Annual Report on the Implementation of the Chesapeake 2000 Agreement

Prepared by the Secretary of Natural Resources
November 2004

Introduction

This document summarizes the activities of Virginia's state agencies related to the commitments of the Chesapeake 2000 Agreement and is prepared pursuant to the requirements of Section § 2.2-220.1. The document lists, in order, the commitments contained in the Agreement. These commitments fall under the major sections contained in the Agreement: Living Resources Protection and Restoration, Vital Habitat Protection and Restoration, Water Quality, Sound Land Use and Stewardship and Community Engagement.

For additional information on the Chesapeake 2000 Agreement please visit www.chesapeakebay.net/c2k.htm or www.naturalresources.virginia.gov

Living Resource Protection and Restoration

1.1 - Oysters

1.1.1 -
By 2010, achieve, at a minimum, a tenfold increase in native oysters in the Chesapeake Bay, based upon a 1994 baseline.

Marine Resources Commission -

Year: **2004**

Approach to Implementation

The effort in Virginia primarily involves habitat restoration with shells; however, there are important elements that involve aquaculture, disease research and management strategies, and oyster stock monitoring.

State Role

There is currently consensus on a Baywide strategy for oyster restoration involving 10% of the available oyster grounds being dedicated and restored for oyster sanctuaries (primarily 3-dimensional reefs), and the remainder restored for oyster production. The effort in Virginia primarily involves habitat restoration with shell; however, there are important elements that involve aquaculture, disease research, management strategies, and oyster stock monitoring.

Progress/Outlook

- More than sixty, 3-dimensional reef sites have been constructed Baywide since 1993.
- Stock assessment of current oyster populations indicate lower populations of oysters in 2003 than in 2002, and only 40% of the numbers of oysters as in 1994 (the baseline for this commitment) despite the significant increase in funding and effort since that time.
- Management strategies currently being implemented appear not to be increasing oyster population numbers, as weather and disease still have the greatest effect on short term and local population levels. There have been significant increases in citizen aquaculture efforts to grow oysters, and this should continue.
- Counteracting the devastating impacts of oyster diseases is the most important issue. 2002 was the third year of significant drought conditions, salinities were high, and oyster disease impacts were severe throughout Virginia and almost all of Maryland. These conditions were reversed in 2003 and 2004, as record rainfall lowered salinities to the point that oyster mortalities occurred in many areas.
- Clutch is currently limited to shucked, fresh shell and to available deposits of fossil shell.
- Fossil shell mining permits have been difficult to obtain for both States, and permit

requirements have reduced the potential for success.
- There will be a significant shortage of Chesapeake Bay oysters Baywide at least through 2007, which will severely impact the oyster industry.

Additional Efforts
There has been significant progress in habitat restoration with the increased funding from partnerships, such as the Virginia Oyster Heritage Program. Federal partners including the Army Corps of Engineers, National Oceanic and Atmospheric Administration (NOAA), and EPA, as well as State and private sources have contributed significant levels of funding.

At least 150 acres of harvest area and 10 sanctuary reefs will be required per year to meet this commitment. Dependable and reasonably priced sources of oyster reef building and clutch materials must be located for the restoration efforts to continue.

Acres of harvest area restored
2937

Acres of sanctuary reefs restored
82

1.1.2 -
By 2002, develop and implement a strategy to achieve this increase by using sanctuaries sufficient in size and distribution, aquaculture, continued disease research and disease-resistant management strategies, and other management approaches.

Marine Resources Commission -

Year: **2004**

Approach to Implementation
The Baywide Oyster Plan has been adopted by the Chesapeake Bay Program. The plan can be viewed at *www.chesapeakebay.net* . The plan also builds upon the scientific and Baywide consensus that 10% of the available oyster grounds be dedicated and restored for oyster sanctuaries (primarily 3-dimensional reefs) and the remainder restored for oyster production.

The development of this plan is a coordinated effort among all Bay partners.

State Role
State government participants include: DEQ, MRC and VIMS.

This is a Baywide commitment, with many State, federal, and private partners committing to the effort.

Progress/Outlook

The current native oyster restoration strategy is a long-term strategy (decades to generations), which will require significant clutch restoration efforts for the entire period.

Additional Efforts

1.2 - Exotic Species

1.2.1 -

In 2000, establish a Chesapeake Bay Program Task Force to: 1) Work cooperatively with the U.S. Coast Guard, the ports, the shipping industry, environmental interests and others at the national level to help establish and implement a national program designed to substantially reduce and, where possible, eliminate the introduction of non-native species carried in ballast water; and 2) By 2002, develop and implement an interim voluntary ballast water management program for the waters of the Bay and its tributaries.

1.2.2 -

By 2001, identify and rank non-native, invasive aquatic and terrestrial species, which are causing or have the potential to cause significant negative impacts to the Bay's aquatic ecosystem. By 2003, develop and implement management plans for those species deemed problematic to the restoration and integrity of the Bay's ecosystem.

Department of Game and Inland Fisheries -

Year: **2004**

Approach to Implementation

1. Address invasive species issues in accordance with guidance from the Virginia Invasive Species Council, and as funding is secured for these activities.
2. Develop statewide and regional management plans for high-priority species.
    - Develop a model invasive species management plan.
    - Develop generic recommendations for regional approaches to invasive species management.
    - Develop a framework for future management plans.
3. Obtain funding for regional pilot projects; *i.e.*, Mid-Atlantic Aquatic Nuisance Species Panels, Baywide management plans, and ballast water treatment.
4. Develop and implement prevention and control programs including a Baywide management

plan.

State Role

The General Assembly in 2003 established the Virginia Invasive Species Council as an executive policy council to provide state leadership and oversight regarding invasive species, and to prepare a Virginia invasive species management plan. The Council consists of nine members including the Secretary of Natural Resources and representatives of DACS, DCR, VIMS, MRC, DOF, DGIF, DOH, and DOT. The enacting legislation also called for establishment of an advisory committee of stakeholders to assist the Council in their deliberations. Staff support for the Council and for the Advisory Committee is provided by DCR.

Progress/Outlook

- For the "Invasive Species in the Chesapeake Bay Watershed Conference" held in May 2002, representatives from Virginia agencies and universities developed a preliminary list of the current and potentially most problematic invasive species in Virginia. The five species designated as most currently problematic include Asiatic clam, blue catfish, hydrilla, phragmites, and purple loosestrife. The Asian Swamp eel, Canada goose, flathead catfish, giant salvinia, grass carp, mute swan, nutria, West Nile virus and tiger mosquito, and zebra mussel were also identified as current or potential invasive threats by Virginia representatives at the conference.
- At the same conference, workgroups developed functional models for management plans addressing the six species identified collectively as the six most significant invasive species in the watershed, including phragmites, purple loosestrife, water chestnut, mute swan, nutria, and zebra mussel.
- The General Assembly in 2003 enacted the Virginia Nonindigenous Aquatic Nuisance Species Act, which authorizes DGIF to conduct operations and measures to suppress, control, eradicate, prevent, or retard the spread of any nonindigenous aquatic nuisance species, and further authorizes DGIF to cooperate with federal, state, or local agencies or authorities in pursuance of this objective. The Act lists zebra mussels, quagga mussels, and snakehead fishes as nonindigenous aquatic nuisance species, and authorizes DGIF to promulgate regulations as necessary to carry out the provisions of the article including, but not limited to, designation of other species as nonindigenous aquatic nuisances. The law also specifies that such activities are subject to appropriation of general funds specifically for this purpose, or receipt of funds designated for this purpose from local governments or other interests.
- The Virginia Invasive Species Council met in December 2003, and again in September 2004, to coordinate interagency programs and activities regarding invasive species documentation, control, and eradication. At the first meeting of the Council, DGIF staff presented a program outlining the biology, adverse ecology, and economic impacts of zebra mussels; the species' history of invasion in the United States; and the current status of the zebra mussel infestation in Prince William County and of the interagency effort to eradicate that population if possible. In addition, the Advisory Committee to that Council has been appointed; DGIF is represented on both the Council and the Advisory Committee.
- DGIF worked with other states and federal agencies to develop the Chesapeake Bay Regional Zebra Mussel Management Plan. The final report was completed in November 2003, and was submitted to the Chesapeake Bay Program's Invasive Species Workgroup of the Living

Resources Subcommittee, hopefully to serve as a blueprint for states to outline their goals and objectives for management of this invasive exotic species, particularly in the Chesapeake Bay area.

- The Millbrook Quarry Zebra Mussel ad-hoc workgroup, led by DGIF, has continued to address the infestation with zebra mussels of Millbrook Quarry in Prince William County. Baseline assessment of the hydrology, geology, and water chemistry of Millbrook Quarry has been completed, as has the qualitative evaluation of that zebra mussel infestation. There is workgroup consensus to pursue eradication of the infestation. Review of proposals submitted in response to an emergency procurement solicitation in August 2003 had to be terminated due to lack of funding for the project. DGIF has since secured grants and guarantees of funds adequate to reinitiate the procurement process, and anticipates soliciting proposals for eradication of the Millbrook Quarry zebra mussel infestation in the near future.
- Significant effort has been directed at preventing snakehead fish from becoming an established exotic species in Virginia. In addition to passage of the Virginia Nonindigenous Aquatic Nuisance Species Act discussed above, DGIF enacted a regulation prohibiting the possession of snakehead fish in Virginia. The U.S. Fish and Wildlife Service also adopted a regulation prohibiting importation of live snakeheads into the U.S., and prohibiting interstate transport of live snakeheads without permits issued for scientific or educational purposes.
- DGIF established a Snakehead Fish Incident Management Team to coordinate the department's activities regarding this species. Two interjurisdictional meetings (Virginia; Maryland; Washington, D.C.; Potomac River Fisheries Commission; Interstate Commission on the Potomac River Basin; U.S. Fish and Wildlife Service; and U.S. Geological Survey) were held to enhance interagency coordination.
- DGIF developed and implemented a snakehead incident response protocol to handle inquiries from anglers, and we established a toll free number to facilitate reporting of snakehead collections. Brochures to distinguish between the snakehead and similar appearing native species (eels and bowfin) were developed and distributed to the public, and were posted at marinas and on the DGIF website. Pertinent information was widely distributed to the press.
- All snakehead fish collected to date have been submitted for genetic testing to assess potential sources of these individuals, and law enforcement investigation of potential avenues of introduction is continuing.
- Continuing sampling of the Potomac River and tributaries, and reports by anglers and other citizens, have documented 20 snakeheads in a 15-mile reach of the Potomac River watershed. These fish ranged from a 3-inch-long juvenile to a 6-year-old adult exceeding 2 feet in length. Five females with eggs have been recovered to date. Recent capture of a young-of-the-year juvenile in Dogue Creek confirms the existence of a reproducing population of the northern snakehead fish in the Potomac River watershed. Also, populations of northern snakeheads recently have been confirmed in PA and MA.
- Eradication or control of some established exotic species is feasible. Prevention of accidental introductions of others will be very difficult, and deliberate illegal introductions of some species are likely.

Additional Efforts

Blue catfish are found in the tidal James, Pamunkey, Piankatank, Mattaponi, and Rappahannock rivers. They are becoming an important trophy fishery in those waters. Extensive summer sampling

of blue catfish has not documented any predation on juvenile shad. When fish are found in the stomachs, the primary components are smaller blue catfish, white perch, and gizzard shad. *Corbicula* (another exotic species) were prevalent food items. On the Mattaponi, blue catfish may be important predators on native mussel populations. Blue crabs have also been observed in stomachs.

1.3 - Fish Passage and Migratory and Resident Fish

1.3.1 -
By June 2002, identify the final initiatives necessary to achieve our existing goal of restoring fish passage for migratory fish to more than 1,357 miles of currently blocked river habitat by 2003 and establish a monitoring program to assess outcomes.

Department of Game and Inland Fisheries -

Year: **2004**

Approach to Implementation

- Shape federal legislation, regulations and programs
- Participate in Fish Passage Task Group of the Chesapeake Bay Program's Non-Tidal Habitat Workgroup
- Obtain funding for programs supporting fish passage implementation and monitoring

The state takes a coordinated approach to its participation on the Fish Passage Task Group of the CBP's Non-tidal Habitat Work Group. The state maintains a statewide fish passage impediment database that aids in the site selection process. Priorities are determined by selecting those projects that will provide the greatest benefits to the resident and migratory fish stocks, while maximizing habitat restoration. A GIS coverage of the anadromous fish spawning and nursery areas and migration routes is being further developed for major watersheds through federal/state interagency review of the data layers initially created by the state. The state has a GIS tool for the Rappahannock River Basin using state and federal data layers. GIS tools will continue to be used in the site selection process.

The state monitors the Boshers Dam fishway on the James River and monitors fish passage on the Rappahanock River to evaluate the recent breach in Embrey Dam. The state also monitors the success of the Boshers Dam fishway by sampling the juvenile shad population to determine the ratio of wild vs. stocked fish. Juvenile sampling is also now conducted on the Rappahanock River for the same purpose.

State Role
State government participants include: DGIF, MRC, VCU and VIMS.

Virginia's portion of the ten-year Bay-wide restoration goal for passage of 1,357 miles is 415.5

miles. A coordinated approach is being taken to achieve that goal.

In addition to fish passage, the state also is leading the effort to reintroduce American shad to historical spawning and nursery grounds in tributaries of the Bay through a multi-state and federal agency hatchery stocking and monitoring program. Additional state activities related to the goal include stocking and data analysis.

Progress/Outlook

The Ten-Year goal originally was set to end in 2003 but the Chesapeake Bay Program has moved the new ending date to 2004 to accomplish projects throughout the Bay watershed that have been delayed for various reasons. Achievement of Virginia's portion of the "Ten-Year" Goal of 415.5 miles (now by the end of 2004) is likely.

- Abutment Dam fish passage project on the Appomattox River was completed in 2003 and opened for operation in spring 2003; reopened 1.3 miles up to Brasfield Dam (state and federal funding).
- Embrey Dam on the Rappahannock was breached in 2004 and is now passable. Embrey will be completely removed by 2005 (federal funding from this point out); reopened 106 miles of the Rappahannock and Rapidan rivers.
- Brasfield Dam (Appomattox/FERC) fish elevator is being completed in the fall of 2004 for spring 2005; this project reopens 120.1 additional miles.
- In 2003, the Town of Orange completed a Denil fishway on their rebuilt water supply dam on the Rapidan River currently for resident fish. This project reopened 23 miles of habitat that is not yet accessible by anadromous species. With Embrey Dam removed only the Rapidan Dam at Rapidan stands in the way.
- In the fall of 2004, the City of Harrisonburg is removing the remainder of McGayhesville Dam on the South Fork of the Shenandoah River. This will improve resident fish and catadromous American eel passage. Over 30 miles of the South Fork Shenandoah and its tributaries will be reopened although not accessible by anadromous fishes due to the natural barrier at Great Falls on the Potomac River.

Final initiatives to complete the 2003 Ten-Year Goal (now 2004) have been identified. Several projects on tributaries are being explored at dams and road culverts (removals, fishways).

Virginia had reopened 37 miles of prior to the setting of the ten-year goal via fish passage projects at Walker's, Manchester, Brown's Island, and Harrison Lake Dams. Since 1993, an additional 260.9 miles have been reopened (William's Island, Boshers, Embrey, Chandler's, Harvell, and Abutment dams), for a total of 297.9 miles. Virginia has identified the final initiatives necessary to complete its portion of the ten-year goal. The fish lift project at Brasfield Dam (FERC license) on the Appomattox will be completed by the end of 2004 and will add 120.1 miles bringing the Virginia total to 418.0 miles, thus satisfying the Virginia commitment.

A total of 22 species of fish have been documented at the Boshers Dam fishway including the primary target species American shad and blueback herring (few). Absolute numbers of American shad have been relatively low but increases are expected in future years. American shad, hickory shad, blueback herring and striped bass were all documented upstream of the breach in Embrey Dam

in spring 2004. Most of the target species, although low in absolute numbers, have used the Harvell Dam fishway in past seasons. Unfortunately, the Harvell fishway was not operated in 2004 due to extenuating circumstances stemming from the licensee facing revocation of their FERC license because of a long history of non-compliance on several issues.

American shad stocking efforts continue on the James River (Pamunkey brood source) above Boshers Dam and efforts were expanded to include the Rappahannock River (Potomac brood source) above Embrey Dam. To date 107.5 million tagged shad fry have been released: James - 78.4 million, Pamunkey – 24.2 million, Rappahannock – 4.5 million (2003 initial year), and Potomac - 0.4 million (2004 initial year). Adult shad of hatchery origin have now reached maturity and have been returning to the James and Pamunkey rivers since 1997. Although a high percentage of the adults found in the James River are of hatchery origin, the percentage of hatchery fish has dropped over the past two years – indicating natural reproduction of shad is occurring in this river system.

Wild juvenile shad were documented above Boshers Dam in 2000, 2001 and 2002 and 2004 by the Fish Passage and Shad Restoration programs. The tidal Rappahannock is also sampled for juvenile shad and although hatchery fish are numerically dominant some wild fish have been identified.

Additional Efforts
No additional efforts are required to identify the final projects necessary to meet the ten-year goal (extended into 2004).

The monitoring program for the Boshers Dam fishway will continue to be fine-tuned, and the data analyzed to learn more about the target species. Hopefully, a monitoring plan for Harvell Dam will finally be developed by the licensee unless their license is revoked by FERC and the dam possibly removed. The state will implement a monitoring program for the Abutment fishway if adequately staffed. The state has expanded its Rappahannock River anadromous monitoring efforts to include upstream sites to monitor the success of the removal of Embrey Dam.

1.3.2 -
By 2002, set a new goal with implementation schedules for additional migratory and resident fish passages that addresses the removal of physical blockages. In addition, the goal will address the removal of chemical blockages caused by acid mine drainage. Projects should be selected for maximum habitat and stock benefit.

Department of Game and Inland Fisheries -

Year: **2004**

Approach to Implementation
Same approach and techniques as reported in 1.3.1.

State Role
State government participants include: DGIF, MRC, VCU, and VDOT.

The state will continue to participate in the Bay Program and coordinate its fish passage efforts through the Fish Passage Task Group of the Non-Tidal Habitat Workgroup. Virginia also will continue the American shad stocking effort to supplement wild spawning.

Progress/Outlook
Virginia is participating in the Chesapeake Bay Program's effort to establish a new fish passage goal for the next several years. The 1993 ten-year goal's ending date was moved to 2004. The new fish passage goal should begin in 2005 and extend 10 years out. The final language is near completion. The new goal includes a numeric goal in terms of mileage to be reopened (1000) and the number of projects to be completed (100) as well as the methods for prioritizing projects. The new goal also addresses the need to monitor stock utilization of reopened waters and population recovery.

In Virginia, several potential projects are being considered in the James, Rappahannock, and York basins. For example, plans are being developed to explore the removal of Woolen Mills Dam on the Rivanna River, which is the first blockage on that river. The Rappahannock Basin Impediment Survey conducted by the state identified several dams and road culverts that may require fish passage. Scheduled projects such as the removal of Embrey Dam will lead to exploration of upstream projects such as the Rapidan Dam on the Rapidan River that is a significant tributary of the Rappahannock with known historical use by migratory fishes.

Virginia has no known chemical blockages that currently impede migration of target species.

Additional Efforts
Additional identification of potential sites is needed followed by setting implementation schedules and securing funding sources to conduct the identified projects.

1.3.3 -
By 2002, assess trends in populations for priority migratory fish species. Determine tributary-specific target population sizes based upon projected fish passage, and current and projected habitat available, and provide recommendations to achieve those targets.

Marine Resources Commission -

Year: **2004**

Approach to Implementation
Share and synthesize information; implement restoration programs:

- Fish Passage Program (coordinate fishway construction, dam removal, fishway and river

monitoring and planning).
- American Shad Restoration Program (fry stocking; structured cooperation among agencies and institutions; state and federal funding.)
- Modernize estimates of current and projected population sizes.
- Continue relative abundance estimates of alosine fish in the fall zone.
- Continue striped bass status assessment annually.
- Development and modification of interstate and Chesapeake Bay Fishery Management Plans.

Previous efforts to characterize the biological health or stock status of striped bass, American shad and river herring (blueback herring and alewife) will continue in 2004 and beyond. Of the four species, all are managed by an interstate (Atlantic States Marine Fisheries Commission) and Chesapeake Bay management plan, but only striped bass is considered as a restored population; the others (alosines) are considered as moderately to severely depleted. Similarly, a clear trend in abundance or exploitation only exists for striped bass. Since landings or harvest data no longer provide an adequate measure of relative abundance for these species (striped bass is under quota, American shad harvest is under a moratorium and herring harvests are sporadic), other methods, such as mark-recapture, need to be continued and improved. Efforts to modernize estimates of current and projected population sizes and habitat availability continue, as past estimates of system- and stock-specific carrying capacities and spawning acreage, for these important species, is dated (1987). Health of the Virginia "stock" of striped bass will continue to be assessed each year, using estimates of survival from Bay-wide mark-recapture programs. Virginia will need to continue its programs for monitoring relative abundance of striped bass juveniles, American shad juveniles and adults and river herring juveniles, at a minimum. Owing to the moratorium on American shad, special programs will be needed to develop estimates of adult abundance and potential fishing mortality rate targets, perhaps on a tributary-specific basis.

State Role

State government participants include: DGIF, MRC and VIMS.

State programs are adequate and necessary (Atlantic States Marine Fisheries Commission plan compliance requirements) for monitoring the status of the striped bass stock. Recent federally-funded state programs to assess relative abundance and relative exploitation riverine stocks of American shad will need to continue and be augmented by projects to estimate actual adult stock abundance, in order to establish first-order target fishing mortality rates. The state and federal agencies will work towards the development of modern estimates of tributary-specific target stock sizes for American shad and river herrings, but this process will be hampered by a lack of knowledge about current stock sizes. For example, the state has been monitoring the relative abundance of migratory fishes at the fall line of Virginia's tributaries for several years. While this data gauges inter-annual abundance trends it cannot be used to estimate actual stock sizes.

Progress/Outlook

- American shad are under a harvest moratorium on the Bay and its tributaries. In 2005, the moratorium will extend to ocean waters as well. American shad fry are stocked annually in

the James, Pamunkey and Rappahannock rivers to enhance the population. American shad numbers continue to increase annually at Boshers fishway.
- A clear trend in actual abundance or exploitation only exists for striped bass. Striped bass stock sizes for Virginia are at an all-time high, based on several surveys.
- Relative abundance estimates of alosine fish in the fall zone continue.
- River herring (alewife and blueback herring) are considered stable at a low level of abundance, with little directed fishing effort on these stocks.
- Restoration of migratory fish populations possible, but requires long-term commitment.

Absent current knowledge about the stock status of American shad and the river herrings, a considerable effort will be needed to develop approximate tributary-specific target stock sizes for American shad and river herrings, based on projected fish passage. The Boshers Dam fishway is monitored by the state to estimate the number of American shad moving into the upper James River annually. This type of information may prove to be a useful tool in tracking the progress of restoration efforts. Current knowledge of the status of the Bay-wide stock of striped bass and projected fish passage acreage still will not afford a clear-cut opportunity to devise tributary-specific targets for this species; as striped bass is less dedicated to specific tributaries, in comparison to the alosine species.

Additional Efforts

- A considerable effort is needed to develop approximate tributary-specific target stock sizes for American shad and river herrings, based on projected fish passage.
- Striped bass are less dedicated to specific tributaries than alosine fish making it more difficult to set tributary-specific targets for striped bass.
- Restoration of commercial fisheries is questionable and highly dependent on support of harvesters for restoration programs: - Offshore American shad harvest will be eliminated in 2005(required by Atlantic States Marine Fisheries Commission). - A quantified assessment of river herring stock sizes is needed.
- In the near future, fishery independent programs must be developed to ascertain reliable measures of American shad and river herring abundance and exploitation levels because there is no fishery-dependent data source. Of these four species, knowledge of the health or stock status of the alosines needs significant improvements. It will take several years and additional, dedicated programs to achieve a sound perspective on the biological status of these species.

1.3.4 -
By 2003, revise fish management plans to include strategies to achieve target population sizes of tributary-specific migratory fish.

Marine Resources Commission -

Year: **2004**

Approach to Implementation

Virginia actively participates in the development and modification of interstate and Chesapeake Bay Fishery Management Plans for these species, but the Chesapeake Bay plans would serve to house any strategies devised for achieving target population (stock) sizes. Since the Virginia in-river and Chesapeake Bay fisheries for American shad stocks are under moratorium, any initial attempts to devise more than highly approximate target levels of abundance depend on current and needed programs designed to obtain even relative indicators of American shad tributary-specific abundance. By 2005, there will be a phase-out of the mixed-stock fishery for American shad along Virginia's coast, as mandated by the Interstate FMP, in an attempt to improve the health of in-river stocks. River herring (blueback herring and alewife) stocks are considered stable at a low level of abundance, with little directed fishing effort on these stocks, but a quantified assessment of stock sizes does not currently exist. Striped bass stocks are considered as recovered and are fished according to harvest targets set annually by the interstate plan. Striped bass abundance in Virginia is at an all-time high, based on several surveys.

State Role

State government participants include: DGIF, MRC, ODU, VCU and VIMS.

The state has a coordinated approach to monitoring programs that are mandated by the relevant interstate fishery management plans or recommended by the Chesapeake Bay fishery management plans. State agencies and universities conduct the monitoring programs. Results of these monitoring efforts are used in annual determinations of harvest levels for recreational and commercial fisheries for striped bass, to assess the status of American shad stocks, and provide necessary revisions of the Chesapeake Bay fishery management plans. The Chesapeake Bay fishery management plans would be appropriate for including any necessary strategies designed to achieve target stock levels for these important species.

Other data from state long-term monitoring of the relative abundance of migratory fishes at the fall line may be useful for inter-annual trend analysis.

Progress/Outlook

The 2003 commitment is especially relevant to American shad since these stocks are under restoration, a Chesapeake Bay-wide moratorium, and are subject to an unknown level of exploitation by a coastal fishery. Revising management plans to implement the scheduled reduction in coastal fishing effort may or may not serve to significantly improve current American shad population sizes. Ultimately, a total ban on fishing for American shad in Virginia coastal waters, combined with in-river state restoration efforts will constitute the revised fishery management plan to achieve the targets for American shad. As a result of the current harvest moratorium, we cannot apply traditional stock assessment methods that employ fishery-dependent data to the problem of setting restoration targets. In addition, we cannot set targets that require fishery-dependent data to measure achievement. In the near future fishery-independent programs must be developed to ascertain

reliable estimates of American shad abundance and river herring abundance and exploitation levels. However, we currently do not have the resources necessary to support this type of research.

Additional Efforts

A target-setting workshop for American shad was held in 2001. Participants included scientists and managers from Virginia State agencies and universities and stock assessment experts from outside the Commonwealth. The workshop examined independent technical methods to set meaningful restoration targets and produced a published document that details these approaches and recommends methods to set meaningful targets. The workshop represented only the first step towards developing appropriate strategies to achieve target stock sizes, where necessary, on a species-specific basis.

1.4 - Multi-species Management

1.4.1 -
By 2004, assess the effects of different population levels of filter feeders such as menhaden, oysters and clams on Bay water quality and habitat.

Marine Resources Commission -

Year: **2004**

Approach to Implementation

Utilize the NOAA Chesapeake Bay Fishery Ecosystem Plan to define ecosystem linkages and effects of population levels of filter feeders.

State Role

State government participants include: MRC and VIMS.

Virginia continues to monitor the stock status of key filter feeders. In turn, changes in abundance (for example) of key filter feeders can be associated, to an extent, with changes in water quality and habitat.

Progress/Outlook

- Zooplankton Index of Biotic Integrity program funded (EPA/CBP).
- Continuing SAV distribution annual survey (EPA/CBP).
- CBP Scientific Technical Advisory Committee workshop held on suspension-feeder modeling, and modeling funds allocated for 2002 (EPA/CBP).

- Costs of establishing species inventory and interactions are extensive.
- Accuracy and efficiency of stock assessments will be improved.

Data collection is ongoing, and historical data exist from several sources, to assist in assessing these inter-relationships and afford a broad-based characterization of the variability among these three components of ecosystem dynamics.

Additional Efforts

Efforts will be needed to collect and condense historical data sets. Comprehensive shellfish standing stock estimates (such as those previously accomplished) will be necessary to delineate cause and effect relationships among physical, chemical and biological components.

1.4.2 -
By 2005, develop ecosystem-based multi-species management plans for targeted species.

Marine Resources Commission -

Year: **2004**

Approach to Implementation

1. Utilize the NOAA Chesapeake Bay Fishery Ecosystem Plan to define ecosystem linkages and the priorities for multi-species plan development.
2. Continue development, implementation and review of multispecies Fisheries Management Plans (FMP).

State Role

State government participants include: MRC and VIMS.

Virginia has initiated several approaches towards the development of ecosystem-based multi-species plans. The state has been funded by the Environmental Defense Fund to assess existing information on trophic-level interactions, and preliminary work on the simulation of a multi-species (finfish) model, as part of a Chesapeake Bay Stock Assessment Committee (NOAA) funding, has been completed. Additionally, the Chesapeake Bay Living Resources Subcommittee's Fisheries Management Planning and Coordination Workgroup has initiated discussions on multi-species plan formulation.

Progress/Outlook

Preliminary analysis of fisheries data with strategy tools identified:

1. Baywide multi-species monitoring program in progress (NOAA); Juvenile finfish trawl survey (CHESFIMS) conducted by Chesapeake Biological Labs; Adult finfish trawl survey (CHESMAP) conducted by VIMS.
2. Modeling (single species and multi-species) (EPA/CBP, NOAA/CBP); Entering data for ecosystem model (ECOpath with ECOsim); Multi-species assessment model under development.
3. Fishery Ecosystem Plan was completed in 2003.

Additional Efforts

1. Affords better estimate of stock size and productivity of many species.
2. Need to assess benefits of desired biomass of predator and prey populations.
3. Able to use models to include more dynamic species interactions.

1.4.3 -
By 2007, revise and implement existing fisheries management plans to incorporate ecological, social and economic considerations, multi-species fisheries management and ecosystem approaches.

Marine Resources Commission -

Year: **2004**

Approach to Implementation

- Expand the scope of fisheries management planning.
- Coordinate interests of the Chesapeake Bay Program partners and identify emerging fishery interests.

Implementation depends on the soundness of the biological foundation of the plan. For example, it will be easier to incorporate these considerations into a multi-species plan for biologically stable species. The choice of target species will also determine the success in implementing such a plan.

State Role

State government participants include: MRC.

The state standards for preparing single species fisheries management plans include consideration of social and economic factors. Incorporation of these factors and ecological considerations into a

multi-species plan will entail extensive outreach to stakeholders, but efforts may be complicated by existing or new requirements associated with interstate or federal mandates.

Progress/Outlook
Dependent on the development of ecosystem-based multi-species management plans for targeted species.

Additional Efforts
These will be determined as progress on plan development occurs.

1.5 - Crabs

1.5.1 -
By 2001, establish harvest targets for the blue crab fishery and begin implementing complementary state fisheries management strategies Baywide. Manage the blue crab fishery to restore a healthy spawning biomass, size and age structure.

Marine Resources Commission -

Year: **2004**

Approach to Implementation
- Manage to augment the spawning stock:
- Through sustained reductions in harvest or effort.
- Through maintenance of long term spawning sanctuaries.
- Protect and restore submerged aquatic vegetation to:
- Reduce blue crab natural mortality events.
- Coordinate effective management strategies to:
- Continue involvement and education of all stakeholders.
- Assess effectiveness of existing regulations.
- Complement other Chesapeake Bay jurisdictions' conservation measures.

Harvest targets and thresholds have been adopted for the Chesapeake Bay population of blue crabs. Each bay jurisdiction has maintained regulatory measures, established during the 2001-03 period, to reduce harvest by 15 percent to achieve a doubling of the crab spawning stock.

State Role
State government participants include: MRC and VIMS.

Virginia, Maryland and the Potomac River Fisheries Commission have adopted fishing mortality rate

target and threshold as well as a stock biomass target and threshold. These measures will guide management in the future.

Progress/Outlook

- New harvest reduction measures established in 2001 and 2002 were continued in 2003 and 2004.
- The Baywide target of a 15% reduction in harvest by 2003 has been achieved. The fishing mortality rate has declined from 0.9 (the average 1997-99 baseline) to 0.8 (as of 2003), with the target established as 0.7, but the goal of achieving a doubling in the spawning stock has not occurred.
- Virginia has met its 15% reduction target for 2003. Additional expansion of summer spawning sanctuaries is complete. 2003 data indicate a slight increase in the spawning stock size, compared to a period of very low abundance during the past decade.
- Assuming optimal environmental conditions, spawning stock should double in 3-4 years.
- Funding reductions at VMRC may lead to decreased enforcement efforts, which may result in increased illegal harvesting. Therefore, overall crab harvest limits might not be maintained.

Achieving the target fishing mortality rate (F=0.7) may require more than a 15% reduction in the Bay-wide harvest of blue crab, if current low abundance levels decline further. It is evident that harvest reduction strategies, alone, may not afford the best approach for achieving the target fishery mortality rate. Management strategies that will augment spawning or abundance (such as closed areas or sanctuaries), in conjunction with harvest effort reductions will be required to effectively reduce the fishing mortality rate.

Additional Efforts

Managers and the harvesting and processing sectors associated with the blue crab fishery will need detailed economic information on the benefits and detriments associated with gear-specific or market category-specific modes of harvest. In conjunction with the economic issues, the biologists need to develop safe levels of take from the various peeler and hard crab fisheries.

An analytical assessment of the Chesapeake stock of blue crabs is expected to be completed by the end of 2004 and may result in a revision of targets and goals necessary for appropriate conservation and management of the Chesapeake stock of blue crabs.

Vital Habitat Protection and Restoration

2.1 - Submerged Aquatic Vegetation

2.1.1 -

Marine Resources Commission -

Year: **2004**

Approach to Implementation
This was an Executive Council commitment by adoption of Chesapeake 2000 Agreement. Bay Program Partners have set a new bay grass restoration goal of 185,000 by 2010.

State Role
N/A see commitment 2.1.2 and commitment 2.1.3

Progress/Outlook
N/A see commitment 2.1.2 and commitment 2.1.3

Additional Efforts
N/A see commitment 2.1.2 and commitment 2.1.3

Acres of SAV restored
64709

2.1.2 -
By 2002, revise SAV restoration goals and strategies to reflect historic abundance, measured as acreage and density from the 1930s to the present. The revised goals will include specific levels of water clarity that are to be met in 2010. Strategies to achieve these goals will address water clarity, water quality, and bottom disturbance.

Marine Resources Commission -

Year: **2004**

Approach to Implementation
Bay Program Partners have set a new bay grass restoration goal of 185,000 acres by 2010. A Chesapeake Bay Program SAV Strategy document has been developed entitled "Strategy To Accelerate The Protection And Restoration of Submerged Aquatic Vegetation In The Chesapeake Bay".

This strategy has four essential elements which are mutually complementary and will be pursued simultaneously:

1. For areas where SAV should grow, the CBP partners will complete the establishment of water quality criteria and water quality standards, and thereafter implement them to achieve

the water quality necessary to provide for SAV recovery in areas designated for that use;
2. For areas where SAV grows, protect existing SAV beds from destructive anthropogenic activities and invasive species;
3. For areas where water quality is suitable but where SAV does not yet grow, accelerate SAV restoration by planting 1,000 acres of new SAV beds by December 2008; and
4. Strengthen the scientific and public support for SAV protection and restoration through enhanced SAV research, citizen involvement and education.

State Role

State government participants include: DCR, DEQ, MRC and VIMS.

Agencies most involved in efforts necessary for SAV restoration and protection include the MRC (State-owned submerged lands management), VIMS (transplantation research and monitoring), DCR (Non-point source pollution management) and DEQ (Point source pollution management).

Progress/Outlook

Total acreage of SAV Bay wide in 2003 was estimated to be 64,709. The decrease appears to be the result of substantial reductions in widgeongrass in the lower and mid-bay regions. In addition, major declines in freshwater species occurred in the upper portion the Potomac River and Susquehanna region likely due to persistent turbidity resulting from rain occurring throughout the spring and summer that may have contributed to a very early decline, well before Hurricane Isabel affected Chesapeake Bay.

The 2002 SAV survey of the CBP documented a peak abundance of 89,658 acres of SAV throughout the entire Bay and tributaries. In 2001, the survey documented 85,415 acres of SAV. This is up from the 41,397 acres of SAV that existed in 1978 the first time a complete survey was conducted.

Additional Efforts

- Restoration will be dependent on improvements in water quality.
- Restoration and protection efforts involve management of State owned submerged lands (MRC), transplantation research and monitoring (VIMS), point source pollution management (DEQ) and non-point source management (DCR).
- Strategy implementation in part through shallow water management plan under development in response to House Joint Resolution 765 (2001 Session).
- Planting and transplantation efforts will be dependent on research and development of funding sources as well as support of voluntary programs.
- Continuation of annual monitoring essential.

2.1.3 -
By 2002, implement a strategy to accelerate protection and restoration of SAV beds in areas of critical importance to the Bay's living resources.

Marine Resources Commission -

Year: **2004**

Approach to Implementation
See Commitment 2.1.2.

State Role
See Commitment 2.1.2.

Progress/Outlook
Total acreage of SAV Bay wide in 2003 was estimated to be 64,709. The decrease appears to be the result of substantial reductions in widgeongrass in the lower and mid-bay regions. In addition, major declines in freshwater species occurred in the upper portion the Potomac River and Susquehanna region likely due to persistent turbidity resulting from rain occurring throughout the spring and summer that may have contributed to a very early decline, well before Hurricane Isabel affected Chesapeake Bay.

The 2002 SAV survey of the CBP documented 89,658 acres of SAV throughout the entire Bay and tributaries. This was the highest level reached since 1978, when 41,397 acres were reported the first time a complete survey was conducted.

During the Fall 2003 and Spring of 2004 research restoration efforts by VIMS resulted in the seeding of 25.5 acres of eelgrass in the Piankatank River. Also, in the past year VIMS planted test plots in the York River totaling 1 acre, and 1 acre in the James River near Hopewell in a freshwater tidal area.

For the same period, VIMS conducted similar research efforts in Virginia's Coastal Bays. In the Fall of 2003, 17 acres were planted with eelgrass seeds. In the Spring of 2004, 35 acres were planted with eelgrass seeds.

Additional Efforts
See Commitment 2.1.2.

2.2 - Watersheds

2.2.1 -
By 2010, work with local governments, community groups and watershed organizations to develop and implement locally supported watershed management plans in two-thirds of the Bay watershed covered by this Agreement. These plans would address the protection, conservation and restoration of stream corridors, riparian forest buffers and wetlands for the purposes of improving habitat and water quality, with collateral benefits for optimizing stream

flow and water supply.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

A taskforce was formed in 2002 to guide implementation. Members represent OSNR, DCR, CBLAD, DEQ, DOF, DGIF, VACO, VML, VA SWCD, VIMS, City of Chesapeake, Fairfax Co., Northern VA Regional Planning Commission, Canaan Valley Institute, Alliance for the Chesapeake Bay, Chesapeake Bay Foundation, and Friends of the Rappahannock. The Taskforce defined watershed management planning for Virginia and identified current watershed management planning efforts, as well as training and tracking needs for future watershed planning efforts.

State Role

DCR and CBLAD team effort.

Progress/Outlook

- Two guides were developed- *Local Watershed Management Planning in Virginia* and *Local Watershed Management Planning in Virginia: A Guide for Communities*
- Watershed Management Planning workshops were planned and conducted in partnership with the Virginia Institute for Innovative Governance, VA Tech
- Three workshops were conducted to introduce the guide to state agency staff. Letters of invitation were sent to agency Directors from the OSNR.
- Six workshops were conducted throughout the state for local governments and community watershed organizations
- Mini-grants will continue to be awarded to targeted groups with demonstrated capacity to successfully develop and implement a watershed management plan
- Virginia CWiC taskforce expanded to address all C2K commitments affecting local governments and CWOs to form Virginia Watershed Advisory Committee

Additional Efforts

In partnerships with the CBP CWiC Taskforce, and the National Parks Service, Rivers and Trails Conservation program, Virginia representatives have been working on developing Community Watershed Dialogues. These Dialogues will be conducted as a follow-up to previous watershed management planning workshops in localities that have requested further assistance with or expressed interest in developing watershed management plans. The NPS has hired two Watershed Coordinators that will provide assistance to state staff in working with localities to develop watershed management plans. Additionally, the CBP and NPS will be conducting a "Linking Land Use to Watershed Management Planning Workshop" targeting local governments.

Several localities have begun developing and implementing Watershed Management Plans, and are using the guidebooks for assistance. According to current records, approximately 21% of Virginia's portion of the Chesapeake Bay watershed is covered by watershed management plans. There are approximately 65 plans under development by localities for their local watersheds. (30 of these plans are all within Fairfax County, as the county is developing plans for each of the watershed within the jurisdiction.)

DCR will continue to promote watershed management planning as an effective method of achieving water quality goals as we move forward with the development and implementation of Tributary Strategies.

2.2.2 -
By 2001, each jurisdiction will develop guidelines to ensure the aquatic health of stream corridors. Guidelines should consider optimal surface and groundwater flows.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Virginia Natural Resource Agencies have set forth specific criteria through existing programs and initiatives. The tributary strategies steering committees, watershed forums (watershed conservation roundtables, commissions and councils) and local governments are implementing this commitment through these existing programs to include erosion and sediment control, stormwater and stream buffer ordinances and regulations.

State Role
State government participants include: CBLAD, DCR, DEQ, DGIF, DOF and VIMS.

Virginia agencies will continue to support local efforts through technical assistance and expertise in addition to implementing existing aquatic health related programs. Further, funding is made available when possible.

Progress/Outlook
State agencies are working to increase compliance with riparian buffer and NPS regulations. These efforts include streamlining, coordinating and clarifying programs wherever possible.

State agency representatives attended a Stream Corridor Restoration Goals Workshop on May 7, 2003 in Baltimore, Maryland. The purpose of the workshop, sponsored by the CBP Scientific and Technical Advisory Committee, was to introduce watershed management and stream corridor restoration to individuals whom may be responsible for implementing the goal. The workshop consisted of a morning session related to defining stream corridor restoration, watershed

management plans and the issues related to each jurisdiction. The afternoon session consisted of case studies regarding watershed management and jurisdictional breakouts to discuss the overall goal. In addition, the breakout sessions addressed the following:

- Defining stream corridor and stream corridor restoration
- Identifying minimum criteria for stream corridor restoration
- Measuring stream corridor restoration
- Tracking

Additional Efforts
Increased ability to achieve regulatory compliance will be needed to strengthen this commitment. In addition, increased funding will be needed for additional compliance personnel and local assistance grants.

2.2.3 -
By 2002, each jurisdiction will work with local governments and communities that have watershed management plans to select pilot projects that promote stream corridor protection and restoration.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Local governments, watershed forums and community watershed organizations (CWOs)have integrated this commitment into existing and new volunteer monitoring efforts, local water quality studies and educational projects. The Water Quality Improvement Fund (WQIF) and the Chesapeake Bay Small Watershed Grants Program have given localities limited resources to implement protection and restoration projects.

State Role
State government participants include: CBLAD, DCR, DEQ, DGIF, DOF and VIMS.

Virginia is aggressively seeking out sound projects that promote watershed planning and stream corridor protection and restoration. Continued educational and training programs are needed to increase local awareness of volunteer opportunities and increase available funding. This is being accomplished through existing networks of watershed forums, localities and conservation watershed organizations.

Progress/Outlook

Localities, along with state agencies, continue to make strides in areas of stream corridor, wetlands and sensitive land area restoration and protection. Increased and better mitigation practices are being implemented, BMPs are being established in areas where none previously existed, and restoration projects are being implemented through cost share programs and WQIF. However, most of these are not being conducted under a Watershed Management Plan (WMP). Virginia is working with localities and other parties to identify pilot projects in areas covered by existing WMPs.

Additional Efforts
Extensive effort is needed to continue promoting the benefits of stream corridor protection and restoration to localities. Emphasis should be placed on concepts of increased quality of living and economic benefits associated with areas of greater environmental quality. Further, strong watershed planning tools are needed to assist local interest in this effort.

2.2.4 -
By 2003, include in the "State of the Bay Report," and make available to the public, local governments and others, information concerning the aquatic health of stream corridors based on adopted regional guidelines.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The implementation of this commitment is being fulfilled through water quality, SAV and benthic monitoring efforts by numerous local, state, and federal agencies along with citizen and environmental groups monitoring activities. In addition, universities, private consulting firms, state and federal agencies have conducted environmental studies of tributaries in the Chesapeake Bay Watershed. This information will be compiled for public dissemination.

State Role
All state government agencies and institutions with relevant information are participants in this process.

In the area of data gathering and analysis state agencies are working with localities and environmental organizations to develop consistent tracking criteria. Virginia will continue promoting environmental studies in all watersheds and work through the roundtables and other avenues to collect and assimilate the data. Additionally, Virginia agencies will work with our CBP partners to coordinate the distribution of the CBP *State of the Bay Report* to the public, local governments and others.

Progress/Outlook
Watershed forums working with state agencies, localities and CWOs can assist in targeting stream

corridors that have degraded waters by using the base-line data that has been collected. The roundtables can also assist in guiding the development of Implementation Plans required by the TMDL process.

Additional Efforts
Ensuring the long-term provision of information on the health of stream corridors will require additional resources over time. Involving local governments and others in the review and understanding of that information and the continuing evolution of that kind of information system and process will require effective communication, consultation and coordination at the watershed level.

2.2.5 -
By 2004, each jurisdiction, working with local governments, community groups and watershed organizations, will develop stream corridor restoration goals based on local watershed management planning.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Watershed forums, in cooperation with agencies, will be a primary vehicle to develop basin wide goals based on existing planning and monitoring data. These goals will then be integrated into the stream corridor restoration components of locally driven watershed management planning. The Virginia watershed planning protocol will serve as a guide for local interest in the commitment. These goals will be coordinated with Tributary Strategy implementation, TMDLs, CREP, WQIA, and other initiatives, to the extent feasible.

State Role
State government participants include: CBLAD, DCR, DEQ, DGIF and DOF.

Virginia agencies will assist in the development of stream corridor restoration goals by lending technical expertise on any task force working on this commitment. Further, it is the responsibility of the agencies to provide direction to watershed forums in the development of the basinwide goals.

Progress/Outlook
As a result of the Stream Corridor Restoration Goals Workshop on May 7, 2003 in Baltimore, Maryland, it was recommended that the Department of Conservation and Recreation (DCR) establish a workgroup, including representatives from the STAC workshop, to address these issues. DCR would then present the workgroup recommendations at a series of informational/review meetings to obtain public comments and input on the proposed definitions and goal.

Recommendation: DCR should be directed to establish the workgroup. State agency participation should include CBLAD, DEQ, DGIF, and DOF. The establishment of the workgroup will enhance the Commonwealth's efforts in addressing and reaching this commitment.

Additional Efforts

The state will be considering ways to enhance mechanisms for communication, consultation and coordination on environmental and natural resource issues at the regional, river, and watershed level. (See discussion in Part One on regional communication, consultation, and coordination.) Additional resources will be needed to meet the demand for stream protection and restoration of riparian corridors. The federal/state Conservation Reserve Enhancement Program (CREP) will assist funding riparian buffers, wetland restoration and conservation easements on agricultural lands meeting eligibility requirement. Additional resources also will be needed for urban, suburban and other lands not qualifying for CREP.

2.3 - Wetlands

2.3.1 -
Achieve a no-net loss of existing wetlands acreage and function in the signatories' regulatory programs.

Department of Environmental Quality -

Year: **2004**

Approach to Implementation

1. Regulate activities in wetlands through permitting program
   - Avoidance and minimization of impacts
   - Compensation for unavoidable impacts
2. Improve monitoring and enforcement activities
   - No unpermitted impacts
   - Ensure success of compensation efforts
3. Improve tracking of wetlands losses and gains through centralized database

State Role

State government participants include: CBLAD, DEQ, MRC and VIMS.

DEQ continues to implement a wetland permitting program through its Virginia Water Protection Permit (VWPP) Program that is independent of federal jurisdiction and covers all of the Commonwealth's wetlands. The VWPP program along with the Commonwealth's existing tidal

wetland program administered by MRC and Local Wetlands Boards with scientific and technical support from VIMS provide the regulatory mechanism through which a no-net loss of existing wetlands acreage and function can be maintained.

In addition, the Chesapeake Bay Preservation Act's Regulations apply to the 84 localities of Tidewater, Virginia and require these localities to identify and protect sensitive lands, including tidal wetlands and certain nontidal wetlands as Resource Protection Areas (RPAs). Only water dependent uses and redevelopment are allowed in RPAs. The Regulations give these local governments additional authority to protect wetlands through preservation beyond applicable state and federal permits.

Progress/Outlook

Regulatory programs are working toward achieving no net loss of wetlands.

Tidal wetland program is ongoing. Currently reviewing Mitigation / Compensation policy to address formerly non-compensated losses associated with small impact shoreline stabilization projects.

The following are the 2003 statistics for acres of permitted tidal and nontidal wetland impacts within the Chesapeake Bay drainage, as well as acres of compensation provided for those impacts

Wetland Type	Impacts (acres)	Compensation (acres)	Net Gain (Loss)
Tidal Vegetated	4.78	2.25	(2.53)
Non-tidal Emergent	24.2	29.5	5.3
Non-tidal scrub/shrub	5.0	9.4	4.4
Non-tidal forested	65.5	187.3	121.8
Total Wetlands	99.5	228.5	129.0

While we have essentially maintained the status quo on annual impacts to wetlands within the Chesapeake Bay drainage area, we have made progress in providing compensation for those impacts. While there was a net loss of tidal wetlands within the Bay area, overall there was a net gain in wetland acreage. The Tidal Wetland program continues to implement its Mitigation/Compensation policy to address formerly non-compensated losses. The Non-Tidal Wetland program continues to increase the number of inspections on permit compliance, including success of compensation projects and reduction of non-permitted impacts.

Comprehensive state non-tidal wetlands program was fully implemented on October 1, 2001.

- Most activities in wetlands regulated.
- Compensation required sufficient to achieve no net loss.
- Use of general permits provides time to focus on compliance / enforcement.
- Operating under a Corps State Programmatic General Permit that allows more state control

over permitting and compensation for nontidal wetland impacts less than one acre.

Additional Efforts
DEQ has worked with VIMS on a centralized database to track nontidal wetland acreage by watershed and wetland losses and gains through permitting programs and voluntary efforts. This work is being supported by an EPA State Wetlands Assistance Grant.

MRC continues to work with VIMS on their database for tidal wetland gains and losses.

2.3.2 -
By 2010, achieve a net resource gain by restoring 25,000 acres of tidal and non-tidal wetlands. To do this, we commit to achieve and maintain an average restoration rate of 2,500 acres per year basin wide by 2005 and beyond. We will evaluate our success in 2005.

System Administrator -

Year: **2004**

Approach to Implementation
Implement new voluntary programs, and build on existing programs and partnerships, to achieve net resource gain; Provide technical assistance and education and outreach on cost-share programs encouraging wetland restoration and protection.

State Role
DGIF and its partners continue to have an active voluntary restoration program that assists private and public landowners to restore wetlands on their property. Landowners receive assistance with site selection, cost-share programs, restoration design, and permit issues. DCR supports efforts by landowners to restore wetland acreage through the Conservation Reserve Enhancement Program (CREP). Landowners can use the CP-23 Wetlands Restoration conservation practice available in CREP to restore wetlands in the Bay basin. DEQ is working to both encourage voluntary wetland restoration activities outside of permit programs and to track gains achieved by watershed through these programs.

Progress/Outlook
DGIF and DCR, through its partnering with organizations such as the USFWS Partners for Wildlife Program, USDA Farm Bill Programs, Ducks Unlimited, the Chesapeake Bay Foundation, and others, have obtained funding and grants for wetland restoration projects within the Chesapeake Bay watershed. DEQ has organized a Virginia Wetlands Enhancement and Restoration Coordinating Committee consisting of state and federal agencies and non-profit organizations engaged in wetland restoration; participants have provided the first annual reporting of acres of wetlands restored via

their projects so that we can track progress toward the goal of having an average restoration rate of 2,500 acres per year basin wide by 2005 and beyond.

2003 Data on Voluntary Restoration within the Chesapeake Bay

Wetland Type	Enhanced (acres)	Restored (acres)	Created (acres)	Totals (acres)	Preservation (acres)
Nontidal Emergent	0	0	4	4	8
Nontidal Scrub/Shrub	6	0	0	6	0
Nontidal forested	0	158.4	0	158.4	0
Tidal (All)	60	67.3	0	127.3	2225

Progress to date is as follows:

- Goal: 6,000
- Progress through 2003: 794 acres
- Progress Toward 2010 Goal: 13%

Additional Efforts
DEQ has received an EPA State Wetland Assistance Grant to work with Alliance for the Chesapeake Bay to establish the Virginia Citizen Wetland Education, Outreach, and Monitoring Program to provide public education and outreach concerning wetland restoration in Virginia and wetland assessment monitoring of created, enhanced, and restored wetland areas. Four workshops in the Bay drainage have been held for approximately 200 volunteers to provide the public with information on opportunities for restoration projects, including site selection and funding. A table of funding opportunities was prepared and is available on the DEQ website. A manual is being prepared to educate citizens in monitoring of wetland restoration projects to ensure their success.

Department of Game and Inland Fisheries -

Year: **2004**

Approach to Implementation

1. Provide technical assistance to local, state and federal governments on wetland restoration techniques and cost-share as requested.
2. Continue building on existing partnerships and programs to achieve net resource gain.
3. Provide technical assistance as required for educational programs encouraging wetland

restoration and protection.

State Role
DGIF continues to have an active voluntary wetland restoration program. The program assists private, state, local, and federal government landowners to restore wetlands on their property. Landowners receive assistance with site selection, cost-share programs, restoration design, and permit issues. The Department works with many partners to achieve this goal.

Progress/Outlook
Wetland restoration efforts in Virginia are continuing. Partnerships with organizations such as The U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program, The U.S. Department of Agriculture's farm bill programs, Ducks Unlimited, The Chesapeake Bay Foundation, and many others have resulted in additional funding and successful grant applications for Chesapeake Bay Watershed wetland restorations.

Cooperation from other state agencies is responsible for additional wetland restoration projects in Virginia. The Virginia Department of Conservation and Recreation and The Virginia Department of Corrections are both assisting with restoration efforts.

Additional Efforts
Private NGOs and other government organizations also work independently in Virginia to restore wetland habitat.

2.3.3.1 -
Provide information and assistance to local governments and community groups for the development and implementation of wetlands preservation plans as a component of a locally based integrated watershed management plan.

2.3.3.2 -
Establish a goal of implementing the wetlands plan component in 25 percent of the land area of each state's Bay watershed by 2010. The plans would preserve key wetlands while addressing surrounding land use so as to preserve wetland functions.

System Administrator -

Year: **2004**

Approach to Implementation
Implement new voluntary programs, and build on existing programs and partnerships, to achieve net resource gain; provide technical assistance and education and outreach on cost-share programs encouraging wetland restoration and protection.

Localities must develop wetland protection plans as part of an integrated locally based watershed planning process.

State Role

DGIF and its partners continue to have an active voluntary restoration program that assists private and public landowners to restore wetlands on their property. Landowners receive assistance with site selection, cost-share programs, restoration design, and permit issues. DCR supports efforts by landowners to restore wetland acreage through the Conservation Reserve Enhancement Program (CREP). Landowners can use the CP-23 Wetlands Restoration conservation practice available in CREP to restore wetlands in the Bay basin. Through an Executive Order (not yet signed), Governor Warner has directed DEQ to form the Virginia Wetlands Enhancement and Restoration Coordinating Committee, comprised of state and federal agencies, educational institutions, and non-profit organizations to promote and track voluntary wetlands creation and/or enhancement on public and private lands and assist with educating citizens of Virginia on potential restoration, creation, and preservation opportunities.

State agencies such as CBLAD, DCR, DGIF, DEQ,VIMS and DOF need to work with localities to provide technical assistance on protecting sensitive wetland areas and assisting them with developing wetland preservation plans. Virginia Outdoors Foundation and Virginia Land Conservation Foundation provide financial incentives for conserving wetlands.

Progress/Outlook

DGIF and DCR, through its partnering with organizations such as the USFWS Partners for Wildlife Program, USDA Farm Bill Programs, Ducks Unlimited, the Chesapeake Bay Foundation, and others, have obtained funding and grants for wetland restoration projects within the Chesapeake Bay watershed. Landowners participating in CREP have restored 37.5 acres of wetlands as of June 30, 2003 in the Bay basin. DEQ held its first meeting of the Virginia Wetlands Enhancement and Restoration Coordinating Committee in September 2003; participants agreed to provide annual reporting of acres of wetlands restored via their projects so that we can track progress toward the goal of having an average restoration rate of 2,500 acres per year basin wide by 2005 and beyond.

A Draft Virginia Strategy for the Development and Implementation of Wetlands Preservation Plans has been developed that: outlines how multiple agencies will coordinate with local governments to develop planning tools and guidance on preservation planning and includes targeting key wetlands, tracking of success. Funding for implementation of this effort remains to be identified. We currently have no centralized tracking mechanism in place to monitor progress toward achieving goal of implementing the wetlands plan component in 25 percent of the land area of each state's Bay watershed by 2010.

Additional Efforts

DEQ has received an EPA State Wetland Assistance Grant to work with the Alliance for the Chesapeake Bay to establish the Virginia Citizen Wetland Education, Outreach, and Monitoring Program. This program will provide public education and outreach concerning wetland restoration in Virginia and wetland assessment monitoring of created, enhanced, and restored wetland areas. A

series of workshops has been scheduled in 2003 and 2004 to provide the public with information on opportunities for restoration projects, including site selection and funding. A manual is being prepared to educate citizens in monitoring of wetland restoration projects to ensure their success.

Land use planning by localities that integrates preservation of wetland areas and management of surrounding uplands to prevent degradation of wetland resources needs to be encouraged and incentivized.

Department of Game and Inland Fisheries -

Year: **2004**

Approach to Implementation

State Role
State government participants include: CBLAD, DCR, DEQ, DGIF, DOF and VIMS.

Wetland preservation may be defined as “the conservation of ecologically important wetlands in perpetuity through acquisition by purchase or donation, negotiated conservation easement, conservation tax incentive, or other mechanism, which precludes the conversion of a wetland to other uses.” The surrounding land use and the subsequent management in and around the wetlands may significantly influence their function, and thus play a significant role in wetland preservation and management decisions.

Implementation of this wetland preservation strategy is supplemental to Virginia's existing regulatory programs and voluntary initiatives. Specifically, the strategy supports and integrates the Commonwealth's no-net loss and net-gain goals, acknowledging that wetland preservation also involves careful management of both the wetlands and their surrounding landscape. In addition to state actions, such projects frequently will be undertaken voluntarily by landowners (private and public) through a variety of incentive programs.

Progress/Outlook

Additional Efforts

2.3.4 -
Evaluate the potential impact of climate change on the Chesapeake Bay watershed, particularly with respect to its wetlands, and consider potential management options.

2.4 - Forests

2.4.1 -
By 2002, ensure that measures are in place to meet our riparian forest buffer restoration goal of 2,010 miles by 2010. By 2003, establish a new goal to expand buffer mileage.

Department of Forestry -

Year: **2004**

Approach to Implementation

- Continuing effective cost-sharing program for landowners (CREP).
- Intensify cooperative, collaborative approach among federal and state agencies.
- Continue efforts to support increased funding for "working landscape" conservation easement purchases and donations.

- Implement 5 Urban Forest Canopy Assessment Projects.

State Role

State government participants include: CBLAD, DCR, DEQ, DGIF, DGS, DOC, DOF, VDACS and VDOT.

The Commonwealth of Virginia has a direct and significant role in the continuing establishment of riparian forest and other buffers. A Virginia Riparian Implementation Plan was developed in 1998 and contains specific tasks associated with buffer restoration and meeting the goal of the Adoption statement. Governor Gilmore signed Executive Order 48 (99) specifying certain riparian efforts including a 20% increase in the amount of riparian buffers on state-owned or managed land. The state, the soil and water conservation districts, and the federal Natural Resources Conservation Service (NRCS) are the major partners in this riparian restoration effort.

State agency participation revolves around a voluntary approach and the installation of soil and water practices. The incentive for practice installation is the federal and state cost-share programs administered by state agencies with field staffs able to conduct technology transfer to private landowners. The Tributary Strategies process will influence the total goal numbers for RFB. This process should be completed by summer 2005.

In addition, the Chesapeake Bay Act requires the designation of a 100-foot buffer along all tidal and perennial streams and wetlands. Use and development is severely restricted within the designated Resource Protection Area (RPA) where vegetation must remain intact. Forestry Best Management Practices (BMPs), including riparian corridor protection, are mandatory within the RPA.

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Progress/Outlook

- There exists a strong agency partnership in both riparian and conservation work. Need to make headway in urban arena - marketing efforts weak with development community. There is an opportunity to merge efforts with recent stormwater initiative. Need to strengthen Geographical Information System (GIS) efforts to target conservation efforts.
- Achieved 610-mile goal during spring 2002 - 8 years ahead of schedule mostly due to CREP. CREP has been renewed through 2007, and remains a critical component for continued success.
- As of June 30, 2003, 1,983.2 miles of riparian forest buffers have been implemented, 1,191.4 miles within the Chesapeake Bay Watershed and 791.8 within the Southern Rivers Watershed. The 2004 numbers should be available soon.
- Success may plateau without additional technology transfer and staff; easiest projects may have been completed with the more difficult landowners/tracts remaining.
- Strong upward trend in easement donations. Will need to continue to document the location and extent of riparian easements across the state.
- Need to assure a continued supply of nursery stock.

Additional Efforts

DOF continues efforts to quantify vegetation survival and water quality effects within restored buffers.

2.4.2 -
Conserve existing forests along all streams and shorelines.

Department of Forestry -

Year: **2004**

Approach to Implementation

- Continuing effective cost-sharing program for landowners (CREP).
- Intensify cooperative, collaborative approach among federal and state agencies.
- Continue efforts to support increased funding for "working landscape" conservation easement purchases and donations.

State Role

State government participants include: CBLAD, DCR, DEQ, DGIF, DGS, DOC, DOF, VDACS and

VDOT.

The Commonwealth of Virginia has a direct and significant role in the continuing establishment of riparian forest and other buffers. A Virginia Riparian Implementation Plan was developed in 1998 and contains specific tasks associated with buffer restoration and meeting the goal of the Adoption statement.

The Department of Forestry administers the Forest Legacy, a fee simple acquisition or conservation easement program. This voluntary program pays the landowner for "development rights" to the land. The Conservation Reserve Enhancement Program has a riparian easement portion administered by DCR. The Virginia Land Conservation Foundation will send out an RFP for conservation easement and fee simple acquisition in January 2005. This is the first time in 3 years this money will be available.

Many state agencies participate in a statewide Riparian Working Group chaired by the State Forester. This group will coordinate riparian activities statewide and ensure agencies promote and implement riparian restoration and conservation. The Virginia Division of Natural Heritage is assembling location information for conservation easements including riparian easements.

In addition, the Chesapeake Bay Local Assistance Department administers the Chesapeake Bay Act requiring the designation of a 100-foot buffer along all tidal and perennial streams and wetlands. Use and development is severely restricted with the designated Resource Protection Area (RPA) where vegetation must remain intact. Forestry Best Management Practices (BMPs), including riparian corridor protection, are mandatory within the RPA.

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Progress/Outlook
One recent development, corresponding to and perhaps resulting from Virginia's riparian buffer restoration efforts, has been increased collaboration on in-stream restoration efforts. The CREP easement portion has been successful in securing one large riparian easement. We are hopeful this leads to other easements.

Additional Efforts
Continue efforts to increase conservation, including riparian areas. Enhance importance of Virginia Land Conservation Foundation efforts to fund conservation.

2.4.3 -
Promote the expansion and connection of contiguous forests through conservation easements, greenways, purchase and other land conservation mechanisms.

Department of Forestry -

Year: **2004**

Approach to Implementation
The Chesapeake Bay Forestry Workgroup has embraced this concept and adopted a "Working Forests" approach that includes a hubs and corridors initiative.

The Department has included Conservation in our new Strategic Plan and is our #2 goal.

State Role
State government participants include: DCR, DEQ, DGIF, DOF, VOF and VLCF.

The Commonwealth of Virginia has a significant and continuing role in the expansion and connectivity of forests for ecosystem stability including water quality, wildlife habitat, recreation, and aesthetic values.

The Virginia Land Conservation Foundation is a state entity that accepts easement proposals and reviews twice a year for possible funding. Agency staff reviews proposals and organizes Foundation meetings.

The Virginia Department of Natural Heritage is developing a statewide GIS mapping database for forest connectivity. The coastal plain portion is complete.

DOF administers the Forest Legacy Program. This is a U.S. Forest Service Program whereby they give a block grant to state to purchase forest conservation easements or fee simple purchase. As with the Land Conservation Foundation, this program pays the landowner for the "development rights" based on a federal appraisal.

The Virginia Outdoors Foundation has been in existence since 1966. Their primary function is to acquire open space easements of benefit to the citizens of the Commonwealth and must be consistent with local land use planning.

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Progress/Outlook
Virginia conservation efforts are increasing. Forest connectivity is critical to conservation success. Funding is now available in the Virginia Land Conservation Foundation and a proposal will go out in January 2005. Farms/Forests category will receive around $1 million.

The Coastal Program's Coastal Estuarine Protection program has earmarked $1 million for the Dragon Run watershed. This money will conserve around 1000 additional acres.

Additional Efforts
The Virginia Natural Resources Leadership Institute is adopting this effort as their primary goal to support. The DCR-Natural Heritage Division is continuing their work on completing the Resource lands database. The Department of Forestry is supporting their efforts as they move into the

Piedmont portion of Virginia.

Senate Joint Resolution 75 will study the options for Forest Land conservation. Eight public meetings have been held. The report is due to the General Assembly in November, 2004.

Conserving the Forest Landbase is the agency's #2 goal. Each forester is responsible for promoting this concept including speaking to local planning districts and Board's of Supervisors on the topic. Also, we will include conservation in all Stewardship Planning reports sent to landowners.

Water Quality

3.1 - Nutrients and Sediment

3.1.1 -
Continue efforts to achieve and maintain the 40 percent nutrient reduction goal agreed to in 1987, as well as the goals being adopted for the tributaries south of the Potomac River.

As reported in the 2003 Status Report, the control actions to achieve non-point source nutrient load reductions were fully achieved in the Shenandoah-Potomac Basin by the end of December 2002. Progress continues on the point source retrofits to install nutrient control systems.

A draft interim nutrient cap strategy for the Shenandoah and Potomac River Basins was completed in 2001.

Additional Efforts
Lack of funding for the Water Quality Improvement Fund in the 2002-2004 biennium budget limited continued implementation progress in Virginia's Bay tributaries.

Department of Environmental Quality -

Year: **2004**

Approach to Implementation
The development and implementation of Tributary Nutrient Reduction Strategies, targeted toward achieving the original Bay Program goal of reducing nitrogen and phosphorus loads by 40%, has essentially been completed. The focus now is on planning for and achieving the revised (more stringent) nutrient and sediment reduction goals established in 2003 as a result of commitments made in the Chesapeake 2000 Agreement. Details on strategy revisions are presented in Section 3.1.2, which follows.

State Role
State government participants include: DCR, DEQ, VDH and VDOT.

The state government coordinates the development and implementation of the various tributary strategies and works closely with local governments and other affected and interested parties in each watershed.

Progress/Outlook
See Section 3.1.2, which follows.

Additional Efforts
See Section 3.1.2, which follows.

3.1.2 -
By 2010, correct the nutrient- and sediment-related problems in the Chesapeake Bay and its tidal tributaries sufficiently to remove the Bay and the tidal portions of its tributaries from the list of impaired waters under the Clean Water Act. In order to achieve this:

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

The Chesapeake Bay 2000 agreement has significantly shifted the Commonwealth's goals and process for achieving water quality restoration in Chesapeake Bay and its tributaries. Instead of concentrating exclusively on nutrient load reduction, the Bay Program participants are also focusing attention on the water quality conditions to sustain living resources and protect important habitat areas. Prior EPA Chesapeake Bay water quality criteria were based on the assumption that all areas in the Bay are identical and did not take into account the natural variability of water quality conditions in the Bay ecosystem. Recently proposed Bay nutrient criteria and use designations were completed by EPA Region III in April 2003 and include criteria for dissolved oxygen, chlorophyll a and water clarity. In order to attain these new criteria the EPA Chesapeake Bay Program established new nutrient reduction goals for Bay watershed states to reduce the annual amounts of nitrogen from the current estimated 285 million pounds to no more than 175 million pounds, and phosphorus from 19.1 million pounds to no more than 12.8 million pounds. The EPA Chesapeake Bay Program using the Bay Watershed and Water Quality Models determined the cap load allocations for the Bay states and further allocated the loads among the major Virginia tributaries to the Bay. Virginia's nitrogen allocation to the Bay is 51.5 millions pounds/year, phosphorus is 6.00 million pounds/year and sediment is 1.94 million tons/year. Complete information on the development and implementation of Virginia's strategies can be found at *www.naturalresources.virginia.gov*.

DEQ staff presented water quality standards to protect designated uses from the impacts of nutrients and suspended sediments in the Chesapeake Bay and its tidal tributaries to the State Water Control Board (SWCB) on June 17, 2004. The SWCB approved for public comment revisions to the water quality standards.

In addition to working on adopting new Bay water quality standards, DEQ issued a rulemaking for technology based numerical limits for nutrients from point source discharges of total nitrogen and total phosphorus within the Virginia portion of the Chesapeake Bay. Draft regulations were submitted to the SWCB on August 31, 2004. The SWCB approved for public comment revisions to the water quality standards.

State Role

State government participants include: DCR, DEQ, VMRC, and VIMS.

The Commonwealth has significant interests and support responsibilities for this commitment.

Progress/Outlook

- State tributary teams for the Shenandoah, Potomac, Rappahannock, York, Upper James, Middle James, Lower James, and Eastern Shore Basins in conjunction with other state/federal agency staff and affected stakeholders developed multiple computer input decks that

ultimately achieved the Chesapeake Bay pollutant allocations for nutrients and sediment. Revised tributary strategies (per C2K) were completed in April 2004, one year after nutrient and sediment load allocations were provided, and released for public comment.

- Application of the final water quality standards has the potential of affecting the allocations in the James and York Basins due to unique local water quality conditions.
- Virginia will need substantial funding and technical resources to implement the revised tributary strategies in addition to programs such as the Virginia Agricultural Cost-Share Program, the Conservation Reserve Enhancement Program, Environmental Quality Incentive Program, and the Virginia Water Quality Improvement Fund that have been the mainstays for achievements in Virginia's Chesapeake Bay Watershed for years.

Additional Efforts

The total costs to meet this commitment have not been finalized with projections in the 3 to 10 billion dollars range. Implementation strategies and plans need to be finalized to initiate the implementation process. DCR staff is working on improvement of existing NPS data tracking systems (Agricultural Cost Share Database) and the development of new urban data tracking system(s). Additional efforts are underway to combine and incorporate other existing data sources into a unified NPS tracking system.

3.1.2.1 -
1. By 2001, define the water quality conditions necessary to protect aquatic living resources and then assign load reductions for nitrogen and phosphorus to each major tributary;

Department of Environmental Quality -

Year: **2004**

Approach to Implementation

A Bay Program Water Quality Technical Workgroup (WQTW) was created to oversee this commitment. The WQTW coordinated technical and scientific activities to integrate the cooperative and statutory programs of the Chesapeake Bay restoration effort. This included development of quantitative water quality criteria and refined designated uses. The combination of these two elements formed the basis for revised water quality standards, and defined the appropriate water quality conditions, and the locations where they apply, for important living resources and habitat throughout the Bay and its tributaries. The adoption of new tidal water quality standards will establish the "yardstick" to measure against for a restored Bay ecosystem.

State Role

State government participants include: DCR, DEQ, ODU and VIMS.

This commitment has high priority for which the Commonwealth has significant interests and

support activities.

Progress/Outlook
This commitment has essentially been completed with EPA's publication of 2 documents:

1. "Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity, and Chlorophyll a for the Chesapeake Bay and its Tidal Tributaries", (EPA 903-R-03-002, Apr. 2003).
2. "Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability" (EPA 903-R-03-004, Oct. 2003).

The Commonwealth is now working through the public process to adopt the revised standards (see Section 3.1.2.4 for details).

Additional Efforts
Agency staff will continue to provide public education and outreach, to aid in understanding the water quality criteria and designated uses that are driving the nutrient and sediment reduction goals in each Bay tributary basin.

3.1.2.2 -
2. Using a process parallel to that established for nutrients, determine the sediment load reductions necessary to achieve the water quality conditions that protect aquatic living resources, and assign load reductions for sediment to each major tributary by 2001;

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

- On April 15, 2003, Bay states and the District of Columbia agreed to reduce land-based sediment runoff entering the Bay and its rivers from 5.04 million tons per year to no more than 4.15 million tons per year.
- The Commonwealth of Virginia received sediment load allocations for Virginia's tributaries to the Chesapeake Bay from the EPA Chesapeake Bay Program in December 2003. EPA provided Virginia two options by which the cap load allocations for sediment were derived. Option 1 used the same methodology that was chosen for nutrients sub-allocations (relative contributions to controllable sources). Option 2 used the same methodology employed by the Bay Program for land-based allocations to basin jurisdictions. This approach assigns an allocation rule to various regions in each watershed depending on whether they flow to the tidal fresh portion of major tributaries. Due to the more local impacts of sediment controls, cap load allocations to regions below the tidal fresh portion of tributaries (i.e., Lower Potomac, Lower Rappahannock, and Lower James) are more aggressive than those for regions flowing to the tidal-fresh portions. This option is more closely linked to what is

necessary for SAV goals (more environmentally results based) and is linked in part, to what would be achieved once phosphorus load allocations are met. This option also has a heavier reliance on Tier results.

State Role
Virginia decided to use option 2.

Progress/Outlook
Revised tributary strategies (per C2K) address the sediment cap load allocations necessary to provide water clarity for SAV.

Additional Efforts
N/A

Department of Environmental Quality -

Year: **2004**

Approach to Implementation
This commitment has been completed through the “goal-setting” and “load allocation” components of the process discussed above in 3.1.2.1. For all areas of the Chesapeake Bay, improved modeling information was used to determine the level of sediment reduction that would be beneficial and scientifically defensible for each tributary basin. These goals and load allocations were based on achieving sufficient water clarity levels in each tributary and in the main stem of the Bay, primarily to aid the growth and survival of underwater grasses.

State Role
State government participants include: DCR, DEQ, ODU, VIMS.

The Commonwealth has significant interests and support responsibilities for this commitment.

Progress/Outlook
Sediment load allocations have been established for each of Virginia's Bay tributaries, and the Tributary Strategies are targeted toward achieving these reduced inputs. Work will continue to assess "in-place" historical sediment loads and natural resuspension of sediments in the tidal shallow waters to gauge their impact on water clarity, as well as best management practices that reduce shoreline erosion.

Additional Efforts

Agency staff will continue to provide public education and outreach, to aid in understanding the water quality criteria and designated uses that are driving the sediment reduction goals in each tributary.

3.1.2.3 -
3. By 2002, complete a public process to develop and begin implementation of revised Tributary Strategies to achieve and maintain the assigned loading goals;

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

- Virginia will complete the revisions to the Tributary Strategies in 2004
- State tributary teams conducted numerous meetings to facilitate and coordinate with affected stakeholders throughout 2004
- State tributary teams for the Shenandoah, Potomac, Rappahannock, York, Upper James, Middle James, Lower James, and Eastern Shore Basins in conjunction with other state/federal agency staff and affected stakeholders developed multiple computer input decks that ultimately achieved the Chesapeake Bay pollutant allocations for nutrients and sediment. Draft tributary strategies were developed and presented in April for public comment. These strategies included a preliminary cost analysis.
- Revisions to the draft strategies began in June following a 30-day public comment period. These revisions included changes based on stakeholder comments, an updated cost analysis and development of a NPS implementation strategy.

State Role

State government participants include: DCR, DEQ, DOF, and CBLAD.

This part of the impaired waters cleanup effort is state responsibility with the active involvement of many affected and interested parties.

Progress/Outlook

- Revised tributary strategies (per C2K) were completed in April 2004, one year after nutrient and sediment load allocations were provided by the U.S. EPA Chesapeake Bay Program.
- There are concerns at the State level about available staff/resource levels to effectively develop local implementation plans and foster sufficient on the ground implementation efforts to achieve load allocations by the 2010 deadline.
- There are concerns about the likely public and local government perception of the Tributary Strategy revision process and overall Chesapeake Bay restoration effort being an

insufficiently funded state and federal mandate. While the state is seeking an increased effort from local players, insufficient financial and technical resources are hampering progress.

Additional Efforts
Staff is working on improvement of existing NPS data tracking systems (Agricultural Cost Share Database) and the development of new urban data tracking system(s). Additional efforts are underway to combine and incorporate other existing data sources into a unified NPS tracking system.

Staff is working to get additional BMPs credited in the Chesapeake Bay Watershed Model. This will contribute to the nutrient and sediment reductions Virginia receives credit for achieving as a result of NPS Program implementation.

3.1.2.4 -
4. By 2003, the jurisdictions with tidal waters will use their best efforts to adopt new or revised water quality standards consistent with the defined water quality conditions. Once adopted by the jurisdictions, the Environmental Protection Agency will work expeditiously to review the new or revised standards, which will then be used as the basis for removing the Bay and its tidal rivers from the list of impaired waters; and

3.1.2.5 -
5. By 2003, work with the Susquehanna River Basin Commission and others to adopt and begin implementing strategies that prevent the loss of the sediment retention capabilities of the lower Susquehanna River dams.

System Administrator -

Year: **2004**

Approach to Implementation
The Chesapeake Bay Program is leading implementation of this commitment and there is no specific role for Virginia.

State Role
N/A

Progress/Outlook
N/A

Additional Efforts

N/A

3.2 - Chemical Contaminants

3.2.1 -
We commit to fulfilling the 1994 goal of a Chesapeake Bay free of toxics by reducing or eliminating the input of chemical contaminants from all controllable sources to levels that result in no toxic or bioaccumulative impact on the living resources that inhabit the Bay or on human health.

Department of Environmental Quality -

Year: **2004**

Approach to Implementation
Goals and commitments within the Toxics 2000 Strategy were designed to target chemical contaminants through management actions with a geographic focus.

State Role
DEQ staff provide representation on the Chesapeake Bay Program's Toxics Subcommittee and various workgroups.

Progress/Outlook
In the past year, progress has been minimal for two primary reasons. First, strategy implementation momentum suffered as the Federal-Interstate Chesapeake Bay Program Toxics Coordinator position was vacant for an extended period. Consequently, workgroup activity was minimal. Second, while the position is now filled, funding necessary to implement the strategy has not been available. The CBP Toxics Subcommittee is now in the informal process of reassessing the strategy to determine which goals to focus on ("priority commitments") and thereby meet at least these within the intended timeframe.

Additional Efforts
DEQ staff have worked in the interim to compile disparate DEQ chemical contaminant data sets into a uniform database format specified by the Chesapeake Bay Program. These data shall be used within future Toxics Characterization efforts.

3.2.2 -
By Fall of 2000, reevaluate and revise, as necessary, the “Chesapeake Bay Basinwide Toxics Reduction and Prevention Strategy” focusing on:

Department of Environmental Quality -

Year: **2004**

Approach to Implementation
Commitment was attained in December 2000 through the Executive Council's adoption of the "Toxics 2000 Strategy".

State Role
State government participants include: DCR, DEQ, DGIF, VDACS, VDH, and VIMS.

Provide appropriate representation and support to the CBP Toxics Subcommittee and the applicable workgroups for implementation of the “Toxics 2000 Strategy”.

Progress/Outlook

Additional Efforts

3.2.2.1 -
Complementing state and federal regulatory programs to go beyond traditional point source controls, including nonpoint sources such as groundwater discharge and atmospheric deposition, by using a watershed-based approach; and

3.2.2.2 -
Understanding the effects and impacts of chemical contaminants to increase the effectiveness of management actions.

3.2.3 -
Through continual improvement of pollution prevention measures and other voluntary means, strive for zero release of chemical contaminants from point sources, including air sources. Particular emphasis shall be placed on achieving, by 2010, elimination of mixing zones for persistient or bioaccumulative toxics.

Department of Environmental Quality -

Year: **2004**

Approach to Implementation

A *Voluntary Mixing Zone Phase-Out Strategy* was developed (August 2001) to target point sources. Applies only to "persistent and bioaccumulative toxics" (PBTs) in "Regions of Concern" and "Areas of Emphasis".

Virginia promotes active participation in Businesses for the Bay (B4B), a voluntary team of forward-looking businesses, industries, government facilities and other organizations within the Chesapeake Bay watershed. B4B members are committed to implementing pollution prevention in their daily operations and reducing releases of chemical contaminants and other wastes to the Chesapeake Bay.

State Role
State government participants include: DCR, DEQ, DGIF, VDACS, VDH, and VIMS.

Provide appropriate representation and support to the Toxics Subcommittee and the applicable workgroups.

Provide assistance in the development, refinement and implementation of the *Voluntary Mixing Zone Phase-Out Strategy*, and provide a list of applicable facilities where pollution prevention efforts can be targeted. With assistance from DEQ Pollution Prevention staff, facilities can find opportunities to reduce or eliminate mixing zones.

Progress/Outlook
A philosophical change in the Chesapeake Bay Program's approach to managing toxics has placed emphasis on the jurisdictional permitting programs to address this issue. With the exception of Pollution Prevention efforts, all other mixing zone elimination activities have ceased.

As a component of the effort to achieve zero release of chemical contaminants, DEQ's Office of Pollution Prevention continues to promote and support Businesses for the Bay ("B4B"). B4B now has a total of nearly 600 member facilities, and 276 of these are from Virginia. In 2003, Virginia participants reported over 4.5 million pounds of hazardous materials reduced voluntarily through pollution prevention techniques, and more than 334 million pounds of total wastes reduced. At the same time, these facilities actually saved nearly $13.5 million due to these waste reductions. In addition, the CBP Executive Council awarded 17 B4B Excellence Awards this year, and 10 of those were awarded to Virginia facilities.

Additional Efforts
None.

3.2.4 -
Reduce the potential risk of pesticides to the Bay by targeting education, outreach and implementation of Integrated Pest Management and specific Best Management Practices on those lands that have higher potential for contributing pesticide loads to the Bay.

3.3 - Priority Urban Waters

3.3.1 -

Support the restoration of the Anacostia River, Baltimore Harbor, and Elizabeth River and their watersheds as models for urban river restoration in the Bay basin.

Department of Environmental Quality -

Year: **2004**

Approach to Implementation

Through continued implementation of the *Revised Elizabeth River Watershed Action Plan*, which promotes the "Clean 14". The focus areas include sediment remediation, stormwater runoff control, wetland restoration, pollution prevention, and monitoring. For additional details, see this Internet website: http://www.elizabethriver.org/

State Role

Direct monitoring activities, which include contractual and budgetary oversight. The state works as a partner with the Elizabeth River Project on the implementation of the Regional Watershed Action Plan. DEQ also serves on a Steering Committee for an Army Corps of Engineers sediment/wetland remediation project.

Progress/Outlook

Restoration work continues at several locations: On Scuffletown Creek, the Army Corps of Engineers is now entering the pre-construction engineering and design phase with 65% federal funds. The state, along with Chesapeake, Norfolk, Portsmouth and Virginia Beach, are co-sponsors. The Army Corps-Norfolk District won Outstanding Planning Achievement in the nation for the feasibility study for remediating six acres of contamination in this creek on the Southern Branch.

On Paradise Creek, the US Navy, responding in part to ERP recommendations, plans to remove contamination from wetlands on this Portsmouth creek. A partnership of the Navy, EPA, NOAA, Army Corps of Engineers and other public and private interests is analyzing data to determine the potential for the creek to be the focus of a feasibility investigation by the Army Corps.

On the Southern Branch, a former wood-treatment facility near Money Point (Eppinger-Russell) has been identified as a significant project for restoration. The initial concept is to treat the offshore problems here with a combination of capping and removing of toxic sediments.

In summer 2004, ERP created 3 new native oyster reefs in the Southern Branch, the most impacted part of the river. One reef was restored at the mouth of Paradise Creek, a second reef was constructed near the Jordan Bridge, and a third next to NORSHIPCO near the mouth of the Southern Branch. These bring to 11 the number of reefs restored in the Elizabeth since 1998. Volunteers stocked the reefs with a disease resistant oyster strain that VIMS developed through selective breeding.

Additional Efforts

The Elizabeth River Sediment Remediation Partnership (ERPSRP) Committee continues to work on developing and overseeing the implementation of a river-wide Sediment Remediation Plan. The partners include Federal (EPA, NOAA, Fish and Wildlife, Army Corps of Engineers), State, military (Navy), industry, academic, municipal, and citizen representatives.

Water quality and other types of monitoring will continue as allowed by budgetary constraints and in-kind services provided by Elizabeth River Project partners.

ERP has established the Elizabeth River Restoration Trust, a new non-profit with the hope that it will be able to clean up the Eppinger-Russell site through $5 million in mitigation from port facility APM Terminals. APM will provide the funds under federal and state permits if a planned port facility proceeds.

ERP continues to take the lead in raising public awareness for the Elizabeth River restoration project through adult and student education.

3.3.2 -
By 2010, the District of Columbia, working with its watershed partners, will reduce pollution loads to the Anacostia River in order to eliminate public health concerns and achieve the living resource, water quality and habitat goals of this and past Agreements.

3.4 - Air Pollution

3.4.1 -
By 2003, assess the effects of airborne nitrogen compounds and chemical contaminants on the Bay ecosystem and help establish reduction goals for these contaminants.

Department of Environmental Quality -

Year: **2004**

Approach to Implementation
Virginia requires companies to monitor and report nitrogen oxide (NOx) emissions from individual power plants and some major industries. This monitoring requirement has been expanded to require the use of continuous emissions monitors (CEMS) at major NOx sources as new control requirements become effective in 2004. NOx emissions from motor vehicles, another large source of emissions, are calculated based on such factors as vehicle model years, vehicle speed, and miles traveled. Inventories of air pollutant emissions are updated periodically and tracked to determine the pollution trends over time.

The state does not routinely assess the effects of airborne emissions on the Bay ecosystem. This type of assessment has generally been conducted by federal agencies, principally the EPA and programs funded by the Chesapeake Bay Program. Addressing the impacts of air pollutants from statewide

sources to local waters would require an expansion of existing efforts.

Virginia continues to implement the federal Hazardous Air Pollutant program. To date, EPA has promulgated 41 standards for hazardous airborne pollutants, proposed 13, and plans to propose an additional 33 within the year. Virginia has one or more sources affected by 30 of the 41 standards, 6 facilities are subject to the proposed standards, and anticipates 26 sources will be covered by the standards still to be proposed. Overall, this program will reduce emissions of 188 Hazardous Air Pollutants. In addition to the ozone season NOx emission control strategy, the state administers various control programs on new utility and industrial facilities such as New Source Performance Standards (NSPS) and Best Available Control Technology (BACT). These are implemented through the new source permitting process that requires continuous control of NOx emissions throughout the year.

The major difficulty in controlling the impact of pollutants that are deposited from the air is that the Bay drainage area receives input from an "emitter zone" that is about 5 times larger than the Bay watershed. This is far beyond the control of the Bay Agreement signatories, who must rely instead on legislation and regulations administered by EPA on a national scale.

State Role

State government participants include: DEQ.

The state monitors emissions from some sources and estimates emissions from others. The state also develops appropriate regulations and policies as necessary to control and reduce emissions of both NOx and chemical compounds.

Progress/Outlook

DEQ's air quality control program focuses on implementing the regulatory requirements of the Clean Air Act. This primarily involves permitting of stationary and other sources to ensure compliance with air quality standards that are directed at protecting human health. As a result, activities to "assess the effects of airborne nitrogen compounds and chemical contaminants in the Bay" are very limited.

A Clean Air Act regulatory action that does have implications for the Bay is referred to as the "NOx SIP Call". EPA required 22 States and the District of Columbia to submit State Implementation Plans ("SIP") that address the regional transport of ground-level ozone. By improving air quality and reducing emissions of nitrogen oxides (a precursor to ozone formation known as NOx), the actions directed by these plans will decrease the transport of ozone across State boundaries in the eastern half of the United States. One potential issue with the NOx SIP Call is that most companies are meeting the limits by installing controls, which decrease the total amount of nitrogen emitted (converting NOx into nitrogen gas and water), but the remaining nitrogen released is in the form of ammonia. The potential impact of this air quality trade off on the Bay should be further evaluated.

In response to the EPA SIP Call, Virginia has adopted regulations to substantially reduce NOx emissions from power plants and large industrial sources. Each source is to demonstrate compliance with these new requirements by May 31, 2004. It is estimated that the total emission reductions from the affected sources will be on the order of 26,000 tons each year during the ozone season (May 1st

through September). These reductions will occur from an ozone season baseline of 47,000 tons. The permanent statewide NOx emission cap for all subject sources will be on the order of 21,000 tons per ozone season. Information on the state regulation and emissions caps can be obtained from: http://www.deq.virginia.gov/air/planning/noxsip.html

In addition to the SIP Call regulations, the EPA and DEQ have reached legal settlements with both Dominion Virginia Power and Mirant Mid-Atlantic that will further reduce regional NOx emissions and establish annual NOx emissions caps.

For other significant NOx sources, new federal regulations have been adopted for motor vehicles (including SUVs), and construction equipment that will also produce substantial NOx emission reductions in the future to further reduce airborne nitrogen deposition to the Bay.

Furthermore, the state will continue to adopt the additional regulations for sources subject to the Hazardous Air Pollutant standards as EPA finalizes such standards. All covered sources are required to be in compliance with these standards and regulations by May 15, 2007. At this time, data are not available to quantify the amount of chemical reductions expected from this program between now and 2007.

Additional Efforts

In addition to efforts to control NOx deposition, the Bay Program participants are beginning to investigate the magnitude of airborne ammonia emissions, especially from combined animal feeding operations, and their potential influence on water quality conditions.

Several air program efforts are under way that could further aid the Bay's restoration. As a substitute for the inactive "Clear Skies" legislation, EPA has proposed the Clean Air Interstate Rule (CAIR), which would require further SO2 and NOx emission reductions to assist areas to come into compliance with the federal fine particulate and ozone standards. Information on the CAIR rule can be found at: http://www.epa.gov/interstateairquality/.

In addition, the state legislature is scheduled to consider a "clean smokestacks" bill during the next session that may further reduce statewide power plant NOx emissions and limit out-of-state emissions trading.

Finally, as part of the regional haze planning effort, more reductions of NOx and/or ammonia emissions may be needed as part of an overall visibility improvement program for the southeast. Additional information on this effort can be found at: http://www.vistas-sesarm.org

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3.5 - Boat Discharge

3.5.1 -
By 2003, establish appropriate areas within the Chesapeake Bay and its tributaries as "no discharge zones" for human waste from boats. By 2010, expand by 50 percent the number and availability of waste pump-out facilities.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

The approach being taken is to use Federal Clean Vessel Act (CVA) funding to increase the number of pump-out facilities and work with the Clean Vessel Act Coordination Committee to include stakeholder support. While EPA, in coordination with DEQ, establishes "no discharge zones," input from other agencies and institutions will be used to guide this process. Additional action is being implemented through Pollution Prevention Programs and the Virginia Clean Marina Program. While this remains a challenging directive, the Commonwealth continues to build stakeholder support to provide guidance.

- Use the Clean Vessel Act funding to increase the number of pump-out facilities and work through the Clean Vessel Act Coordination Committee to establish "no discharge zones".
- Provide grant funding for marinas to participate in the pump out program to assist them with maintenance on pumpout equipment after it is installed. This may be accomplished through the reauthorization of the CVA.

State Role

State government participants include: DCR, DEQ, DGIF, MRC and VDH. State agencies provide grant funds and technical assistance to support the expansion of the pump-out facilities and regulate such facilities.

Progress/Outlook

Continue to provide pump-out facilities and work with the Clean Vessel Act Coordination Committee. Although Virginia will likely reach the goal to increase pump-out availability well before 2010, expanding the number and availability of facilities by 50% may be inadequate to prevent further pollution. The program does not account for pump-outs improperly operated or where local wastewater treatment systems are unable to handle additional wastes created by the expanded pump-outs.

Additional Efforts

Additional resources may be needed to more effectively manage the growth and operation of pump-out facilities. Improved coordination among agencies that monitor and regulate pump-outs and those which implement solid waste programs will also be addressed. The CVA program (installing pump-outs and dump stations) is still addressing impacts from Hurricane Isabel. VDH received numerous requests to replace systems that were lost due to damage. The use of available funds was concentrated by VDH in the effort to replace the damaged systems or refurbish equipment, somewhat delaying the expansion of the pump-out program to new sites. One benefit of this approach is that the new equipment is modern, durable, and easier to use.

3.5.2 -
By 2006, reassess our progress in reducing the impact of boat waste on the Bay and its tributaries. This assessment will include evaluating the benefits of further expanding no discharge zones, as well as increasing the number of pump-out facilities.

Sound Land Use

4.1 - Land Conservation

4.1.1 -
By 2001, complete an assessment of the Bay's resource lands including forests and farms, emphasizing their role in the protection of water quality and critical habitats, as well as cultural and economic viability.

watershed in Virginia.

The DCR-maintained Protected and Managed Lands database, available to the public as a GIS-capable public website, continues to grow in size and accuracy, especially with incorporation of new parcels from localities and land trusts. It is now extensively used by state and federal agencies and other GIS users.

Progress/Outlook
In the coming year, DCR and DEQ will be actively working with localities and other state agencies, including the Virginia Land Conservation Foundation, DOF, and VDACS, to implement specific protection activities based on the Virginia Conservation Lands Needs Assessment and to develop new datasets addressing economic and cultural land protection needs that will be integrated into a more comprehensive VCLNA. The intent is to build consensus around this Assessment as a key tool that can help guide the wise expenditure of land conservation funding within Virginia.

Additional Efforts
Virginia will continue to participate in both the CBP's RLATF and the associated Technical Team and will monitor the necessity to develop a Virginia multi-agency Task Force to address specific data needs. Virginia will also continue to participate on the Land Conservation and Forestry Workgroups that are also working on aspects of this commitment.

4.1.2 -
By 2001, complete an assessment of the Bay's resource lands including forests and farms, emphasizing their role in the protection of water quality and critical habitats, as well as cultural and economic viability.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
In Virginia, public bodies and private land conservation organizations throughout the Bay Watershed continue to work together to develop and enhance programs related to the purchase of easements and the purchase of development rights (PDR). The Commonwealth is studying funding mechanisms to help advance these programs.

State Role
State government participants include: DCR, DGIF, DOF, TAX, VDACS and VOF.

There are a number of existing and well-received easement programs among both State agencies and private sector organizations in Virginia. A synthesis of these programs was presented in 2000 in a VOF/DHR/DCR report entitled "Conservation and Historic Easements in Virginia". This portfolio of federal, state, local, and non-profit funding programs and techniques identifies programs that may help address this commitment. The Department of Conservation and Recreation maintains a land conservation website where the public can find detailed information on land conservation programs and who they can contact in the public and private sector for assistance. This site links to DCR's Protected and Managed Lands website. In 2003, a land conservation workgroup chaired by the Director of DCR cooperatively developed a brochure entitled "Assistance from Virginia State Agencies for Land Conservation" to provide the public with an explanation on how different state programs can assist them meet their land conservation needs. The State also continues to partner with the Virginia United Land Trust (VaULT), an organization whose membership includes many of the Commonwealth's land trusts, to synergistically promote land conservation programs.

In terms of purchase of development rights (PDR) efforts, the Virginia Land Conservation Foundation has established grant funding criteria for PDR programs and VDACS' Farmland Preservation Taskforce has been developing tools to help localities establish farmland PDR programs. A number of localities have already developed Purchase of Development Rights Programs. Easement programs are also growing, with easements being taken at record rates by the Virginia Outdoors Foundation, by localities, land conservation trusts, and state conservation agencies.

The 2004 General Assembly provided the Virginia Land Conservation Foundation $5 million in funding for acquisition of easements and fee-simple lands in the next two years. This money, augmented with funding generated from vehicle registration fees, will allow the VLCF to solicit funding proposals for the first time since 2000.

The development of new revenue sources to expand the use of voluntary and market based mechanisms to preserve land remains a high priority. Virginia recognizes that continued philanthropic giving of easements to organizations like the Virginia Outdoors Foundation and the further refinement of tax incentives that fuel these donations by private citizens and Foundations is one of the best ways to address this commitment. VirginiaForever, which was launched in 2004, is a coalition of organizations, sportsmen, businesses and industry representatives actively working to increase the commitment of state funds for natural resource protection.

Progress/Outlook

The Commonwealth is doing a good job on providing the tools and incentives to the general public and the land trust community to make significant land conservation progress. The new 2-year funding for the VLCF will provide some boost to land protection efforts. However, it is recognized that a permanent state-funding source for land conservation purposes would help to further advance Virginia's land conservation efforts.

Additional Efforts

Virginia, working with its Congressional leaders, needs to continue to seek increased federal funding

to supplement state land conservation programs.

4.1.3 -
Strengthen programs for land acquisition and preservation within each state that are supported by funding and target the most valued lands for protection. Permanently preserve from development 20 percent of the land area in the watershed by 2010.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The primary element of this commitment speaks to preserving 20% of the land area in the watershed. Starting from a June 30, 2000 baseline listing and acreage total of properties that meet the definition of preserved lands, an additional 1.1 million acres in Virginia is needed to be preserved by 2010. The Land Conservation Workgroup under the LGSS has developed an overall work plan for monitoring progress on these commitments, implementing tasks and projects, and creating and implementing specific strategies for particular commitments as needed.

State Role
State government participants include: DCR, DGIF, DHR, DOF, VLCF, VDACS, VIMS and VOF.

As part of its management of the Protected and Managed Lands database, DCR calculates the annual statistics that tell how successful Virginia is in working toward the goal. One key role of the state in this commitment relates to targeting its programs towards the most valued lands. The VLCF splits its funding among four uses (natural area protection, open spaces and parks, farmlands and forest preservation, and historic area preservation) and also passes money to the Virginia Outdoors Foundation for its easement program. The VLCF is responsible for developing a “needs assessment” (strategic plan) for future land preservation targeting efforts that will cohesively synthesize those properties and needs identified in the many plans of Virginia’s conservation partners. The Virginia Conservation Lands Needs Assessment (VCLNA) being developed by DCR and VLCF will also play a key tool for targeting the most important lands for preservation.

In 2002, the Commonwealth provided DCR with $20 million in land preservation funding through Virginia Public Building Authority Bonds and $36.5 million through General Obligation Bonds. This funding has been utilized to acquire key State Park and Natural Heritage lands. In the past year, 30,436 acres of additional land in Virginia’s Chesapeake Bay watershed were protected. This is a reduction from the 37,986 new acres protected on average in the previous 3 years, and short of the pace needed to meet the 2010 goal. About 50% of this year’s protected acreage addition results from the 15,192 acres protected through VOF easements. DCR state park and natural area preserve purchases added an additional 2,690 acres, the Nature Conservancy 3,448 acres, and local

governments protected 4,491 new acres.

Progress/Outlook
Virginia continues to make progress on mechanisms for spending land protection funds effectively, but still lacks a permanent funding source to aggressively address current goals. The ongoing development of the Virginia Conservation Lands Needs Assessment to serve as a targeting tool for the VLCF is a promising activity. The Commonwealth has the capability to accurately identify and track its preserved lands and the programs in place to protect the lands within the Commonwealth.

Virginia's current land preservation status (Amount of Land Preserved in Virginia's Portion of the Chesapeake Bay Watershed) as of June 30, 2004 is as follows:

Federal - 1,752,390.5

State - 483,675.3

Local - 88,943.0

Non Profit/ Private - 35,298.2

Total - 2,360,306.9

17.06% of Bay Watershed in Virginia is protected. (20% of Virginia's Bay acreage is 2,766,378 acres.) Virginia's remaining target is 406,071 acres – a daunting task when, over the last 4 years, Virginia has only preserved a total of 142,253 acres in the Bay Watershed.

Additional Efforts
Virginia must continue to seek state and federal funds to assist with land preservation efforts and enhance our programs to educate landowners on opportunities available to them to protect their lands from future development and to keep them as working open space. Permanent funding sources for the VLCF should be established.

4.1.4 -
Provide technical and financial assistance to local governments to plan for or revise plans, ordinances and subdivision regulations to provide for the conservation and sustainable use of the forest and agricultural lands.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

State agencies have many ongoing efforts to provide technical assistance to local governments on a variety of issues regarding plans, ordinances, subdivision regulations and their role in providing for the conservation and sustainable use of the forest and agricultural lands. One of the primary programs, the Chesapeake Bay Preservation Act, has been focused on these issues for the past 15 years. The Act has resulted in the adoption of ordinances and development of environmental components of comprehensive plans that addressed the issues of conservation and sustainable land use. DCR's Division of Chesapeake Bay Local Assistance (DCBLA) has developed educational materials including the 'Riparian Buffers Modification & Mitigation Manual', and the 'Got Buffer' brochure. In addition, DCBLA coordinated with York County Virginia in the development and distribution of a buffer video. All of the above mentioned items have been very well received and since their publication, DCBLA has received requests for additional training and educational materials.

In addition to the Commonwealth's Bay Act, the Bay Program can be a conduit for information related to this commitment. The Bay Local Government Information Network (Bay LOGIN) is facilitated and maintained by the International City/County Management Association (ICMA). Bay LOGIN functions as a part of the Chesapeake Bay Program and the Local Government Advisory Committee (LGAC). The Bay LOGIN strives to strengthen the knowledge of local governments in the Chesapeake Bay watershed. It offers a number of services including news flashes, a newsletter, a listserv, queries, surveys, an archive, links to relevant Web sites, and more. These vehicles not only enable local government officials to keep up with bay related issues and significant impacts on local governments regarding the Chesapeake 2000 Agreement, it also provides the an opportunity to give feedback. Future services provided on the network may include: Land Use; Watershed Management Planning; Land Preservation; Environmentally Sensitive Design; Maps/GIS Analysis; Model Codes/Regulations/Programs; Sound Land Use; Best Management Practices; Habitat Restoration/Preservation; Riparian Buffer; Stormwater Management; and Wetlands Restoration/Preservation information to name a few categories. Information provided on this website may help address elements of this commitment.

State Role

State government participants include: DCR, DGIF, DOF and VDACS. The state has the lead on this commitment and the agencies noted above are carrying out a number of programs and activities that contribute to the implementation of this commitment. Those efforts include the Chesapeake Bay Preservation Act criteria for sound land use management which have been incorporated into the guidance and requirements for comprehensive plans and land management ordinances of Tidewater localities; local program review process, training and certification, and technical assistance to mitigate and minimize the environmental impacts of development throughout the Commonwealth. However, Virginia has no comprehensive statewide approach to sound land use planning and practices that fully address the impacts of growth, development and transportation on the watershed.

Progress/Outlook

Additional emphasis should be placed on providing planning assistance to localities throughout the Commonwealth. Programs like the Chesapeake Bay Preservation Act that can impact local land use

decisions can play a key role in the conservation and sustainable use of sensitive natural resources.

Additional Efforts

4.1.5 -
In cooperation with local governments, develop and maintain in each jurisdiction a strong GIS system to track the preservation of resource lands and support the implementation of sound land use practices.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
This commitment will primarily be implemented at the state/local level with the Bay Program providing modest support through the activities of the Land Data Workgroup and the Land Conservation Workgroup under the guidance of the Land, Growth and Stewardship Subcommittee. The Bay Program may also be in a position to produce additional information that would supplement a state/local GIS system through the development of a Chesapeake Resource Lands Atlas, a report with maps that would characterize the status, trends, and condition of resource lands. The report would address extent, location, and change of resource lands and indicate areas of high value and vulnerability. The Bay Program's efforts would also result in the production of:

1. A series of environmental indicators that reflect resource land issues related to water quality, habitat, and economic factors for the 11-digit watersheds of the Chesapeake Bay basin.
2. A map set of forest, farmland, and wetland areas that contain important ecological and economic features, and those that are vulnerable to conversion or degradation.
3. A technical report that describes the analysis products and interpretation of findings.

State Role
State government participants include: DCR, DGIF, DHCD, DOF, VGIN and VMRC.

To meet this commitment, Virginia utilizes its Protected and Managed Lands database. DCR will continue to coordinate with local governments, non-profit conservation organizations, and state and federal agencies to track their preservation of resource lands and add these to that comprehensive database. Localities and planning district commissions (PDCs) have access to these layers for their use in local planning efforts either through the web or by acquiring digital data for their own GIS. The Virginia Conservation Lands Needs Assessment (VCLNA) being developed by DCR will provide additional data tools for local governments and other conservation partners.

Progress/Outlook
This commitment will necessitate a great deal of coordination amongst federal, state, and local entities using GIS. The state has staff to coordinate with land trusts and localities to make preserved lands information available, and the VCLNA will offer additional tools. The Commonwealth is and will continue to make significant advances on the GIS front and will coordinate these advances with the localities and PDCs.

Additional Efforts
Expanded resources might include the addition of several more GIS technical specialists to address key layers such as prime soils, farmlands, etc.

4.2 - Development, Redevelopment and Revitalization

4.2.1 -
By 2012, reduce the rate of harmful sprawl development of forest and agricultural land in the Chesapeake Bay watershed by 30 percent measured as an average over five years from the baseline of 1992-1997, with measures and progress reported regularly to the Chesapeake Executive Council.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
This commitment will be implemented by identifying barriers to, and opportunities for, promoting sound land use, strengthening programs promoting sound land use (including those other commitments which will help achieve this), and finally, providing technical and financial assistance to targeted audiences to promote environmentally sensitive new development and redevelopment. Money for this exact purpose was initially allocated and distributed under the Chesapeake Bay Preservation Act, however, that funding was eliminated in 2002. Land use decisions in Virginia are made at the local level and it will be difficult for state programs to have an overriding influence on the reduction of harmful sprawl development without adequate resources and support. Since this commitment is to be measured on a watershed wide basis, the tracking system will be created, maintained, and operated within the Bay Program. Because development activity is to be tracked, there may be a need for locality specific information that may have to be provided by, or through, the Commonwealth. In the year 2007, the first assessment for progress will be accomplished and in 2012, the final data collection and assessment will occur.

State Role

State government participants include: DCR, DEQ, DOF and DHCD. The state has the lead on this commitment within the CBP, and the state agencies noted above are carrying out a number of programs and activities that contribute to the implementation of this commitment. However, local governments will do the major portion of the implementation of this commitment. Virginia also participates in the Development, Redevelopment and Revitalization workgroup, a subset of LGSS, which is charged with developing a strategy to meet this commitment. The workgroup has developed draft parameters for the commitment, a definition of harmful sprawl, a baseline determination and a direction for a tracking system. The jurisdictions have agreed on the definition of harmful sprawl and the tracking methodology, which will be RESAC. Virginia will not be required to provide or maintain a separate data system but may have to provide some data. The Commonwealth will need to develop and implement measures to reduce "harmful sprawl" development (however defined) of agriculture and forested lands to accommodate a fair share of the 30 percent target.

Progress/Outlook

Status of this commitment cannot be adequately assessed until the baseline is established , the target is set, and the measurement period is determined. Setting the baseline to track land conversion is in progress but delayed because RESAC land cover data is not available until Dec. 2003 and draft RESAC impervious cover data is available but is biased towards high/medium density development. While the states await the data and tracking system from the Bay Program, efforts to effectively reduce the impacts from rapid sprawl within the watershed should continue.

Additional Efforts

Significant resources will be necessary to effect change on this scale within Virginia. Technical assistance will be critical to promoting sound land use and environmentally sensitive designs. The restoration of state funding for local implementation of land use tools and practices as well as for support personnel is critical to the state's success. Our current Chesapeake Bay Program efforts are not sufficient to accomplish this goal.

4.2.2 -
By 2005, in cooperation with local government, identify and remove state and local impediments to low impact development designs to encourage the use of such approaches and minimize water quality impacts.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

This commitment will be achieved through a cooperative effort by state agencies, PDC's and local governments. In addition to education and outreach efforts, forums for discussion among stakeholders, including state agency representatives, the development community and local officials will need to be held, incentives for encouraging low impact design and other approaches will need to

be developed, and actual state and local code changes will need to be enacted.

State Role
State government participants include: CBLAD, DCR, DEQ and VDOT.

Virginia agencies are carrying out a number of programs and activities that contribute to the implementation of this commitment. Those efforts include programs that encourage the use of low impact design and better site design through work with community groups, the development community, and localities. Some programs have specifically begun to address the identification and removal of impediments to low impact development and minimization of water quality impacts. Other programs provide training and technical assistance services to promote the use of bio-retention as a low impact development technique.

Progress/Outlook
Two work groups are currently examining Low Impact Development (LID) in Virginia. One is a group of LID stakeholders lead by the U.S. Army Corps of Engineers. The other is a work group initiated by the legislature to report on the status of Low Impact Development. Progress on this commitment is feasible since many of the initiatives coincide with initiatives already in progress. State and more importantly local regulatory changes will have to occur in order to remove impediments for environmentally sensitive designs.

Additional Efforts
A strong commitment from Virginia's Executive and Legislative branches as well as local governments will be necessary to accomplish the incentives for regulatory changes that will need to occur at the state and local levels. Additional financial resources may be needed to accomplish this commitment on a large scale throughout the Bay Watershed.

4.2.3 -
Work with communities and local governments to encourage sound land use planning and practices that address the impacts of growth, development and transportation on the watershed.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The current approach to this commitment is composed of efforts by a variety of state programs which address portions of this issue including land use management, comprehensive plan requirements, better site design programs, local erosion and sediment control and stormwater management program reviews, watershed conservation roundtable organizations, low impact development workshops, transportation planning initiatives, and others, etc. Efforts include the

Chesapeake Bay Preservation Act criteria for sound land use management which have been incorporated into the guidance and requirements for comprehensive plans and land management ordinances of Tidewater localities; local program review process, training and certification, and technical assistance to mitigate and minimize the environmental impacts of development throughout the Commonwealth. Since the implementation of the Bay Act, many localities that previously had no mention of environmental factors in their comprehensive plans have incorporated this important information. In addition, all of the 84 localities covered under the Bay Act have adopted Chesapeake Bay Preservation Area zoning ordinances, which incorporate sound land use practices into the day-to-day development process. The Chesapeake Bay Preservation Act states, "The board is charged with the development of regulations which establish criteria that will provide for the protection of water quality, and that will also accommodate economic development." Recognition of the interrelationship between growth, economic development and the environment is the key to sound land use planning. Through the effective implementation of the Bay Act and its Regulations, the goal of "sound land use planning" can be achieved. Virginia has no comprehensive statewide or Bay watershed-wide approach to sound land use planning and practices that fully address the impacts of growth, development and transportation on the watershed. However, to fully achieve implementation of this commitment, a more structured and systemic, cooperative state-local partnership would need to be developed to address the impacts of growth, development and transportation on the watershed. A strategy would need to be developed and implemented to work with local governments to encourage low impact development designs; encourage the concentration of new residential development in areas supported by adequate water resources and infrastructure; encourage sound land use and practices that address the impacts of growth, development and transportation in the watershed; and promote redevelopment.

In March 2003, a Low Impact Development Taskforce was formed to address these issues within the Commonwealth. In addition to this Taskforce, the state has numerous voluntary and regulatory programs that work towards meeting this commitment.

State Role

State government participants include: DCR and DEQ.

The state has the lead on this commitment and the agencies noted above are carrying out a number of programs and activities that contribute to the implementation of this commitment. Those efforts include the Chesapeake Bay Preservation Act criteria for sound land use management which have been incorporated into the guidance and requirements for comprehensive plans and land management ordinances of Tidewater localities; local program review process, training and certification, and technical assistance to mitigate and minimize the environmental impacts of development throughout the Commonwealth. However, Virginia has no comprehensive statewide or Bay watershed-wide approach to sound land use planning and practices that fully address the impacts of growth, development and transportation on the watershed.

Progress/Outlook

Some progress on this will occur through existing programs. However, a cooperative approach would be necessary to encourage sound land use planning and practice within the entire Bay Watershed.

In April 2003 the state conducted a series of watershed management planning workshops to promote

two watershed management planning guides that will help localities take measures to utilize sound land use principles.

Existing programs include the following:

- **Ongoing state programs:**
- ***Regulatory Programs:***
- The Bay Act;
- Erosion and Sediment Control Law;
- VPDES Phase I and Phase II permits;
- TMDL compliance.
- ***Voluntary/Incentive Programs:***
- Watershed Planning;
- Tributary Strategies;
- Stormwater Management Law;
- Open Space Preservation Initiatives—VLCF, CREP, VOF, WQIA, PDR's, easements, clustering provisions, etc.;
- Urban Nutrient Management Planning;
- Agriculture Plans;
- Brownfields Program;
- Enterprise Zones and other urban redevelopment programs;
- Coastal Management Act;
- GIS and modeling tools;
- TMDL planning.
- ***Promotional/ Educational and Outreach Activities:***
- Technical assistance programs;
- Educational programs;
- Urban nutrient management programs (Bayscapes);
- The cooperative watershed initiatives program;
- Better Site Design;
- Low Impact Development.

There is an obvious need for Bay related programs that address the entire Bay watershed within the Commonwealth. The current approach, while effective, is only addressing half the issue. The Bay Act includes only those localities that are located east of interstate 95. In order to provide balance, and evenly distribute the responsibility across those localities that impact the Bay, it is necessary to expand the states efforts westward. Such an expanded program would differ from the current program, in that the geophysical, topographical, and hydrological characteristics of the localities west of I-95 vary from the existing Tidewater localities. Bills to expand the Bay Act have been introduced in the past three General Assembly Sessions but have failed.

Additional Efforts

A state-local partnership and state strategy must be developed to implement this commitment. Financial and technical assistance for Better Site Design, Low Impact Development, adequate public infrastructure, cluster/village development designs, open space conservation development, transit

planning, and other land use planning and transportation planning techniques will be essential. Incentives for local government's to incorporate these measures and implement changes to their planning practices will also be critical.
Additionally, localities are developing Tributary Strategies that will address nonpoint source pollution reductions via watershed management and sound land use management principles. A key to the successful implementation of the Tributary Strategies and overall efforts to encourage sound land use planning is the full implementation, enforcement and expansion of the Chesapeake Bay Preservation Act. Plans for the introduction of another bill to expand the Bay Act have been mentioned for the 2005 General Assembly Session. Key players must mobilize their efforts now to foster needed support for acceptance of such a bill.

4.2.4 -
By 2002, review tax policies to identify elements that discourage sustainable development practices or encourage undesirable growth patterns. Promote the modification of such policies and the creation of tax incentives, which promote the conservation of resource, lands and encourage investments consistent with sound growth management principles.

Team -

Year: **2004**

Approach to Implementation
A report prepared by the Environmental Law Institute has been received and remains under review.

State Role

Progress/Outlook
It is uncertain at this point what additional modifications will be made to Virginia's tax law. However, the information contained in the report provided by the Chesapeake Bay Program will be helpful in making future decisions.

Additional Efforts

4.2.5 -
The jurisdictions will promote redevelopment and remove barriers to investment in underutilized urban, suburban and rural communities by working with localities and development interests.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The concepts in this commitment are fairly well institutionalized through the Enterprise Zone, Brownfield Redevelopment, Main Street, and similar community and economic development programs.

State Role
While there is no formal coordinated approach to this commitment, the agencies noted above are carrying out a number of programs and activities that contribute to the implementation of this commitment. Those efforts include the Enterprise Zone and the Derelict Structures Program, which can be used to stimulate redevelopment of distressed areas. EZ Program provides state incentives to businesses that create new jobs and investment. Zones are geographically designated areas that are distressed and have been identified as having special economic needs. A significant number of these zones are in the Chesapeake Bay watershed. The intent of these zones is to direct new economic activity to underutilized, distressed areas. The Derelict Structures Program provides grant funds to local governments to acquire, rehabilitate, stabilize or demolish structures that have a blighting influence. Addressing these derelict structures makes them available for redevelopment opportunities.

Progress/Outlook
The programs discussed above are ongoing and can continue to be promoted in attracting economic development and providing certain incentives that result in achievement of this commitment. To meet this commitment, Virginia must provide more incentives for redevelopment and identifying and removing barriers. This will require a comprehensive review of current incentives and barriers by the appropriate state agencies and in cooperation with local governments.

Additional Efforts
Additional efforts required will include additional and expanded incentive programs and financial and technical assistance for redevelopment efforts. There will need to be support from the General Assembly to accomplish this commitment.

4.2.6 -
By 2002, develop analytical tools that will allow local governments and communities to conduct watershed-based assessment of the impacts of growth, development and transportation decisions.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

State agencies will continue to work with GIS data bases and applications and other modeling tools and refine them to improve the ability of localities to make wise decisions, develop effective plans pertaining to land use, coordinate and facilitate nonpoint source pollution control programs at the local level, and provide support to community watershed organizations to promote water quality stewardship in subwatersheds. As agencies conduct more systematic transportation planning, incorporating mass transit options along with roadway improvements, they will provide local governments and PDCs with their findings and recommendations pertinent to local long-term transportation planning. In this regard, agencies will no longer simply respond to local requests for transportation project funding, but will instead begin to attempt to influence the direction of local transportation planning in ways that will help to achieve this commitment.

State Role

State government participants include: DCR, DEQ and VDOT. Since the CBP's Land Growth and Stewardship Subcommittee has the lead on this commitment, Virginia state agencies are working within the subcommittee and its workgroups to develop better tracking tools for the impacts of growth, development and transportation decisions in the Bay Watershed. Virginia will promote among local governments the use of analytical tools for conducting watershed-based assessments of the impacts of growth, development and transportation and to understand and predict the probable impacts and outcomes of alternative development scenarios.

Progress/Outlook

The current activities of state agencies will not result in comprehensive, consistent tools for local governments to conduct watershed-based assessments of the impacts of growth, development and transportation decisions. Its possible that some of the tools developed by the Bay Program will assist in this effort and provide more consistent tools to be utilized through the Bay Watershed.

Additional Efforts

Additional resources will be needed to support the development of analytical tools to support watershed planning and growth/development impact analysis. These tools should be consistent throughout the Bay Watershed and should be transferable between local governments and regions. Incentives for local participation will also be critical.

4.2.7 -

By 2002, compile information and guidelines to assist local governments and communities to promote ecologically-based designs in order to limit impervious cover in undeveloped and moderately developed watersheds and reduce the impact of impervious cover in highly developed watersheds.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

Various state agencies promote the implementation of ecologically based designs and practices to reduce the water quality impacts of impervious cover in highly developed watersheds and limit impervious cover in undeveloped or moderately developed watersheds. Agencies will continue to educate localities, developers, site designers, and plan reviewers in the techniques (including low impact development) required to minimize and mitigate the "harmful" effects of development. Agencies will continue to provide technical assistance to localities developing stormwater management plans to cost-effectively mitigate and minimize the "harmful" effects of new and existing developments. Watershed based approaches to local land use planning are promoted as the foundation of ecologically based land use plans. Virginia is actively participating projects coordinated by the Chesapeake Bay Program that address watershed planning and sound land use planning.

State Role

State agencies involved: DCR, DEQ and VDOT. While no formal coordinated approach to this commitment has been developed, the agencies noted above are carrying out a number of programs and activities that contribute to the implementation of this commitment. Those efforts include continued enforcement of requirements for limiting impervious cover and reducing the impacts of impervious cover as performance standards for development, promotion of ecologically-based designs that minimize impacts to water quality, continued technical and financial assistance and distribution of educational materials and outreach programs such as better site design program to promote low impact development. Other efforts include erosion and sediment programs, stormwater management programs which help localities minimize impervious cover in developing areas and cooperative non-point source programs under the Water Quality Improvement Act. The last of these is a combination of local, state and federal programs to achieve a systematic means to improve water quality. Many state agencies have been involved in the work of the Low Impact Development Task Force which was assigned to develop a certification process for low impact development techniques in achieving quantifiable pollution prevention results, develop guidance for local governments and the general public to promote LID, to recommend changes to existing statutes and regulations to facilitate the use of LID techniques and to develop a model ordinance for use by local governments. It is hoped that the work of this task force will help to move Virginia closer to meeting this commitment.

Progress/Outlook

The various technical and financial assistance programs to serve the localities as well as basin-wide stormwater management are critical for this commitment. Outreach efforts related to better site design and work on removing impediments to better site design and low impact design initiatives, in particular, should help meet the objectives of this commitment for these localities. Appropriate state agencies could promote local adoption of development incentives towards these ends (i.e., density credits for projects that meet established objectives). Also, recognition programs could be developed or enhanced to provide public credit to developers who meet the objectives of this and other commitments.

Additional Efforts
Additional resources will be necessary to expand existing programs to fully meet this commitment.

4.2.8 -
Provide information to the development community and others so they may champion the application of sound land use practices.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Key state agencies will continue to provide information to the land development industry to help them negotiate desirable outcomes that result in win-win projects for the localities as well as the builders. This involves striving for the same goals as are discussed in 4.2.2 and 4.2.3. Efforts to expand better site design programs and assist the development community through the provision of technical support and information about erosion and sediment control, comprehensive planning, growth management tools, stormwater management planning, low impact development, sensitive species, habitat, and natural communities will be critical.

Efforts to promote more use of low-impact subdivision street and drainage designs is important as well as programs such as the pre-qualified sites and buildings initiative is a planning effort that should result in providing the development community with sites that not only meet their needs but also reflect the application of sound land use principles by avoiding impacts to sensitive lands and minimizing permit issues for clients. Agencies utilize mailing lists or other means to communicate directly to economic development interests and provide informational publications pertaining to plant communities/animal species/habitat that would be useful to developers in accomplishing sound, environmentally sensitive project plans.

State Role
State government participants include: DCR, DGIF and VDOT.

This commitment calls for providing information to the development community and others so they may champion the application of sound land use practices. Virginia will utilize many of the tools being developed by the Bay Program for increased outreach to the development community. The other responsibility of the Commonwealth in this regard is for its agencies to continue with their research and program development efforts and to disseminate their findings.

Progress/Outlook
Progress is being made on this commitment through existing state programs, such as better site design work and non-point source programs. Transportation planning requires anyone performing land disturbing activities on the right of way to obtain a responsible land disturber erosion and

sediment control certification and to attend an 8-hour training class prior to performing any land disturbing activities.

The expansion of better site design work will include research on identifying and removing barriers and impediments to LID and Better Site Design. One example includes a grant-funded project to Friends of the Rappahannock to work with localities on targeting and removing impediments. This project includes an education/outreach component to target Planning Commissions and Boards within local governments. One result of this project will be recommended code changes in each of the localities.

Additional Efforts
In order to more completely address this commitment, there needs to be dedicated resources to an education, outreach and technical assistance effort directed at the development community.

4.2.9 -
By 2003, work with local governments and communities to develop land-use management and water resource protection approaches that encourage the concentration of new residential development in areas supported by adequate water resources and infrastructure to minimize impacts on water quality.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Agencies will promote watershed-scale and environmentally-based approaches to land use planning. Through the review of local comprehensive plans under the Chesapeake Bay Preservation Act and other related efforts, DCR will support local government efforts to concentrate development in areas served by adequate public infrastructure. As a result of cooperative nonpoint source management planning, land uses are more likely to be placed where adequate water resources exist. Basin-wide planning activities will incorporate regional approaches to infrastructure assessment. In addition, State agencies will continue to work closely with other local, state, federal and other stakeholder groups and organization to strengthen education and outreach efforts regarding the link between population growth, development and non-point source pollution. And will look to further educational efforts that address the use of cluster zoning, neotraditional design, conservation and other land use planning tools and practices. Source water protection programs may also be applicable to this commitment. The Source Water Assessment Program (SWAP) is the first step in providing the owners of waterworks information concerning the locations of land use activities of concern that may impact their water supply. Currently, there is no mandatory source water protection under the Safe Drinking Water Act. However, the Act should encourage protection activities.

State Role

State government participants include: DCR, DEQ, VDACS, VDH and VDOT

The state has the lead for this commitment. The agencies noted above are carrying out a number of programs and activities that contribute to the implementation of this commitment. Baywide efforts include the implementation of effective stormwater management and erosion and sediment control programs and the development of cooperative non-point source programs under the Water Quality Improvement Act in each locality to reduce water resource impacts.

Tidewater specific efforts implemented through the Chesapeake Bay Preservation Act include the review and update of local comprehensive plans and land management ordinances and implementation of land management practices, which minimize water quality impacts from development in Tidewater Virginia.

Progress/Outlook

The general focus for meeting this commitment will be an on-going process of building on the efforts the agencies are already making and improving coordination between existing programs. In addition, there is a need for state agencies and the General Assembly to work closely with groups such as the Virginia Chapter of the American Planning Association, local governments and the development community to determine if local governments have the appropriate authority and tools at their disposal to effectively address the issue of ensuring that the allocation of public facilities and services keeps pace with development in an environmentally sensitive manner.

The expansion and application of criteria similar to that of the Chesapeake Bay Preservation Act throughout Virginia's portion of the watershed would provide needed technical assistance and needed authority to many additional local governments, and is critical to the overall success of Virginia's efforts.

Additional Efforts

The existing level of effort can continue with existing resources, as it is a component of the affected agencies general work programs. An acceleration of effort with regard to an assessment and assistance of the application of local policies toward this commitment would necessitate additional manpower and support resources. As stated above, greater local authority may be needed in order to successfully address this commitment, this will require additional resources. In addition, increased financial and technical assistance to localities is imperative for continued strengthening of existing programs and the development of new programs that may result as a finding of further study.

4.2.10 -
By 2004, the jurisdictions will evaluate local implementation of stormwater, erosion control and other locally-implemented water quality protection programs that affect the Bay system and ensure that these programs are being coordinated and applied effectively in order to minimize the impacts of development.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

- As result of the Governor's Natural Resources Leadership Summit (held April 2003), an interagency task force of state natural resource staff was created.
- The task force met on six occasions, held five stakeholder group meetings with local governments, the building and development community, soil and water conservation districts and environmental organizations. The taskforce also received written comments. Following the recommendation of this taskforce Virginia is beginning to consolidate stormwater and erosion control programs within DCR.
- For additional information contact DCR.

The Erosion and Sediment Control (ESC) law and the Stormwater Management (SWM) law mandate that DCR provide regular review and evaluation of the effectiveness of local and state agency implementation of ESC (§10.1-562) and SWM (§10.1-603.12) programs and their consistency with the State Law and Regulations. The scheduled statewide review of local ESC programs, as approved annually by the Soil and Water Conservation Board (SWCB), establishes the schedule for the comprehensive review of local ESC and SWM programs. In 2000, the long–standing audit process was expanded and improved to be more beneficial to localities to help them identify solutions to common site design and program administration difficulties.. It includes data on population, topography, staff certification levels, random site inspections, plan review, effectiveness and overall program administration, to include fees charged. The audit results in a corrective action plan for each locality, noting any deficiencies and the timeline for improvement. Failure to comply with the plan can result in enforcement action by the Virginia Soil and Water Conservation Board. Ratings achieved by each locality in this urban nonpoint source review program can be compiled statewide so that each locality and its citizens know the relative status of protection efforts conducted by their jurisdiction. In Tidewater communities where the CPBA may apply, local programs are reviewed by DCR in the context of those ordinances. Also, this urban programs audit is the foundation for Virginia's urban nonpoint pollution reduction tracking system, maintained by DCR to help verify the accomplishment of the Tributary Strategy goals.

As well, the Chesapeake Bay Preservation Act (CBPA) requires that the Chesapeake Bay Local Assistance Board ensure that its local programs are being implemented consistent with the requirements of the Act and associated regulations. A local audit process to evaluate existing local approaches to meeting requirements of the Chesapeake Bay Preservation Act is being developed for approval by the Board. This audit process will provide a mechanism of reviewing how each locality implements the Act and Regulations, which are an essential component of locally implemented water quality protection programs in the Tidewater area. A further component of this activity is the development of an annual report format and a process for the review and evaluation of local program annual reports. The audit process will move CBLAD from its compliant based oversight of local program implementation into the type of pro-active oversight role that is expected by the General Assembly and reflected in

this commitment.

VDOT, the only state agency with a DCR certified, internally implemented E&S Control Program, will also be more aggressive in the review of its program's consistency and effectiveness.

State Role
State government participants include: CBLAD, DCR, DEQ, DOF and VDOT.

The Bay States have the lead for this commitment. In Virginia, DCR has responsibility state-wide and Bay-wide, and CBLAD has responsibility in Tidewater for evaluating the local implementation effectiveness of their erosion and sediment control requirements.

Progress/Outlook
Results of the current studies should help to better understand the implementation status of existing programs. Agencies are continuing to evaluate implementation of their respective laws and regulations through their current review processes. Agencies may need additional resources to meet the commitment deadline of 2004.

Additional Efforts
Agencies will need to increase the pace and effectiveness of their cooperative and coordinated oversight of local programs to the degree feasible, based on current resources. These changes should take place over the next 1-2 years and would necessitate a long-term commitment to local program implementation and enforcement. Local programs need the incentives and tools to do a better job as well as additional long term staffing and funding resources. Beyond that, these program reviews and oversight processes will become routine, based upon an established multi-year cycle for the review of all the programs.

4.2.11 -
Working with local governments and others, develop and promote wastewater treatment options, such as nutrient reducing septic systems, which protect public health and minimize impacts to the Bay's resources.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Several state agencies are involved with the subject of this commitment and have programs that contribute to the implementation of this commitment. An example is the Revolving Loan Fund that communities can use to establish and improve wastewater treatment works and state agency staff to work with and advise localities regarding wastewater treatment options. Another example is the

promotion of new septic systems regulations that go further than to reduce nutrient discharges. Other agencies have an enforcement role with local health departments and as such maintain and update the regulations that govern septic systems. Other requirements include performance criteria specific to septic system design and maintenance. When biosolids are to be applied to agricultural lands, in most areas, a plan prepared by a DCR certified nutrient management planner governs the process to ensure the agronomic uptake of the nutrients. This reduces the potential for runoff pollution from these sites. Some localities have additional requirements to further restrict the risk of pollution from sludge.

State Role

State government participants include: DCR, DEQ, DHCD and VDH The role of the state for this commitment will be to disseminate information to local units of government so that they may consider and adopt performance standards beyond those enforced by general statutes and regulations. The existing regulatory functions of the DOH and DCR provide an avenue of communication for such efforts. Also, through the DEQ Revolving Loan Fund, the Water Quality Improvement Fund, and Community Development Block Grants administered by DHCD technologies and systems that are more responsive to water quality considerations should be encouraged.

Progress/Outlook

VDH has recently finalized amendments of State On-Site Wastewater Treatment Regulations (for septic systems). These amendments will result in a quantum leap in the useful life and water quality/public health protection derived from new septic systems. As well, the regulations include more flexibility pertaining to alternative and innovative on-site treatment systems. CBLAD is also amending its program regulations. The septic system provisions of those regulations are proposed for revision to mirror the applicable flexibilities in the new VDH regulations. DHCD administers the Community Development Block Grant (CDBG) Program in non-urban areas of the Commonwealth. A significant number of projects funded with CDBG resources involve provision of wastewater treatment systems to low- and moderate-income Households. Many of these households have never had sanitary wastewater disposal systems before. By providing these facilities to households that are not able to afford them otherwise, public health is improved and human waste contamination of the Bay is reduced.

Additional Efforts

Coordination efforts among state agencies should continue to improve and additional funding for grant programs for the installation of new systems is a need.

4.2.12 -
Strengthen brownfield redevelopment. By 2010, rehabilitate and restore 1,050 brownfield sites to productive use.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Efforts to develop a brownfields and voluntary cleanup program that encourages and provides incentives for program participants are ongoing. By understanding and appreciating the challenges brownfield participants face, the program is finding ways to provide equity to brownfield projects to help level the paying field between greenfields and brownfields. Recent state and federal legislation provides critical legal and financial incentives to encourage brownfield redevelopment. DEQ recently released its program guidance manual that provides innovative and customer friendly tools to help developers see the value and opportunity in brownfield redevelopment.

State Role
State government participants include: DEQ, DHCD and VDOT. The state has the lead for this commitment. VA's role in strengthening brownfields redevelopment includes facilitation of projects through reasonable regulatory requirements and technical assistance. DEQ works cooperatively with brownfield participants to help them understand how to implement available incentives, apply for grants, and navigate the brownfield process.

Progress/Outlook
Substantial progress is being made in understanding the needs of brownfield participants. Liability, cost, and timeliness are the three primary deterrents to brownfield redevelopment in VA. The program is actively developing ways to mitigate those deterrents through policy review/change and possible legislative actions. The outcome for such progress looks excellent as it is recognized that the critical role it plays in facilitating brownfield redevelopment successes and looks to leverage off of beneficial federal brownfield activities. Through FY 2003, DEQ reported 33 successes towards the goal of rehabilitating/restoring 150 brownfield sites to productive use by 2010. The outlook appears favorable as interest in brownfield redevelopment continues to be strong and the number of project starts remain steady.

Additional Efforts
Additional efforts to help meet the commitments include educating/assisting local governments, continual marketing of program availability, increasing benefits, and working with state agencies to find synergies and focus resources. DEQ continues to assist governmental entities by supporting their federal brownfield grant efforts. DEQ plans to evaluate the brownfield program this year in an effort to improve and streamline where possible.

Department of Environmental Quality -

Year: **2004**

Approach to Implementation
Efforts to develop a brownfields and voluntary cleanup program that encourages and provides

incentives for program participants are ongoing. By understanding and appreciating the challenges brownfield participants face, the program is finding ways to provide equity to brownfield projects to help level the paying field between greenfields and brownfields.

Recent state and federal legislation provides critical legal and financial incentives to encourage brownfield redevelopment. DEQ recently released its program guidance manual that provides innovative and customer friendly tools to help developers see the value and opportunity in brownfield redevelopment.

State Role
State government participants include: DEQ, DHCD and VDOT.

The state has the lead for this commitment. VA's role in strengthening brownfields redevelopment includes facilitation of projects through reasonable regulatory requirements and technical assistance. DEQ works cooperatively with brownfield participants to help them understand how to implement available incentives, apply for grants, and navigate the brownfield process.

Progress/Outlook
Substantial progress is being made in understanding the needs of brownfield participants. Liability, cost, and timeliness are the three primary deterrents to brownfield redevelopment in VA. The program is actively developing ways to mitigate those deterrents through policy review/change and possible legislative actions. The outcome for such progress looks excellent as it is recognized that the critical role it plays in facilitating brownfield redevelopment successes and looks to leverage off of beneficial federal brownfield activities.

Through 2004, DEQ has reported 47 successes towards the goal of rehabilitating/restoring 150 brownfield sites to productive use by 2010. The outlook appears favorable as interest in brownfield redevelopment continues to be strong and the number of project starts remain steady.

Details about Virginia DEQ's Brownfield/Land Renewal Program are available at this Internet address: "http://www.deq.virginia.gov/brownfieldweb/homepage.html". Anyone interested in learning more about DEQ's efforts to turn contaminated properties back to productive use is encouraged to visit this site, and contact Program staff with any of your comments or questions.

Additional Efforts
Additional efforts to help meet the commitments include educating/assisting local governments, continual marketing of program availability, increasing benefits, and working with state agencies to find synergies and focus resources.

DEQ continues to assist governmental entities by supporting their federal brownfield grant efforts. DEQ plans to evaluate the brownfield program this year in an effort to improve and streamline where possible.

4.2.13 -
Working with local governments, encourage the development and implementation of emerging

urban storm water retrofit practices to improve their water quantity and quality function.

System Administrator -

Year: **2004**

Approach to Implementation

Annual the DCR offers the Chesapeake Bay Watershed Grants for low impact development and innovative urban BMP demonstration projects. Local governments are eligible to receive these grant awards of up to $40,000 for on-the-ground nonpoint source pollution reduction projects. Information on the grant program is posted to the DCR web site, www.dcr.virginia.gov/sw/grants.

State Role

Progress/Outlook

2004 Chesapeake Bay Watershed Grant Awards Included:

- Northern Neck Planning District Commission will establish their office complex as a model for retrofitting existing sites to infiltrate stormwater through a combination of eight LID practices. Signage will be installed for a self-guided tour.
- City of Falls Church will retrofit City Hall and the City Property Yard to demonstrate LID practices. A BMP train will be constructed at City Hall with bioretention areas, a stormcetor diversion, and a Grasspave surface area. Five cisterns (total capacity of 24,000 gallons) will be installed at the City Property Yard for a gray water re-use with irrigation, washing City vehicles, and flushing storm and sanitary sewers.
- City of Alexandria will construct the Commonwealth's largest green roof; a 10,765 sq. ft roof on the Health Department building located on King Street in the heart of the City's commercial and business center. A standard tour, a mobile three-panel display, and a brochure will be developed to promote the practice.
- Fairfax County Board of Supervisors will establish an LID demonstration site at their Providence Supervisor's Office frequented daily by developers, land use planners and other professions. The site will include a 1,405 sq. ft. bioretention area (rain garden), a 240 sq. ft. green roof, and 1,527 sq. ft of permeable pavers.
- Albemarle County will install two different green roof systems, "Green Grid" (896 sq. ft.) and "Envirotech" (2,746 sq. ft.) on their Office Building located in Charlottesville to serve as a BMP demonstration for their area. Signs will be placed at two public-accessible windows, and the site will be open for viewing during office hours.
- Tidewater SWCD will coordinate construction of a 30' x 100' x 3' bio-wetland composed of three section for oil removal, thermal treatment, and nutrient/sediment removal to treat runoff from the 4-acre parking lot of the Old Fox Mill Shopping Center, which now serves as the Gloucester County's Public Library and Main Post Office.

- Rappahannock County will retrofit their Elementary School property with the innovative underground modular "Rain Tank" SWM BMP system with the objective of restoring the pre-development hydrology of the school property.
- Culpeper SWCD in partnership with the Blue Ridge Conservancy will coordinate a residential LID demonstration site on 240-acres of a newly planned subdivision in Greene County. DCR grant funds will support LID engineering design for the subdivision roads and the first lot to be constructed, serving as a model for all 35 lots.
- City of Richmond will revaluation the preliminary site design for the redevelopment of the Intermediate Terminal on the James River to incorporate LID alternatives into the final site design for stormwater management on the 2-acre site serving as a demonstration site for the City. A brochure describing the challenges of LID in an area prone to flooding will be created.
- Town of Orange in an effort to set a precedent for future development in the area, the Town intends to incorporate LID design into the proposed new Round Hill Village development, and the approved plans for Poplar Forest & Orange Estates subdivision, and Park View Apartments development sites. An LID Consortium will be created.

2003 Chesapeake Bay Watershed Grant Awards Included:

- Northern Virginia SWCD will work with the University of Virginia, Lortan Arts Foundation and ATR Associates to develop an LID plan for the redevelopment of 55 acres at the Laurel Hill Property in Fairfax County. This project is being coordinated with the county.
- Thomas Jefferson SWCD will install two demonstration LID techniques at the Nelson Center: a 2,820 square foot bio-retention filter area and a rainwater harvesting systems (above and below ground). They will host an LID workshop and the site will include signage.
- City of Lynchburg will retrofit two existing parking lots and their access roads, a 0.5-acre area along their James Riverfront, with 2-3 types of pervious paving. The project includes signage and a stormwater workshop for local designers.
- City of Lexington will reconstruct a stream channel, plant riparian vegetation, and create a 1.5-acre wetland in the Birdfield Subdivision in Rockbridge County.
- Prince William County will construct 1-2 bioretention facilities to increase their visibility and to promote the practices to Home Owners Associations and commercial property owners.
- Tri City / County SWCD will install LID retrofits including 6 rain gardens, 6 modified landscaped areas and 2 rain barrels at the Stoneridge Subdivision.

Additional Efforts

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

Various state agencies work with localities to encourage and assist in the development of comprehensive watershed-wide or locality-wide stormwater management programs that include retrofit opportunities. There is a significant need for consistent annual funding sources for demonstration retrofit practices.

State Role

State government participants include: CBLAD, DCR, DEQ and VDOT. Virginia agencies encourage localities to implement appropriate BMP retrofit technologies as part of their comprehensive water quality protection programs. State avenues for influencing retrofits include the VPDES Permit Program, the Chesapeake Bay Preservation Act, and the Stormwater Management Act.

Progress/Outlook

- Localities in Tidewater Virginia, as defined by the Chesapeake Bay Preservation Act (CBPA), are required to implement a storm water quality component of their CBPA ordinance. Significant areas of the Chesapeake Bay watershed in Virginia have no such requirement, but may adopt a stormwater management program. The CBPA does not address water quantity issues such as timing releases as does the stormwater management program. The Virginia Stormwater Management Law does not currently require local governments to implement a stormwater management program; it simply provides enabling authority to do so.
- Although total available for the program was only nominal, a grant program offered with funds from the Chesapeake Bay Implementation Grant created an opportunity for localities to implement urban storm water retrofit practices as demonstration sites. Projects funded directly with or in partnership with localities included stormwater retrofits in Fredericksburg in the Hazel Run watershed, an Arlington County office building green roof, a public condominium green roof in Fairfax County, and biofiltration areas in the City of Lexington. The program was offered a second year with project awards made in 2003 for implementation in 2004.

Additional Efforts

Additional state resources, in the form of staff and grant funding, are essential in order to accelerate progress on this commitment. The current opportunities to encourage the use of emerging practices include funding priorities within the WQIA implementation (assuming funds exist), compliance with Minimum Standard 19 of the Erosion and Sediment Control Regulations, and compliance with the water quality component of the stormwater management regulations. Broader adoption of stormwater management programs would significantly enhance the success of this commitment.

4.3 - Transportation

4.3.1 -
By 2002, the signatory jurisdictions will promote coordination of transportation and land use planning to encourage compact, mixed use development patterns, revitalization in existing communities and transportation strategies that minimize adverse effects on the Bay and its tributaries.

4.3.2 -
By 2002, each state will coordinate its transportation policies and programs to reduce the dependence on automobiles by incorporating travel alternatives such as telework, pedestrian, bicycle and transit options, as appropriate, in the design of projects so as to increase the availability of alternative modes of travel as measured by increased use of those alternatives.

System Administrator -

Year: **2004**

Approach to Implementation
Multimodal studies are being undertaken by VDOT as well as providing continued support for special grants for advanced vehicle programs and bike/pedestrian programs. Federal TEA-21 program provides funding for the Surface Transportation Program, National Highway System, Congestion Mitigation and Air Quality (CMAQ) Improvement Program, transit and advanced vehicle programs, and bike/pedestrian programs.

State Role
Secretary of Transportation, Clement outlined policy goals related to bicycles and pedestrians.

1. Bicyclists, walkers and other modes of non-motorized transportation should receive the same consideration as motorized transportation in the planning, design, construction and operation of Virginia's transportation network.
2. Bike lanes, sidewalks, shared-use paths or other accommodations should be included in the design of all new highway and major reconstruction projects, unless special circumstances exist that prevent the inclusion of such accommodations or a local governing body has formally requested that bike lanes or other access not be included in a particular project.
3. Access to the entire transportation system should be improved for bicyclists and pedestrians. To achieve this goal, Clement has asked VDOT to review all existing restrictions affecting bike and pedestrian access to highway facilities.
4. Current funding procedures for bicycle and pedestrian facilities, including design, construction, maintenance and operations, should be reviewed to ensure that these facilities are treated in the same fashion as highway projects.

5. VDOT should identify recommendations for amending any statutory provisions that either hinder the inclusion of bicycle or pedestrian accommodations in construction or prohibit the use of state or federal transportation funds for stand-alone bicycle or pedestrian construction projects.
6. VDOT should ensure that all these activities are coordinated at the statewide and VDOT district levels, including the appointment of focused district advisory councils for pedestrian and bicycle issues.

   One element of VTrans2025 is the Statewide Bicycle and Pedestrian Plan. A plan has been prepared to guide the formulation of a strategic approach to incorporate the consideration and provision of bicycling and walking accommodations in the decision-making process for Virginia's transportation system.

Progress/Outlook

VDOT has a designated State Bicycle and Pedestrian Coordinator to oversee and coordinate activities related to program for the Department. The State Bicycle and Pedestrian Coordinator is part of the Transportation Planning Division who is dedicated primarily to the Bicycle and Pedestrian Program. Each of VDOT's nine districts has a designated Bicycle and Pedestrian Coordinator to assist with implementation of the Bicycle and Pedestrian Program. In general, their role in the program is to provide local support to encourage and implement bicycling and walking related efforts within their respective districts. VDOT has also established the Bicycle Accommodations Review Team (BART), a multi-disciplinary team within VDOT with knowledge in aspects of bicycle and pedestrian planning, design and safety. BART provides reviews of proposed plans to ensure consistency in bicycle and pedestrian facility design. BART reviews highway plans for state-maintained roads that include a bicycle or pedestrian accommodation and TEA-21 funded projects that include a bicycle or pedestrian component.

VDOT completed Regional Bikeway and Trail Network Studies in Northern Virginia, Hampton Road and Richmond regional areas to identify a network of bikeways which transcends jurisdictional boundaries within each region, without compromising the local wishes as documented in various comprehensive plans.

The Virginia Capital Trail will be a multi-purpose facility along Route 5 serving bicyclists and pedestrians. The trail will link the many historic, cultural, and scenic sites along Route 5 and provide essential non-motorized transportation accommodation for communities between Richmond and Williamsburg.

VDOT and DRPT completed a teleworking study to provide a comprehensive analysis of teleworking to support decisions on the level of involvement in future teleworking activities in Commonwealth of Virginia.

VDOT is implementing a pilot program in Botetourt and Caroline Counties to assist the County in developing the transportation element of the comprehensive plan.

Additional Efforts

Meeting this commitment seems favorable since many of the initiatives required to accomplish this

task coincide with initiatives already in progress.

4.3.3 -
Consider the provisions of the federal transportation statutes for opportunities to purchase easements to preserve resource lands adjacent to rights of way and special efforts for stormwater management on both new and rehabilitation projects.

4.3.4 -
Establish policies and incentives which encourage the use of clean vehicle and other transportation technologies that reduce emissions.

Department of General Services -

Year: **2004**

Approach to Implementation
The Energy Policy Act of 1992 (EPACT) has been impacting the State's fleet purchases since model year 1997. EPACT currently requires that 75% of the vehicles purchased, which are under 8500 lbs. and principally operated in the EPACT covered areas, be capable of operating on some type of alternative fuel.

State Role
The Department of General Services (DGS) reports annually to the Department of Energy (DOE) regarding the Stat's compliance with EPACT.

Progress/Outlook
The Commonwealth has made advances in fleet management through the use of alternatively fueled vehicles. DGS's report to DOE for model year 2003 reflected the purchase of 102 alternative fuel vehicles. As the end of model year 2003, the State has 10-banked credits.

The State's passenger fleet consists of 613 vehicles, which are capable of operating on some type of alternative fuel. The State's total passenger vehicle fleet, including law enforcement vehicles, consists of approximately 8200 vehicles.

Additional Efforts
Beginning with model year 2004, the state's institutions of higher education will be responsible for reporting directly to DOE regarding their EPACT compliance.

Achieving this commitment will probably require significant incentives in the way of tax credits, air permit credits, etc. Significant resources will be necessary to effect change on this scale within Virginia. Financial and technical assistance will be critical.
The Commonwealth has begun testing hybrid vehicles. The Central Fleet is also researching into

building an infrastructure for E-85, for the Flexible Fuel Vehicles currently owned by the Central Fleet.

4.4 - Public Access

4.4.1 -
By 2010, expand by 30 percent the system of public access points to the Bay, its tributaries and related resource sites in an environmentally sensitive manner by working with state and federal agencies, local governments and stakeholder organizations.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The Chesapeake Bay Program's Public Access Work Group has agreed that the 30% increase is based on the number of sites shown in the Public Access Guide completed in 2000. The guide identifies over 600 sites, 220 of which are in Virginia, this would mean that Virginia would need to provide approximately 66 new access areas by 2010. Access is divided into four major categories; beach, fishing, natural area, and boating. Initial strategies for meeting this goal include:

- Development of new access facilities on existing public lands
- Acquisition of new access sites for public access
- Directing grant programs towards projects which increase public access
- Providing enhanced technical assistance to localities in the planning and development of access sites
- Creating partnerships with major private corporate land holders which offer public access opportunities

State Role
State government participants include: DCR, DEQ, DGIF, VIMS, VLCF, VOF, and the local governments in the tidal portion of the Commonwealth

The state’s role is to both develop access opportunities through its programs as well as assist in this endeavor at the local level. All of the participants noted above are working toward this commitment either directly through acquisition and development of sites or indirectly through grant and technical assistance programs to localities. Finding suitable areas to acquire and obtaining sufficient funds for both acquisitions and/or development of new access sites will continue to be a challenge in meeting this commitment. Without additional resources, it will be difficult to meet this commitment.

Progress/Outlook

Between 2003, Virginia added 9 new sites. During 2004, the following projects have been completed to acquire, develop, or enhance access opportunities in Virginia:

- Matthews County purchased 30 acres of Chesapeake Bay waterfront property adjacent to the Matthews County Public Beach. The new land adds 1000 linear feet of new beach for public use.
- In Essex and King and Queen Counties, the Middle Peninsula Chesapeake Bay Public Access Authority purchased the 274-acre Brown Tract along Dragon Run.

Additional Efforts
The 2002 Parks and Recreation Facilities Bond funds could produce at least two large sites in the bay region during the coming year. Other state and local efforts are in the planning stage and could result in additional sites being added. However, increased coordination among all the state agencies, local governments and other stake holders will be required in order to meet the 6 sites/year target through 2010. The key element for meeting this target, however will be money. By their very location and nature, the acquisition, development and management of public water access sites is expensive. Depending on the nature of the site and type of access provided, costs can range from $5,000 for a simple hand carry site to several hundred thousand for a trailer boat launch site, in addition to the land cost, which is increasing dramatically each year..

4.4.2 -
By 2005, increase the number of designated water trails in the Chesapeake Bay region by 500 miles.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The state's approach to the implementation of this commitment is three-fold. First, the state is developing designated water trails through efforts of the DCR. Second, they offer technical assistance to other groups and localities that are interested in trail development. Third, matching grant funds are being made available to localities and interest groups for water trail development.

State Role
State government participants include: DCR.

This commitment requires the addition of 500 miles of new water trails Baywide by 2005. It will be the state's role to not only develop water trails on its own but to work with river user groups and localities in the development of designated trails.

Progress/Outlook
Throughout the Chesapeake Bay region, more than 1498 miles have been designated as water trails by the affected states or the Gateways program. The goal of 500 additional miles has been exceeded and additional miles are being planned. In Virginia, about 467 miles have been designated as Water trails and 142 more miles are in the development stage. Additional segments, including the Capitan John Smith Water Trail are in the planning stages.

Based on projects already under way, Virginia should easily meets its target of 166 miles of designated water trail by 2005.

Additional Efforts
Following through on the projects underway and working with other proposals that are in the preliminary planning stages will ensure that Virginia exceeds its target by 2005.

4.4.3 -
Enhance interpretation materials that promote stewardship at natural, recreational, historical and cultural public access points within the Chesapeake Bay watershed.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Continue the development and distribution of interpretive materials at State owned lands offering public access. This is accomplished on a continuous basis at the DCR's state parks and natural area preserves and at DGIF facilities. Many sites owned by localities and non-profit organizations also provide this service.

State Role
State government participants include: DCR and DGIF.

This commitment is on going and has no specific numerical target. The State’s role will be to continue to develop interpretive and stewardship materials for distribution at public access sites. These can be in the form of new signage, brochures, exhibits and/or programs. Primary locations for these materials are at state parks, natural area preserves, state wildlife management areas and at state owned public boat ramps. Another major way in which this goal will be met is through the development of interpretive material for access sites that become a part of the Virginia Birding & Wildlife Trail.

Progress/Outlook
Since the program began in 2000, new interpretive exhibits have been developed in a number of the coastal state parks and interpretive programs are offered through out the summer season. In addition,

a new water trail guide to the Potomac River has been completed and distributed at appropriate sites along the river. A new water trail guide for the lower James River has been completed and is being distributed. Both guides contain important stewardship information. Also, the state has received a grant for the development of new interpretive kiosks at its coastal state parks. Dozens of sites have been described in the Virginia Birding Trail, and that document, as well as the Potomac River Water Trail Guide, James River Water Trail Guide, and the Chesapeake Bay Public Access Guide contain appropriate interpretive and stewardship information. This commitment is being met on a continuing basis.

Additional Efforts
No additional effort is required in this instance. The state, however, needs to continue its process of providing appropriate interpretive material and programs at its public use facilities.

4.4.4 -
By 2003, develop partnerships with at least 30 sites to enhance place-based interpretation of Bay-related resources and themes and stimulate volunteer involvement in resource restoration and conservation.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
This specific element, is tied to the National Park Service's Gateways program. Each site funded by the Gateways program must have place-based interpretation and become a component of the Gateways network. In addition, sites can apply to be a part of the network outside of the grant program. Sites can be identified as Hubs, Regional Information Centers, or Gateways. Therefore, each time a site meets the criteria to become a component of the Gateways network, it counts towards meeting this commitment.

State Role
State government participants include: DCR, DHR, local governments, and non-profits.

Individual site managers apply for and receive designation of sites as components of the Gateways network. Each site has a site-specific theme and where appropriate, an interpretive linkage to other gateway sites. Virginia (agencies, localities and non-profits) are applying for and receiving designation of sites as Gateways. This designation and development of the interpretive component meets the commitment.

Progress/Outlook
As of July 2004, Virginia has 42 designated Gateway or Regional Information Center sites. If

Congress funds the program for next year as anticipated, several additional gateway sites could be added. Virginia's portion of this goal has been met and sites will continue to be added to the network in the coming years.

Additional Efforts
Virginia should continue to support the efforts of the Gateway program by encouraging qualifying sites to apply for recognition as Gateway sites.

Stewardship and Community Engagement

5.1 - Education and Outreach

5.1.1 -

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The Bay Program's Communications and Education Subcommittee has developed a proposal to

State Role

State Role
State government participants include: DCR, DEQ, DGIF, MRC and VCE.

With other commitments in this section (5.0) dealing directly with formal education, this particular commitment focuses on mass media outreach and education of the general public at large. As the entity with the most direct link between the Bay Program partnership and the citizens of Virginia, the state has a critical role in making outreach a priority in order to facilitate public awareness and personal involvement.

Major examples of the many activities carried out by the state are the following: Virginia is a major partner in the CESC mass media campaign previously mentioned. Using Chesapeake Bay Implementation grant funds, the state has committed $200,000 to the project. DCR coordinated the hiring of the Academy for Educational Development as the advertising consultant through the state's RFP process. AED is one of the country's largest nonprofit organizations specializing in social marketing. DCR has also used CBIG funds to develop outreach pieces that complement the campaign.

Virginia is currently conducting a public process to develop nutrient and sediment tributary strategies in each of the commonwealth's major Chesapeake Bay tributary basins. Encouraging public involvement and engagement in the development of these strategies is a priority. Kickoff meetings were held in each basin and from those meetings tributary teams made up of local government officials and staff, SWCD personnel, PDC staff, conservation group representatives and individual citizens were created. The strategy will also go through a public review process before being finalized.

As mentioned previously, a grant program developed by DCR and DEQ, and administered by the Virginia Resources Use and Education Council, provided funding directly to schools and schools districts to provide meaningful outdoor experiences in schools throughout the state's Bay watershed.

Progress/Outlook
This commitment was purposely left open-ended in the hopes that it would provide continuing guidance rather than prescribing a short-term action. We are seeing stakeholders in Virginia’s portion of the watershed calling for more efforts to inform and involve citizens. The Washington DC pilot media campaign will also cover nearly the northern half of the state. This is the first campaign of its type, of this magnitude, in the state or in the Bay watershed.

As mentioned earlier, portions of Virginia Naturally have improved outreach as each of the state agencies has developed new materials and improved websites to increase the information available on the Bay and related watershed initiatives.

Additional Efforts
The states, as partners in the Bay Program, have done an adequate job of informing and involving targeted, affected groups of stakeholders. However, with the new commitments in Chesapeake 2000, the Chesapeake Bay Program cannot succeed, without the awareness and involvement of a much larger portion of the watershed’s population. A coordinated, mass media approach will be needed to

achieve this wider recognition and involvement. Efforts will be needed to take the Northern Virginia pilot program to other Virginia markets in the watershed (i.e. Richmond, Hampton Roads, Roanoke/Lynchburg)

5.1.2 -
Provide information to enhance the ability of citizen and community groups to participate in Bay restoration activities on their property and in their local watershed.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
A Bay Program task force the Chesapeake 2000 Watershed Commitments Task Force (CWiC) is coordinating development of an informational clearinghouse for citizen and community groups as well as helping facilitate watershed management planning throughout the Bay watershed.
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State Role
State government participants include: DCR, DEQ and VCE.

Again, partnering state agencies are the Bay Program's most direct link to citizen and community groups targeted. State representatives to CWiC will provide information and assist in development of the clearinghouse of watershed information available. In addition, most of the materials and services referenced in the clearinghouse will be those made available through state agencies. In addition, the state has been active in facilitating the development of watershed groups in the Chesapeake Bay tributary basins. Where watershed groups already exist, they have become active participants in providing information and data on nonpoint source issues.

Progress/Outlook
Virginia has been a leader in facilitating the concept of watershed management. The Virginia CWiC group, now renamed the Virginia Watershed Advisory Committee identified a number of key components desired in a comprehensive small watershed management plan. A Small Watershed Management Planning Guide was developed primarily for use by local governments. A second more comprehensive guide has also been developed for community groups or even smaller localities without planning expertise. DCR used Chesapeake Bay Implementation Grant funds in developing the guide. It will be of use to community and watershed groups that have not previously been involved in watershed planning initiatives. To help promote the guides and the concept of small watershed management planning to localities throughout the state's Bay basin, DCR staff is working on a 15-minute video geared toward local government officials. Again CBIG funds are being used. DCR continues to distribute a number of tools to assist watershed groups. These include storm stenciling kits, Adopt-A-Stream materials, watershed posters, a watershed video, and bumper

stickers. In addition watershed management training has been provided to community watershed organizations as well as funding to assist those groups.
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Additional Efforts
While a number of tools have been developed that are extremely useful to communities organizing watershed organizations, delivering those tools at the grassroots level is a very labor-intensive activity.
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5.1.3.1 -
Expand the use of new communications technologies to provide a comprehensive and interactive source of information on the Chesapeake Bay and its watershed for use by public and technical audiences.

System Administrator -

Year: **2004**

Approach to Implementation
At the CBP level the basic approach is to develop and implement memoranda of understanding and other mechanisms between the Bay Program and its partners to provide information in a common format.

State Role
All state agencies and institutions that have relevant information are or will be participants in meeting this commitment.

Most of the Bay and water quality and general environmental education (EE) programs, products and services that are available to Virginians have been compiled into a searchable on-line database, one of the most state comprehensive catalogs in the country. The Virginia Naturally web site http://www.vanaturally.com is a "seamless" collaboration of state and private groups that features a searchable calendar of educational events, stewardship opportunities and numerous educational resources. The web site also provides a framework for a virtual network of partners to share information and to communicate regularly and inexpensively with each other by mail.

In addition, local governments have a website (www.BayLogin.org) that enhances opportunities for interaction and technical information exchange relating to their activities which help implement the new agreement. (See assessment 5.2.6 for additional information on this website and its role.)

The state will support this commitment by making all pertinent data available through the Chesapeake Bay Program’s Chesapeake Information Management System (CIMS). The Bay

Program webmaster then takes appropriate information and makes it available to a more general audience through the CBP website, *www.chesapeakebay.net* .

Progress/Outlook
All involved state agencies have a CIMS Memorandum of Understanding or other mechanism in place to make sure information is being prepared in a CIMS compatible format.

Additional Efforts
The tracking of new commitments, particularly progress toward meeting our water quality commitments, will lead to the creation of volumes of new data.

5.1.3.2 -
By 2001, develop and maintain a web-based clearinghouse of this information specifically for use by educators.

System Administrator -

Year: **2004**

Approach to Implementation
The CBP funded a FY 2001 project under the Communications and Education Subcommittee to have a web-based educational clearinghouse developed. The project was bid through a CBP request for proposal. The Virginia Institute of Marine Science was the successful bidder and is in the process of developing the site. The result was ChesSIE (Chesapeake Science on the Internet for Educators). The site is located at *www.bayeducation.net.*

State Role
State government participants include: DCR, DEQ, DGIF, DOE and VIMS

Support the efforts of the CESC in maintaining this clearinghouse through participation on the subcommittee's Education Workgroup.

Progress/Outlook
The project was initiated in May 2001 with phase one completed November 1, 2001. The version site undergoes an annual peer review by teachers and is updated accordingly.

Additional Efforts
The CESC continues to seek funding to maintain the site through the CBP budget process

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5.1.4 -
Beginning with the class of 2005, provide a meaningful Bay or stream outdoor experience for

every school student in the watershed before graduation from high school.

5.1.5 -
Continue to forge partnerships with the Departments of Education and institutions of higher learning in each jurisdiction to integrate information about the Chesapeake Bay and its watershed into school curricula and university programs.

5.1.6 -
Provide students and teachers alike with opportunities to directly participate in local restoration and protection projects, and to support stewardship efforts in schools and on school property.

5.1.7 -
By 2002, expand citizen outreach efforts to more specifically include minority populations by, for example, highlighting cultural and historical ties to the Bay, and providing multi-cultural and multi-lingual educational materials on stewardship activities and Bay information.

System Administrator -

Year: **2004**

Approach to Implementation
The Chesapeake Bay Program has established an Environmental Justice Task Force (EJTF) to coordinate this and other commitments. The task force has developed specific strategies for short-term efforts to initiate better minority outreach. The Communications and Education Subcommittee is working with the EJTF to incorporate these strategies into their current outreach efforts.

State Role
The number of state agencies involved in this process will increase as the task becomes better defined. Currently several agencies are involved in decisions involving strategies and materials needed by participating on the CBP's Environmental Justice Task Force and Communications and Education Subcommittee.

Progress/Outlook
If minority outreach is to be effective and ongoing, it needs to be incorporated into the Bay Program's overall outreach plan, with special attention paid to the appropriate messages and vehicles for delivering those messages to minority populations. This is being addressed as part of a public perception survey being developed now by the CESC.

Additional Efforts
The state will use the results of the perception survey in reviewing all of its Bay related information strategies and materials with particular emphasis on needs in reaching minority populations.

5.2 - Community Engagement

5.2.1 -
Jurisdictions will work with local governments to identify small watersheds where community-based actions are essential to meeting Bay restoration goals—in particular wetlands, forested buffers, stream corridors and public access and work with local governments and community organizations to bring an appropriate range of Bay program resources to these communities.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
This commitment is already underway in most localities and watersheds. Local governments in partnership with conservation groups, civic organizations through Watershed forums (e.g. WCRs) have been working to involve local citizens in watershed restoration, enhancement and awareness initiatives. The Rappahannock River Basin Commission is the one legislatively created coordinating body that has been created to date and which can serve a function similar to the WCRs.

- Use regional staff to establish local relationships, establish communication on watershed level, and analyze needs within watershed
- Regional staff work with local governments to develop tributary strategies that will utilize wetland restoration, forested buffers and other best management practices to reduce nonpoint source pollution
- Field staff will promote watershed management planning guides as well as other technical guides as effective tools to meet this commitment
- Supplement local engagement efforts with Mass Media Campaign

State Role
State government participants include: CBLAD, DCR, DEQ, DGIF and DOF.

Virginia's primary role is to provide guidance and support to local governments on Bay Program issues and foster community based watershed activities. The jurisdictions will serve as the primary conduit for technical and financial assistance to local governments on bay related issues.

Progress/Outlook
Community based environmental organizations in coordination with local government and state agencies have proven most effective in identifying restoration goals based on unique conditions of the watershed in which they are active. With proper coordination of efforts and communication of these efforts to local citizens, the cooperative networks (watershed forums) can become a major Bay

Program resource to their communities. In most watersheds, this network is being facilitated through the WCR. DCR developed a web-page (*www.dcr.state.va.us/waterways*) to provide citizens information about local watershed based initiatives and nonpoint source pollution prevention.

- Supporting community watershed organizations
- Providing 'minigrants' to support implementation
- Revised CBPA technical assistance implementation manual (addressing buffers, silviculture, exceptions, etc.)
- 6 Watershed Management Planning workshops were conducted in May 2003 to targeted audiences of local governments and community watershed organizations
- The state is working with the CBP to develop and conduct a Community Watershed Dialogue, as a follow up to interested communities from the May 2003 workshops

Additional Efforts

State agencies, along side the localities, will need to foster increased awareness of water quality initiatives under way in the watersheds. Initiatives such as placing signs signifying water quality studies (i.e., " Total Maximum Daily Load (TMDL) Study Area"), environmental monitoring, restoration projects or other environmental improvement activities can create increased interest and awareness for its citizens. Further, increased recognition of the groups that are actively participating in the activities is needed.

Localities are working with state agencies to develop Tributary Strategies that address nonpoint source pollution reductions via watershed management and sound land use management principles.

5.2.2 -
Enhance funding for locally-based programs that pursue restoration and protection projects that will assist in the achievement of the goals of this and past agreements.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation

Virginia's natural resource agencies are responsible for coordinating the overall effort of sustaining locally driven programs and projects relative to the new agreement. Virginia will seek to secure funding for such programs and assist organizations in program development and project completion. The state is working with the CBP to identify appropriate funding sources for localities, as well as ways the CBP can help provide additional support.

State Role

Under the Water Quality Improvement Act, DCR funds a variety of small watershed restoration and

pollution reduction projects.

Progress/Outlook
A comprehensive matrix of available state, federal and non-profit funding sources has been developed and was disseminated to interested stakeholders. However, lack of funding and staffing resources can severely limit future progress of this commitment.

Additional Efforts
The most critical aspect of this goal is assuring the sustainability of the locally based programs and insuring that sufficient resources are available to maintain viability of the projects.

The National Fish and Wildlife Foundation (NFWF) is targeting the Small Watershed and Legacy Grants Program to those groups working to develop and/or implement watershed management plans that pursue restoration and protection projects in accordance with Chesapeake Bay Agreements. Virginia participates in the NFWF grant review process for these funds to ensure localities and CWOs receive opportunities to implement such projects.

5.2.3 -
By 2001, develop and maintain a clearinghouse for information on local watershed restoration efforts, including financial and technical assistance.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The Bay Program subcommittees are coordinating with CWiC to develop a Bay wide clearinghouse. The commitment is currently being met on a smaller scale by way of local planning district commissions or other multi-jurisdictional commissions or forums via Internet sites and list servers; this however is not well coordinated. In addition to local clearinghouses, the Chesapeake Bay Program currently has an online information system. The Chesapeake Information Management System (CIMS) is a clearinghouse of publications, reports, fact sheets, and special interest studies in the Chesapeake Bay and tributaries.

State Role
Virginia will continue to support and provide coordination where feasible to local clearinghouse efforts, contribute to CIMS and actively participate in the relevant Bay Program subcommittees.

Progress/Outlook
Virginia agencies are documenting projects, tracking progress and calculating nutrient reductions. The successful maintenance of this effort requires expansion of existing state agency GIS and data collection staff and coordination with the Bay Program to ensure that the data gathered is consistent with other jurisdictions.
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Additional Efforts
Additional resources at state and local levels will be needed. Data standards must be established to assure consistency and transferability. Capability to effectively track NPS pollution and reductions does not yet exist in most local governments, and systems among local governments are not compatible with each other and state systems. Local governments will require substantial funding to establish this infrastructure. State government systems also are minimal and require expansion to address the various needs of C2K.

5.2.4 -
By 2002, each signatory jurisdiction will offer easily accessible information suitable for analyzing environmental conditions at a small watershed scale.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The Internet will be the principal medium for providing access to suitable information, and state agencies with such information will develop and maintain publicly accessible websites. In order to maximize ease of access to data that may be of use for small watershed planning, Internet browser access is necessary. For the data to be retrievable in units that met the spatial requirements of the requestors, or to at least reduce the data to be retrieved per request, some form of querying of the data prior to retrieval is expected. To make all data relatable to one another in a spatial framework, the data must be tied to consistent standardized spatial unit references.

State Role
This is an evolving task at the state level. Virginia agencies are working to increase coordination among their respective data systems and to make it accessible and useful for small watershed efforts.

There are a number of Virginia agencies with data that are of use in small watershed planning efforts, including CBLAD, DEQ, DCR, VIMS, DOH, DOF, and DGIF.

Progress/Outlook
DCR has implemented the above approach with some of its data. To date that includes making land

cover, NPS nutrient loadings, NPS nutrient rankings, best management practices (BMP), conservation reserve enhancement practices (CREP), and confined animal data available by various standard reporting units, such as small watersheds, basins, Chesapeake Bay model segments, Soil and Water Conservation Districts, and jurisdictions of the Commonwealth. Access is made through the appropriate program specific pages of the DCR web site. Data records output from queries built using menus can be viewed or retrieved for use in a spreadsheet, etc. at the user end. In addition, for the NPS Assessment information web based map services provide graphical representations of statewide conditions.

DCR's Natural Heritage Program makes information on natural heritage resource locations and conservation sites available by a number of standard reporting units, including small watersheds, basins, physiographic regions, and jurisdictions of the Commonwealth. By fall 2004 DCR will have available an ArcIMS website with the ability to identify and get reports on natural heritage resources and conservation sites in the vicinity of an entered polygon. This website will be available by subscription to localities, agencies, and other conservation partners.

DCR has also completed the pilot phase of the Virginia Conservation Lands Needs Assessment (VCLNA), featuring a Natural Landscape Assessment (NLA) for the Coastal Zone. These data are being distributed on CDs.

No effort has been made to make all state agencies use a similar system of data retrieval.

Additional Efforts

Most of the state data is at a scale that, while at least large enough to be pertinent to these efforts, may often lack the detail needed for watershed analysis and implementation of corrective actions. Local or district input to complete the data inventory would be necessary in many cases.

More of the data developed and maintained by state agencies needs to be browser accessible and geocoded to standard spatial units.

The Virginia Geographic Information Network (VGIN), now part of the newly created Virginia Information Technology Agency (VITA), will be seeking to enhance its Internet presence to identify and link up data made available by various state agencies.

DCR is completing the development of the Virginia portion of the National Watershed Boundary Dataset (NWBD), which will define watersheds more precisely and at a finer scale than the previous system of statewide use does.

5.2.5 -

Strengthen the Chesapeake Bay Program's ability to incorporate local governments into the policy decision-making process. By 2001, complete a reevaluation of the Local Government Participation Action Plan and make necessary changes in Bay program and jurisdictional functions based upon the reevaluation.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Mechanisms are in place through existing state programs, watershed forums and the CBP's Local Government Advisory Committee (LGAC). It is the intent to maximize these avenues to engender greater participation.

State Role
State government participants include: CBLAD, DCR and DEQ.

Virginia natural resources agencies will serve as the primary avenue through which financial, technical and educational resources are developed and delivered to the localities. Further, agencies will continue to actively participate on relevant Bay Program committees.

Progress/Outlook
Virginia agencies have the necessary contacts with localities to implement this commitment. Mobilizing these contacts will involve strengthening stakeholder groups to help shape the LGPAP to ensure it is effective. The LGPAP also needs to be crafted with Implementation Committee involvement, as a joint project.

Additional Efforts

5.2.6 -
Improve methods of communication with and among local governments on Bay issues and provide adequate opportunities for discussion of key issues.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
The watershed forums, soil and water conservation districts, basin commissions in the Bay watershed and planning district commissions, are the major avenues through which local governments can be represented and informed on Bay issues.

The Local Government Advisory Committee (LGAC) of the CBP recently launched an important new website: www.BayLogin.org . The website is anticipated to be an important tool to enhance and

foster new communication between local governments and the Bay program. While there are limitations to internet-based applications, Bay LOGIN services such as news flashes, newsletters, queries, surveys, archives, and links will enhance the ability of local governments to participate in Bay watershed activities and decisions.

The CBP, in cooperation with LGAC, will develop for all CBP task forces and workgroups a checklist that outlines positive actions that should be undertaken to meet the spirit of intergovernmental cooperation outlined in the new agreement and the draft revision of the CBP Local Government Participation Action Plan. This will ensure that task forces and work groups are aware of the goals of the LGAP and that they have a meaningful way to determine whether they are helping to implement its goals.

State Role

State government participants include: CBLAD, DCR and DEQ. The State needs to support the development of the CBP "tool kit" and other resources, including electronic transmission capabilities, to improve state delivery of CBP message to local governments. CWiC was the CBP entity overseeing this effort, however in 2003 this committee completed its assigned tasks and was sunset. Watershed management planning issues are now addressed by a workgroup of LGSS, the Watershed Assistance Workgroup, on which DCR staff participate.

Progress/Outlook

The state has supported the CBP CWiC in efforts to develop outreach messages to local governments, as well as the "tool kit" and the development of watershed management planning webpages. These webpages will provide links to numerous resources, while explaining the benefits of watershed management planning.

The Secretary of Natural Resources developed a new natural resources website to share information with the public. This website provides information on C2K, Tributary Strategies and the Stewardship Virginia campaign. Additionally, information about all of Virginia's natural resource agencies can be accessed via this website. (http://www.naturalresources.virginia.gov/) The Annual Watershed Management Conference has also proven to be an effective mechanism for enhancing communication education with and among local governments.

Additional Efforts

Funding is needed to equip local governments with the infrastructure needed to carry out C2K and CBP initiatives.

5.2.7 -

By 2001, identify community watershed organizations and partnerships. Assist in establishing new organizations and partnerships where interest exists. These partners will be important to successful watershed management efforts in distributing information to the public, and engaging the public in the Bay restoration and preservation effort.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Both Virginia and the CBP have committed extensive effort to this process. Existing community watershed organizations were identified through a comprehensive survey completed by the CBP's CWiC. This data is being used to strengthen local partnerships and forward watershed management efforts.

Additionally, DCR's Watershed Field Coordinators maintain a database of community watershed organizations and provide ongoing assistance to groups attempting to build watershed organizations.

State Role
State government participants include: CBLAD and DCR.

Virginia is working closely with existing watershed organizations and encouraging the development of new organizations where interest exists. To support this effort, tools are being developed in cooperation with the CBP to sustain community watershed organizations.

DCR offers training to watershed management organizations, and is enhancing its database about these organizations to improve the state's commitment to grass-roots environmental interests.

Progress/Outlook
DCR provides funding (when available) to such projects through the 'minigrants' program to community groups working to form or strengthen watershed organizations. Projects funded demonstrate capacity to build a successful partnership based on needs within the community to restore habitat and water quality through developing and implementing watershed management plans.

Additional Efforts
Virginia will continue its efforts in creating, maintaining and supporting existing partnerships.

The National Fish and Wildlife Foundation also provides funding support for these types of projects to successful applicants to the Small Watershed and Legacy Grants program.

5.2.8 -
By 2005, identify specific actions to address the challenges of communities where historically poor water quality and environmental conditions have contributed to disproportional health, economic or social impacts.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
Several existing programs address this commitment, including funding loan opportunities and community development block grants. DCR's Adopt-A-Stream and Storm Drain Stenciling programs work with underserved communities to educate citizens about nonpoint source pollution.

We are also awaiting the recommendation of the Chesapeake Bay Program Environmental Justice Taskforce to determine what additional strategies might be appropriate.

State Role
A number of state agencies are working together to evolve an approach to this commitment. In particular, the state will be determining how to relate this commitment to work proceeding and planned for the Elizabeth River, which is one of three toxic contaminants "areas of concern" designated by the Chesapeake Bay Program.

Progress/Outlook
This commitment requires a coordinated effort to identify parameters of comparison. There has been limited progress towards meeting this commitment, however with the recent renewal of VA's commitment to the Elizabeth River Project, state agencies will be working closely with ERP, the cities of Chesapeake, Portsmouth, and Norfolk to identify these actions.

Additional Efforts
Additional resources will be needed at the basin level to collect and analyze data and identify and implement resulting actions.

5.3 - Government by Example

5.3.1 -
By 2002, each signatory will put in place processes to: 1. Ensure that all properties owned, managed or leased by the signatories are developed, redeveloped and used in a manner consistent with all relevant goals, commitments and guidance of this Agreement. 2. Ensure that the design and construction of signatory-funded development and redevelopment projects are consistent with all relevant goals, commitments and guidance of this Agreement.

5.3.2 -
Expand the use of clean vehicle technologies and fuels on the basis of emission reductions, so that a significantly greater percentage of each signatory government's fleet of vehicles use some form of clean technology.

Department of General Services -

Year: **2004**

Approach to Implementation
The Department of General Services reports annually to the Department of Energy regarding the actual use of alternative fuels in Alternative Fuel Vehicles (AFVs). Improvements are needed in this area.

State Role
The Department of General Services manages this program for the Commonwealth.

Progress/Outlook
The state is complying with the requirement of the Energy Policy Act to go through a phased replacement process whereby 75% of vehicles purchased for use in the areas affected by the Act will be capable of operating on an alternative fuel. Since 1998, the state has been purchases Alternative Fuel Vehicles (AFVs) that are powered by both gasoline and natural gas.

Additional Efforts
At the national level improvements need to be made in the utility of generally available alternative fueled vehicles. Within the Commonwealth, improvements in the number, distribution and accessibility of natural gas fueling sites would make it more likely that the use of the AFVs in the natural gas mode would increase.
Efforts will be initiated during the coming year to increase the use of compressed natural gas in the bi-fuel vehicles within the state's fleet DGS central fleet has begun a program to ensure their bi-fuel vehicles are refueled with CNG after every use, to ensure that CNG use will increase in state vehicles.

5.3.3 -
By 2001, develop an Executive Council Directive to address stormwater management to control nutrient, sediment and chemical contaminant runoff from state, federal and District owned land.

System Administrator -

Year: **2004**

Approach to Implementation

State Role

Progress/Outlook
In December 2001, the Executive Council of the Chesapeake Bay Program signed Directive No. 01-1, Managing Storm Water on State, Federal and District-owned Lands and Facilities.

This directive can be viewed at the following websites:
http://www.cblad.virginia.gov/docs/cbpswmdirective.pdf
http://www.chesapeakebay.net/pubs/stormwater_directive_120301.pdf

Additional Efforts

This commitment was completed December 2001.

Department of Conservation and Recreation -

Year: **2004**

Approach to Implementation
(This commitment is completed.)

In 2001, a task group was assembled to develop a directive for consideration by the Chesapeake Bay Program's Implementation Committee, Principals' Staff Committee and, finally, the Executive Council. The task group was composed of representatives of the Chesapeake Bay agreement signatories and other interested parties.

State Role
State government participants included: CBLAD, DCR, DEQ, DGS and VDOT. While the task group was a CBP effort, a Virginia staff person chaired the group and staff of other state agencies participated as well.

Progress/Outlook
On December 3, 2001 the Executive Council of the Chesapeake Bay Program signed Directive No. 01-1, Managing Storm Water on State, Federal and District-Owned Lands and Facilities . The directive took effect immediately. The directive contains guidance on actions to be taken in six areas related to storm water management:

- Create an inventory of target public lands
- Demonstrate how to manage storm water
- Analyze the economics and effectiveness of demonstration projects

- Educate others on how to manage storm water
- Develop innovative storm water technologies
- Coordinate with communities and local governments
- Measuring progress

Additional Efforts
The adoption of the directive by the Executive Council completes this particular commitment. Implementation of the directive, of course, will be an ongoing matter.

5.4 - Partnerships

5.4.1 -
Strengthen partnerships with Delaware, New York and West Virginia by promoting communication and by seeking agreements on issues of mutual concern.

System Administrator -

Year: **2004**

Approach to Implementation
The Chesapeake Bay Program is leading implementation of this commitment.

State Role
N/A

Progress/Outlook
N/A

Additional Efforts
N/A

5.4.2 -
Work with non-signatory Bay states to establish links with community-based organizations throughout the Bay watershed.

System Administrator -

Year: **2004**

Approach to Implementation
The Chesapeake Bay Program is leading implementation of this commitment.

State Role
N/A

Progress/Outlook
Through participation in the CBP, the state is working to strengthen these relationships and meet water quality requirements.

Additional Efforts