin including a scheduled action plan. A comprehensive plan developed under the auspices of the Delaware River Basin Compact would address water supply, pollution control, flood protection, watershed management, recreation, hydropower, and water withdrawals and diversions.
- River Planning: the need to re-examine reservoir releases on regulated tributaries and the Delaware River including:
  - Downstream flows
  - Timing and magnitude of releases
  - Ecological aspects of releases including water quality related aspects
  - Optimization of reservoir operations so that reservoir levels are kept as high as possible, recognizing the need to balance reservoir levels with downstream flow needs.
  - Attainment of healthy and balanced biological populations including cold-water fisheries
  - The need to enhance existing water conservation efforts
  - Water supply planning

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## THE WORKING BETTER TOGETHER DIRECTION

The Working Better Together Direction presents ideas concerning better planning, better enforcement of existing regulations, and better ways for agencies, non-governmental organizations, the business community, and individuals to coordinate their activities and work together. The proper enforcement of existing regulations was seen by many workshop participants as preferable to new or fewer regulations.

### Specific suggestions and activities for working together better are:

#### Planning

- Develop long term planning goals on a basinwide, regional and local basis, and insure consistency among goals
- Organize communities to perform watershed-based planning and management
- DRBC initiate watershed planning under its Special Protection Waters anti-degradation regulations
- Use council of government model or other regional planning model to effect regional planning
- All towns in Upper Delaware region adopt Upper Delaware *River Management Plan*
- Develop comprehensive watershed management legislation in those states of the basin not having such legislation

#### Enforcement of Existing Regulations

- Increase enforcement effectiveness
- Have better, stricter enforcement
- Upgrade penalties, have more serious penalties, assess penalties uniformly
- Have regulations that are tighter, consistent, non-duplicative, and understandable
- Provide performance standards instead of prescribed practices
- Harmonize regulations across agencies and different levels of government
- Simplify regulatory process
- Have consistent management standards among basin states
- Create a citizen advisory committee for interstate regulations to advise DRBC and its member states
- Have clear lines of jurisdiction over particular activities
- Have timely inspections including weekends, nights, and holidays
- Insure that public facilities are in compliance
- Increase enforcement on public projects
- Develop a uniform, well publicized complaint system
- Provide more ways of resolving disputes
- Develop comprehensive "one stop shopping" for permits
- Strengthen local environmental advisory council responsibilities
- Develop consistent setback regulations regionally and interstate for the Delaware River

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## Better Organizations

- Promote better interagency cooperation
- Reduce interagency competition and cross-purposes
- Have a single government contact for each activity
- Aggressively increase coordination and communication among agencies and states with Delaware River Basin responsibilities
- Promote partnerships of agencies and stakeholders; between non-profits; between stakeholders and competing interests; between private, non-profit and public
- Have more action and less planning
- Increase person to person communication
- Locally determined priorities supported by state and federal agencies
- Reorganize current management system to reduce overlaps and fill gaps
- Have more responsibility placed on applicants
- Create a non-biased, non-government entity for consensus building, arbitration, and issue facilitation
- Facilitate meetings between boaters and waterfront developers to insure boater needs are taken into account
- Consolidate code enforcement and other services between local municipalities
- Create state equipment pool for short-term loan to local governments



Casting votes in Philadelphia.

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## RECOMMENDED ACTIONS

The workshop participants addressed the future in terms of a vision and the directions needed to attain the vision. This section presents some "big picture" actions that could be used to create a more responsive framework for addressing groups of directions. Many of these need to be accomplished early in order to support the long-term effort. The list of actions should also not be considered all-inclusive.

While the actions that follow are important, ultimately success will only be attainable by the Working Better Together Direction. All government and non-government entities and citizens need to promote better inter-organizational cooperation throughout the Delaware River Basin by:

- reducing interagency/inter-organizational competition,
- promoting partnerships,
- increasing person to person communication,
- increasing organization to organization communication,
- increasing agency to agency communication, and
- consolidating services, programs, and regulations whenever possible.

### Government Action Items

1. **Action:** Develop a comprehensive water resources plan for the Delaware River Basin. A new water resources plan for the basin is necessary to: (a) resolve flow issues; (b) resolve water use issues; (c) re-examine existing water policies in light of current data, trends, and other information; and (d) address various aspects of the five *Flowing Toward the Future* vision statements.

The planning process will build upon prior planning activities including the CCMP (Comprehensive Conservation and Management Plan) of the Delaware Estuary Program, the Upper Delaware River Management Plan, the DRBC Level B Plan, and numerous others. The plan will also provide input to the development of the environmental, social, and economic indicators discussed below for the basin environmental report card.

Water resources planning for the Delaware River Basin is a mandated responsibility of the Delaware River Basin Commission. A plan, properly done with impact analyses and numerous opportunities for public input, will allow inter-related issues to be addressed and resolved under a common umbrella.

Action 1 addresses the Good Science, Water Management, and Working Better Together Directions.

Lead<sup>1</sup>: DRBC

2. **Action:** Establish a Delaware River Basin Watershed Advisory Council to (a) advise the DRBC regarding its basin planning effort (see Action 1), (b) assist the Commission in the development of a watershed management approach for the basin, (c) advise the Delaware Estuary Program as needed, and (d) conduct other activities on behalf of the basin community in support of the vision and directions of the *Flowing Toward The Future* process (for example, see Actions 3 and 4). The council will have broad representation with members from the environmental, business, academic, and governmental communities: the exact membership and their appointment is to be determined.

Action 2 addresses the Water Management and Working Better Together Directions.

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<sup>1</sup> "Lead" means that this entity will initiate the activity and carry it to completion

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Lead: DRBC with input from partners

3. **Action: Develop a watershed educational effort.** This effort would address the development of environmental education curriculums, training programs, educational tools, education-related certification programs (both educators and trainers), and other products directed at an audience ranging from school children to adults.

The proposed Delaware River Basin Watershed Advisory Council will initiate this task by consulting with representatives of numerous public and private entities, academic institutions, and other educational entities. During this process, a survey of existing programs, materials, curriculums, training programs, educational tools, education-related certification programs, and so forth will be conducted and a report prepared.

Action 3 addresses the Watershed Education Direction.

Initiator<sup>2</sup>: Delaware River Basin Watershed Advisory Council

4. **Action: Develop a basin-wide image and marketing plan.** A basin image and marketing plan is important for growing the regional economy and for fostering pride in the region by its residents. The Delaware River Basin Watershed Advisory Council will initiate this action by consulting with state tourism departments, local and regional chambers of commerce, and others as needed. Following the council's investigations, funds will be sought from government, business and other sources, if needed, to hire a marketing consultant to develop a basin marketing plan.

As part of this planning effort, a basin-wide program to address trash, litter, river debris, and illegally dumped bulk solid wastes (stream banks, land areas, and roadways) will be developed. This program will be directed at making the Delaware River Basin more attractive to visitors and a place of pride for its residents.

The role of the advisory council will be to conduct a fact-finding study of the need for a basin image and marketing plan, investigate existing constraints and problems, and to sponsor a committee of the appropriate entities to initiate and conduct the proposed planning study. It is envisioned that the basin image and marketing plan could be implemented by a permanent interstate conference, a Delaware River Chamber of Commerce, or some other institutional arrangement to be determined by the marketing plan. Entities to be involved could include state and local chambers of commerce, tourism departments, the Upper Delaware Council, the Partnership for the Delaware Estuary, and others.

Action 4 addresses the Watershed Image and Marketing, Watershed Education, and Working Better Together Directions.

Initiator: Delaware River Basin Watershed Advisory Council

5. **Action: Host one or more "good science" symposiums** to determine the best ways of obtaining and applying good science in the Delaware River Basin. Good science involves the collection, dissemination, and use of sound scientific, economic, and technological information to assist decision-making. Members of the various DRBC and Delaware Estuary Program scientific and technical advisory committees, and analogous professional groups from the environmental, business, industrial, and academic communities will be invited. The symposium(s) will focus on the Good Science issues raised at the workshops and the possible need for a neutral organization, funded by business and government, to perform certain scientific functions. These functions could include (a) the development of scientific standards where needed, (b) the performance of scientific and

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<sup>2</sup> "Initiator" means that this entity will take whatever steps are necessary to get this action underway. The activity may subsequently be taken over by others and completed.

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economic research, (c) a clearinghouse for information on best technology, (d) the operation of appropriate certification programs, and (e) certain dispute resolution functions involving scientific interpretation.

Action 5 addresses the Good Science Direction.

Initiator: Delaware River Basin Commission with a symposium planning committee of DELEP, non-governmental, and industry representatives

6. Action: Make GIS coverages available at state GIS clearinghouses and identify basin-wide GIS needs. GIS mapping and related technological applications are basin tools that will support all of the actions recommended in this report. While GIS is available to many agencies and organizations working within the basin, overlaps and gaps exist in the data. Data availability and cost are serious constraints that can be reduced by posting data on state GIS clearinghouse sites. This activity will serve directly as input to the good science symposiums and be the first step in the development of a basin-wide database available to all users.

Action 6 supports the Good Science, Land Resources, Water Management, and Working Better Together Directions.

Initiator: DELEP with a consortium of DRBC, basin states, Heritage Conservancy, and other partners.

7. Action: Compile a periodic basin environmental report card using environmental, social, and economic indicators. As the vision for the basin is adopted and acted upon, it will be important to track the extent that the visions are being met. The indicators comprising the report card will evaluate the effectiveness of actions that are taken and additional efforts that might be required.

Action 7 addresses the Watershed Education Direction.

Lead: DRBC, DELEP and partners

8. Action: Expand the DELEP Regional Information Management Service (RIMS) into a Delaware River Basin watershed clearinghouse. To expand RIMS into a basin-level clearinghouse similar to the Great Lakes Information Network (GLIN) expands not only the geographical scope of RIMS, but also implies that it will have more data repository functions and linkages to other data sources than it currently has. It is envisioned that the expanded RIMS would serve numerous needs beyond environmental needs including needs related to tourism, recreation, economic development, and planning of all kinds. This will require contributions of resources and information from numerous partners.

Action 8 supports the Good Science, Watershed Education, and Watershed Image and Marketing Directions.

Lead: DELEP, DRBC and partners

9. Action: Establish a Delaware River Basin land issues task force to study issues related to urban revitalization, the control of urban sprawl, and the preservation of farmland and critical open space (including stream corridors) within the Delaware River Basin. The objective of the study will be to provide an interstate and basin-wide perspective to augment and enhance on-going state efforts that are attempting to address these and associated issues.

An assignment of the task force will also be to develop an institutional framework for addressing these issues on a watershed basis. An interstate compact for cooperative land use planning, preservation, and control; a regional plan association for the Delaware River Basin modeled on the Regional Plan Association of the Greater New York Metropolitan Area; and other appropriate models should be considered.

Action 9 supports the Land Resources Direction.

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Lead: Governors

10. **Action:** Host a series of regulatory symposiums to (a) harmonize regulations across all levels of government, (b) determine the means to simplify the regulatory process, and (c) develop consistent management standards among basin states. The purpose of this action is to begin addressing enforcement and regulatory concerns raised by both the regulated and environmental communities.

The DRBC Water Quality Advisory Committee consisting of state, federal, and public members, will conduct the initial symposium as a prototype. The first symposium and related follow up work will deal only with the water quality regulations of the four basin states, the federal government, and DRBC. Other symposiums and subsequent work, led by an appropriate entity, will be initiated after the prototype is completed.

Action 10 supports the Working Better Together Direction.

Initiator: DRBC Water Quality Advisory Committee

#### **Non-Government Action Items**

11. **Action:** Consider establishing a basin-wide stakeholders' alliance patterned after the Alliance for the Chesapeake Bay, the Mississippi River Basin Alliance, or some other model. The establishment of a stakeholders' alliance recognizes that many important decisions are made, and actions taken, that are outside the realm of governmental bureaucracies. Such an alliance could provide a forum for non-profit organizations, business, and other entities to develop programs, foster partnerships, facilitate issues, generate political support, and provide needed linkages between state and federal policies and local communities.

The envisioned alliance would not have governmental representation or be government driven. It would be governed by its members in accordance with a charter adopted by its members, assuming that the potential members of an alliance meet and form one. The role of the alliance would be determined by its founders and would be distinctly different from the role envisioned for the proposed watershed advisory council (Action 2). The interest in a stakeholders' alliance will be discussed and ascertained at the November 1999 *Flowing Toward the Future* Delaware River Watershed-Wide Conference.

Action 11 supports the Working Better Together Direction.

Initiator: Heritage Conservancy will initiate discussion of this issue at the Delaware River Watershed-Wide Conference on behalf of the *Flowing Toward the Future* process

12. **Action:** Establish an educational program for local municipal officials regarding non-regulatory approaches and other tools for land conservation and management. Since municipal officials have broad powers and responsibilities for land use control in all the basin states, and since land use has been recognized as integral to many resource management and quality of life issues, municipal officials have a unique and important role in attaining the basin vision. Education is the first step in involving all 838 municipalities in the watershed in the land resources direction.

Action 12 supports the Good Science and Land Resources Directions.

Initiator: Heritage Conservancy and partners

## DELAWARE RIVER AND ITS WATERSHEDS

- Drainage Area - 13,539 square miles (about 0.4 percent of the continental U.S. land area)
- Population - About 7.3 million residents
- Demands - Over 17 million people, or 6.4 percent of the U.S. population, rely on the Delaware River system for water
- Basin jurisdictions:  
Four states, 43 counties, and 838 municipalities
- Number of major watersheds: 216
- Largest tributaries: Schuylkill, Lehigh, East Branch, and West Branch of the Delaware River
- Rainfall - 42 to 50 inches per year; average of 44 inches
- Reservoir storage - About 413 billion gallons
- Uniqueness - The non-tidal Delaware River main stem is one of the last free-flowing major U.S. rivers, home to numerous endangered species and rich in American history





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## Acknowledgements

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The *Flowing Toward the Future* process is sponsored by: Alliance for a Sustainable Future, Delaware Department of Natural Resources and Environmental Control, Delaware Estuary Program, Delaware River Basin Commission, Heritage Conservancy, National Park Service, New Jersey Department of Environmental Protection, New York Department of Environmental Conservation, Partnership for the Delaware Estuary, Pennsylvania Department of Environmental Protection, Upper Delaware Council, U.S. Environmental Protection Agency, and Water Resources Association of the Delaware River Basin.

The workshop phase of the *Flowing Toward the Future* process was conducted by the Delaware River Basin Commission, Carol R. Collier, Executive Director. Richard Albert and Pamela V'Combe were project manager/lead writer, and co-manager, respectively. Over 50 persons from the *Flowing Toward the Future* sponsoring organizations served as workshop planners, organizers, breakout facilitators, notetakers, scribes, and hosts.

Cosponsors of individual workshops included various *Flowing Toward the Future* sponsors plus Cumberland County, N.J., Delaware River Greenway Partnership, Lehigh University, Pennsylvania Environmental Council, Philadelphia Water Department, and the Town of Bridgeton, N.J.

Photos by *Clarke Rupert*

**Resolution on the Protection  
of the Delaware River Basin**

**Whereas**, the states of New York, New Jersey, Pennsylvania, and Delaware share 13,539 square miles that comprise the Delaware River Basin;

**Whereas**, almost seven percent of the nation's population rely on the Delaware River Basin's waters for drinking and industrial use; and

**Whereas**, the Delaware River, the last major undammed river in the East, is a unique ecosystem that provides a multitude of natural, economic, and recreational benefits for all its inhabitants by being a key part of the Eastern Flyway, having the most abundant horseshoe crab population in the world, having wetlands designated of international significance for shorebirds, and having the second largest freshwater port in the nation; and

**Whereas**, National Estuary Day is October 2<sup>nd</sup> and we recognize the importance of the Delaware Estuary Program; and

**Whereas**, numerous organizations have the primary responsibility for protecting, maintaining, and restoring the integrity of the waters of the Delaware River Basin ecosystem; and

**Whereas**, our state environmental agencies, our Delaware River Basin Commission, our Delaware Estuary Program, the National Park Service, the United States Environmental Protection Agency, and five non-profit organizations representing diverse sectors of the basin community initiated a multi-step process called the "Flowing Toward the Future" to examine visions and directions for the 21<sup>st</sup> century Delaware River Basin; and

**Whereas**, those organizations have reaffirmed their commitment and dedication to the Delaware River Basin; and

**Whereas**, the participants of "Flowing Toward the Future" have consolidated views, challenges, directions, and visions for the Delaware River Basin; and

**Whereas**, as trustees of the Basin's natural resources, the Delaware River Basin Governors have a shared duty to protect, conserve, and manage the Delaware River Basin waters and ecosystem; and

**Whereas**, the Delaware River Basin Governors want to continue to address the concerns and challenges of the public through processes like "Flowing Toward the Future";

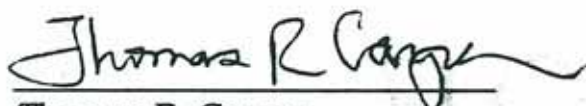
**Now Therefore, Be It Resolved**, that the Delaware River Basin Governors support the "Flowing Toward the Future" public process and thank the workshop participants for their interest in the Delaware River Basin and their valuable input into the "Flowing Toward the Future" process and its findings; and

**Be It Further Resolved**, that the signatory states to the Delaware Estuary Program's Comprehensive Conservation and Management Plan recommit to its implementation; and

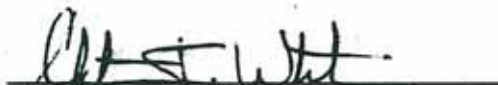
**Be It Further Resolved**, that we the Governors challenge the basin community to develop a unifying vision for the basin, and

**And Be It Finally Resolved** that we the Governors direct the Delaware River Basin Commission to develop a new comprehensive water resources plan for the Basin, periodically compile an environmental goals and indicators report, and establish a watershed advisory council.

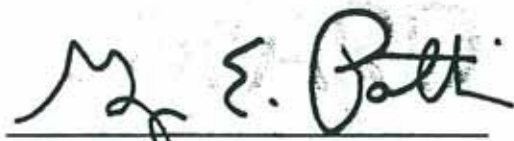
Signed this 29<sup>th</sup> day of September, in the Year 1999:



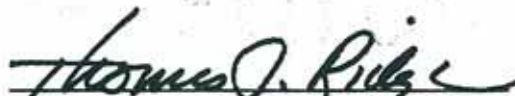
Thomas R. Carper  
Governor, State of Delaware



Christine Todd Whitman  
Governor, State of New Jersey



George E. Pataki  
Governor, State of New York



Thomas J. Ridge  
Governor, Commonwealth  
of Pennsylvania

The United States Environmental Protection Agency as an official member of the Delaware Estuary Program, the United States Army Corps of Engineers as the federal representative of the Delaware River Basin Commission, and the National Park Service as a major federal land and water manager in the

Delaware River Basin, hereby affirm their support of the Governors' Actions taken this day by the signing of this Resolution on the Protection of the Delaware River Basin.

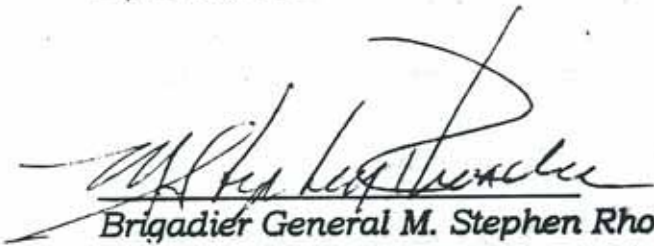
Signed this 29<sup>th</sup> day of September, in the Year 1999:



Jeanne Fox  
Regional Administrator,  
EPA Region II



Michael McCabe  
Regional Administrator,  
EPA Region III



Brigadier General M. Stephen Rhoades  
Commander, North Atlantic Division  
US Army Corps of Engineers



Marie Rust  
Regional Director,  
Northeast Region,  
National Park Service  
Department of the Interior