Annual Report on the Implementation of the Chesapeake 2000 Agreement

Prepared by the Secretary of Natural Resources
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Common Abbreviations

Terminology:

BMP – Best Management Practice
C2K – Chesapeake 2000 Agreement
CREP – Conservation Reserve Enhancement Program
CWO – community watershed organization
GIS – Geographical Information Systems
LID – Low Impact Development
NPS – Non Point Source (pollution)
RPA – Resource Protection Area
SAV – Submerged Aquatic Vegetation
TMDL – Total Maximum Daily Load
WQIA (**WQIF**)– Water Quality Improvement Act (Fund)

Government Agencies and Organizations:

ASMFC – Atlantic States Marine Fisheries Commission
CBLAB – Chesapeake Bay Local Assistance Board
CBLAD (**or DCBLA**)– Chesapeake Bay Local Assistance Division
CBP – Chesapeake Bay Program
CWiC – Chesapeake Watershed Implementation Committee
DCR – Virginia Department of Conservation and Recreation
DEQ – Virginia Department of Environmental Quality
DGIF (**or VDGIF**)– Virginia Department of Game and Inland Fisheries
DGS – Virginia Department of General Services
DHCD – Virginia Department of Housing and Community Development
DOC – Virginia Department of Corrections
DOF – Virginia Department of Forestry
DSWC (**or Division**) – DCR- Division of Soil and Water Conservation
EPA – United States Environmental Protection Agency
FSA – Farm Service Agency (formerly ASCS)
MRC (**or VMRC**) – Virginia Marine Resources Commission
NACD – National Association of Conservation Districts
NOAA - National Oceanic and Atmospheric Administration
NRCS – Natural Resources Conservation Service (formerly SCS)
ODU – Old Dominion University
OSNR (SONR or SNR) – Office of Secretary of Natural Resources
PDC – Planning District Commission
RC&D – Resource Conservation and Development Council
SEAS – Shoreline Erosion Advisory Service
SWCD – Soil and Water Conservation District
COE (ACOE or The Corps) – United States Army Corps of Engineers
USDA – United States Department of Agriculture
USFS – United States Forest Service
USFWS – United States Fish and Wildlife Service
USGS – United States Geological Survey
VACO – Virginia Association of Counties
VASWCD – Virginia Association of Soil and Water Conservation Districts
VCE – Virginia Cooperative Extension
VCU – Virginia Commonwealth University
VDACS – Virginia Department of Agriculture & Consumer Services
VDH – Virginia Department of Health
VDOT – Virginia Department of Transportation
VGIN – Virginia Geographic Information Network
VIMS – Virginia Institute of Marine Science
VLCF – Virginia Land Conservation Foundation
VML – Virginia Municipal League
VOF – Virginia Outdoors Foundation

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: **2005**

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 seventy, 3-dimensional reef sites have been constructed Baywide since 1993.
- Stock assessment of current oyster populations indicate similar populations of oysters in 2004 as in 2003, 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

3177

Acres of sanctuary reefs restored

83

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: **2005**

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: **2005**

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

- In accordance with the Virginia Nonindigenous Aquatic Nuisance Species Act, DGIF has proposed to add three additional species to the list of Nonindigenous aquatic nuisance species; i.e., the black carp, New Zealand mudsnail, and rusty crayfish.
- The Virginia Invasive Species Advisory Committee has developed a preliminary draft Virginia Invasive Species Management Plan that will be reviewed by the Council in 2005.
- DGIF is continuing to pursue eradication of the infestation of zebra mussels of Millbrook Quarry in Prince William County. A Request for Proposals was released in November 2004, and an interagency panel of experts evaluated the proposals submitted. Aquatic Sciences, L.P. was selected as the contractor, and the process selected to eradicate the zebra mussels entails infusion of a solution of potash (KCl) into the entire water column of the quarry. Public review of the Environmental Assessment and Coastal Zone Management Consistency Certification, and eradication of the zebra mussel infestation, is anticipated to occur in late summer and fall 2005.
- Lake Manassas, the dam at Lake Manassas, and Broad Run were again surveyed in 2005 to ensure that zebra mussels had not escaped from the quarry into adjacent open waters. Millbrook Quarry remains as the only known occurrence of zebra mussels in the Commonwealth.
- DGIF is developing a poster regarding zebra mussel economic and environmental impacts, and avenues for prevention of their accidental establishment in the Commonwealth. The poster is anticipated to be available in fall 2005, concurrent with public review of the Millbrook Quarry zebra mussel eradication effort.
- Twenty northern snakeheads were collected from Virginia waters in 2004, including 88-mm young-of-year, primarily in Virginia tributaries of the Potomac. Most of these 20 fish were submitted to the Smithsonian Institution for genetics testing. Mitochondrial DNA analysis of a subset of the Potomac River fish suggested most were offspring of either a single pair of breeding adults or the offspring from multiple adult female siblings. Circumstantial evidence of reproduction includes numerous gravid females and one young-of-year fish sampled. Size and age distribution indicate an established population.
- DGIF established a Snakehead Fish Incident Management Team (fisheries, wildlife diversity, law enforcement & communications) to coordinate DGIF response to the discovery of snakehead fishes in Virginia waters.
- DGIF developed response protocols to handle inquiries from anglers, established toll-free number to facilitate reporting of collections, posted information at marinas and on our Web

site, and developed an outreach campaign to educate Virginians about the threats posed by snakehead fish and comparisons with similar-appearing native species. To date nearly 200 newspaper articles, radio interviews, and TV interviews have occurred on this topic.

- DGIF convened two meetings to coordinate interstate efforts with MD Dept of Natural Resources, DC Division of Fish and Wildlife, Potomac River Fisheries Commission, Interstate Commission on the Potomac River Basin, US Fish and Wildlife Service and US Geological Survey.
- An additional 47 northern snakeheads were collected in 2005 (bringing the known total to 67 through early September, 2005). Collections in 2005 included two cohorts not previously sampled including numerous young-of-year (2005 year class) and age 2 fish (2003 year class). Overall, size ranges were similar to 2004 and included five year-classes. Gravid females were collected from early May through September, and efforts were made to obtain GSI data. Early analysis indicated a protracted spawning season. Variable young-of-year sizes were consistent with either multiple spawns and/or a protracted spawning season.
- Many northern snakeheads sampled in 2005 were collected by electrofishing in Dogue Creek by VDGIF and USFWS crews; however, anglers continued to provide creeled fish. Range expansion appeared minimal with the single notable exception of one northern snakehead angled from the upper Anacostia River. If this individual was part of the Potomac population, this represents a substantial increase in colonized area.
- Posters in English and three Asian languages were produced warning of illegal and ecological consequences of introducing nonnative fish to local waters.
- Virginia law was amended to allow anglers who catch a northern snakehead to retain the fish for consumption or mounting purposes provided they immediately kill the fish and notify VDGIF of the catch.
- Virginia's snakehead infestation is unique; there are only two other established populations of snakehead fish in the U.S. - a recently-established population of bulls eye snakeheads in Florida (near Miami), and giant snakeheads in Hawaii (population established before 1900 for food source). Populations of northern snakeheads have been very recently confirmed in PA (near Philadelphia) and MA. Very little information is available about the response of the species in new systems or about its biology in general.
- We remain uncertain how snakehead fish and zebra mussels were introduced into the Commonwealth; DGIF Law Enforcement officers and USFWS agents have continued to investigate these issues.
- 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

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: **2005**

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 was originally set to end in 2003 but the Chesapeake Bay Program moved the ending date to 2004 to accomplish projects throughout the Bay watershed that had been delayed for various reasons. Virginia achieved, and exceeded, its portion of the "Ten-Year" Goal of 415.5 miles (418 miles reopened).

- Embrey Dam on the Rappahannock was breached in 2004 making it passable. The 1855 crib dam and the 1910 Embrey Dam were both completely removed just prior to the migration season of 2005; reopened 106 miles of the Rappahannock and Rapidan rivers.
- Brasfield Dam (Appomattox/FERC) fish elevator was completed just prior to the migration season of 2005; lack of operation of the Harvell Dam fishway (FERC license# 8657) has delayed operation of this lift; this project reopens 120.1 miles (with fishway operating properly).
- In the fall of 2004, the City of Harrisonburg removed the remainder of McGayhesville Dam on the South Fork of the Shenandoah River. This improved resident fish and catadromous American eel passage. Over 30 miles of the South Fork Shenandoah and its tributaries are now reopened although not accessible by anadromous fishes due to the natural barrier at Great Falls on the Potomac River.
- A pool and weir fishway was constructed on White Oak Run at the Rt. 601 road crossing. White Oak Run is a tributary of the tidal Rappahannock just downstream of Fredericksburg. Several construction errors need to be corrected, but when completed this project will provide for passage of herring that are known to reach this site.
- Harvell Dam Denil fishway (FERC# 8657) was unfortunately not operated in 2005 due to ongoing revocation of license proceedings. Fish passage mitigation is unlikely to be required by FERC. Dam removal is the best option here to ensure fish passage.

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. Hickory shad, blueback herring and striped bass were all documented upstream of the breach in Embrey Dam in spring 2005. 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 2005 due to extenuating circumstances stemming from the licensee facing revocation of their FERC license (8657) 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 on the Rappahannock River (Potomac brood source) above Embrey Dam. To date 118.8 million tagged shad fry have been released: James – 84.8 million, Pamunkey – 24.9 million, Rappahannock – 7.8 million, and Potomac – 1.3 million. The James total included the stocking of several additional tributaries in 2005. The Rivanna, Slate, Hardware and Appomattox rivers received a total of 2.72 million fry. 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

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. 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: **2005**

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 participated in the Chesapeake Bay Program's effort to establish a new fish passage goal for the next ten years. The new fish passage goal begins in 2005 and extends through 2014. Chesapeake Bay jurisdictions have pledged to complete 100 fish passage and/or dam removal projects, which will reopen 1,000 miles of high-quality tributary habitat to migratory and resident fishes. The goal also requires that fish passage be provided at all new dams that block fish migration to the fullest extent possible. Additionally, 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, an engineering study was completed in December 2004 concerning 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. 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 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: **2005**

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 statewide harvest moratorium, as the coastal fishery was closed to all Atlantic coastal states in 2004. American shad fry are stocked annually in the James, Pamunkey and Rappahannock rivers to enhance the population. Numbers of hatchery produced American shad continue to increase annually in the James River.
- 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.
- The status of river herring stocks (alewife and blueback herring) is unknown but very depleted in most coastal states. The Atlantic States Marine Fisheries Commission has initiated discussions on future management measures for the herring species; however, no funding is available for an amendment to the management plan.
- 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 was eliminated in late 2004 (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: **2005**

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, Chesapeake Bay, and coastal 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. In 2004, a coastal closure was added to the Bay-wide moratorium 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 and a statewide moratorium. Ultimately, a total ban on fishing for American shad in Virginia 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: **2005**

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.

Although funding for the survey has been sporadic, the Virginia Institute of Marine Science CHESMMAP trawl survey provide valuable information on the relative abundance and feeding ecologies of many important finfish species. The survey is now funded through mid-2006.

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: **2005**

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); Adult finfish trawl survey (CHESMMAP) conducted by VIMS, will need additional funding beyond mid-2006.
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.

The ASMFC is developing a multispecies Virtual population Analysis, which will be completed and available for peer review in December 2005.

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: **2005**

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: **2005**

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.
A new and improved blue crab analytical stock assessment is due to be completed by December 2005.The assessment will describe current rates of exploitation and abundance levels of the baywide 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 2005.
- The Baywide target of a 15% reduction in harvest by 2003 has been achieved, but there has been a continued low level of abundance of all size groups of blue crab. The goal of achieving a doubling in the spawning stock has not occurred.
- Virginia has met its 15% reduction target. Throughout the Bay fisheries, a considerable amount of latent effort exists, which, if activated, could complicate restoration efforts for this stock.
- 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 2005 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 -
Recommit to the existing goal of protecting and restoring 114,000 acres of submerged aquatic vegetation (SAV).

Marine Resources Commission -

Year: **2005**

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
72935

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: **2005**

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

For 2004, 72,935 acres of SAV were mapped in Chesapeake Bay and its tributaries. This acreage represents 39% of the 185,000-acre goal. Acreage has increased 34,724 (91%) since the 1984 low point.

Review of photographic evidence from a number of sites dating back to 1937 suggests that close to 200,000 acres of SAV may have historically grown along the shoreline of the Bay. However, by 1984, the SAV community had fallen to a low of about 38,000 acres. Increasing quantities of nutrients, such as phosphorus and nitrogen, as well sediment in the water have choked or eliminated the growth of SAV in many areas, and contributed to declines in SAV acreage throughout the Bay. Bay grasses are a unique yardstick for measuring the progress of Chesapeake Bay restoration efforts,

because they are not under harvest pressure and their health is closely linked to water quality. Increases in Bay grasses are expected in areas where water quality conditions are improving.
The aerial survey is flown from late spring to early fall. The photography is processed in the fall and winter, and preliminary area totals are usually available the following spring.

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: **2005**

Approach to Implementation
See Commitment 2.1.2.

State Role
See Commitment 2.1.2.

Progress/Outlook
For 2004, 72,935 acres of SAV were mapped in Chesapeake Bay and its tributaries. This acreage represents 39% of the 185,000-acre goal. Acreage has increased 34,724 (91%) since the 1984 low point.
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, Division of Soil and Water Conservation -

Year: **2005**

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 (DCBLA & DSWC)

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

- The *Local Watershed Management Planning in Virginia* guidebook is being reprinted for distribution.
- A companion tool to the guidebook, a DVD entitled *Catch the Watershed Wave*, is in the post-production stage and will be available for distribution according to the distribution plan to local officials.

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. The Linking Land Use to Watershed Management Planning workshops are to be conducted in February 2006. Two watersheds, The York and the Shenandoah, were targeted and local partners are becoming engaged. In partnership w/the CBP, workshop agendas are in place and invitations will begin soon. From the 2005 General Assembly appropriation to the VA Water Quality Improvement Fund, $3 million is designated for new Cooperative Non Point Source Programs with localities. Capacity building projects and programs related to Tributary Strategy implementation at local levels, including Watershed Management Planning will be included in funding priorities. 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.

Department of Conservation and Recreation -

Year: **2005**

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

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

This effort will continue in early 2006 with a pilot workshop targeting locally elected officials, Planning District Commissions, planning commissioners, zoning administrators, soil and water district directors and other stakeholders located throughout the Shenandoah watershed. It is hoped that if successful this workshop can be repeated in other regions. The workshops are intended to introduce local stakeholders to the integration of land use and watershed planning in an effort to further efforts that address non-point source pollution at the local level. In addition, during October 2005 and February and April 2006, three workshops will be held in the Middle Peninsula and Hampton Roads regions of Virginia to train local planning commissioners, Board/Council members and local planners on green infrastructure planning. The purpose of both the land use and watershed planning and the green infrastructure planning initiatives is to move localities in a positive direction to enhance their citizens' quality of life and toward achieving the goals of Virginia's Tributary Strategies.

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.

System Administrator -

Year: **2005**

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: 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. 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.
The Stream Corridor Restoration Goals Workshop on May 7, 2003 in Baltimore, Maryland, highlighted areas of concern with the concept of stream corridor restoration. The primary areas of concern were:

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

The Stream Corridor Restoration Taskgroup was formed in 2005 to determine the status and conduct evaluations of stream corridor restoration goal setting. In the initial stages of the Taskgroup, it was determined that the four areas of concern highlighted in the May 2003 Workshop needed to be addressed. The most critical of the items were defining stream corridor and stream corridor restoration.
Governor Warner signed Executive Order 90(05) creating the Virginia Stream Alliance (The Alliance) to formalize and coordinate a Stream Restoration Initiative for the Commonwealth of Virginia. The Alliance should coordinate with the Taskgroup to develop definitions and guidance for the four areas of concern identified by the May 2003 Workshop. In addition, the Alliance should provide guidance in the establishment of basin-wide stream and stream corridor restoration goals.

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.

DCR- Division of Soil and Water Conservation

Year: **2005**

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: DCR, DEQ, DGIF, DOF and VIMS. Virginia continues to seek 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. New Cooperative Agreements between DCR and local entities will be developed in the coming fiscal year, focusing on NPS Tributary Strategy reductions by institutionalizing change at the local level.

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. Establishing local stream corridor programs is one of the types of projects currently being recommended for proposals of Cooperative NPS Program funding.

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: **2005**

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.

DCR – Division of Soil and Water Conservation -

Year: **2005**

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: DCR, DEQ, DGIF and DOF. Virginia agencies will assist in the development of stream corridor restoration goals by providing technical expertise to task forces working on this commitment. Further, it is the responsibility of the agencies to provide direction to watershed forums in the development of the basin wide goals.

Progress/Outlook
Currently, DCR has available $100,000 in federal implementation funds from the EPA Chesapeake Bay Program to develop a model program for local governments in the restoration of riparian buffers on non-agricultural and non-silvicultural public lands. DCR's Division of the Chesapeake Bay Local Assistance is offering this financial assistance to up to four local governments in the Chesapeake Bay Watershed willing to restore at least 35 acres of riparian buffer spanning roughly 2.5 miles on public lands for the purpose of providing public demonstration sites with an educational component. By encouraging the restoration of functioning riparian buffers, DCR hopes to help meet not only the goals of the Chesapeake Bay Preservation Act, but also Virginia's Tributary Strategy and other goals identified in the Chesapeake 2000 Agreement.

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 technical assistance associated with stream restoration and stream corridor restoration guidance and goals. 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 funding resources also will be needed for urban, suburban and other lands not qualifying for CREP.
See "Progress/Outlook" section above.

Department of Conservation and Recreation -

Year: **2005**

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: 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 basin wide 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: **2005**

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)
Non-tidal Emergent	23.6	24.5	0.9
Non-tidal scrub/shrub	11.9	8.8	(3.1)
Non-tidal forested	75.6	310.5	234.9
Total Wetlands	111.1	343.8	232.7

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 a centralized database on the VIMS website to track nontidal wetland acreage by watershed and wetland losses and gains through permitting programs and voluntary efforts.
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.

Department of Game and Inland Fisheries -

Year: **2005**

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.

Ongoing

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.

Ongoing

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.

Ongoing

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.

System Administrator -

Year: **2005**

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. A revision is currently under development and should be completed by January 2006. 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 Executive Order was revised in July 2005 to reflect the new mileage goal, an urban canopy goal, and other conservation measures. 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 has increased the total goal numbers for riparian forest buffers.

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.

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.

System Administrator -

Year: **2005**

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 (VLCF) has issued an RFP for conservation easement and fee simple acquisition in July 2005. Over $10 million in state funds is available

through VLCF.
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 (BMP's), including riparian corridor protection, are mandatory within the RPA.

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.

System Administrator -

Year: **2005**

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 #3 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.
In addition, the Department has sponsored a Green Infrastructure Course in cooperation with the Conservation Fund. More than 40 state, federal and local stakeholders participated in the January 2005 workshop. Another one is planned for Spring 2006. 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.

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 July 2005. Farms/Forests category will receive around $3 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 367 will study the options for Forest Land conservation and review the impact of local ordinances on forestland management. The report is due to the General Assembly in November 2005.
Conserving the Forest Land base is the agency's #3 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.

Department of Conservation and Recreation -

Year: **2005**

Approach to Implementation
In 1992, Virginia and the other Chesapeake Bay Program partners determined that the most effective means of reaching the 40 percent goal would be to develop tributary-specific nutrient reduction strategies in each river basin. As described in 3.1.2, the Bay Program participants are now focusing attention on the water quality conditions to sustain living resources and protect important habitat areas. As a result new nutrient and sediment reduction goals were developed by the EPA Chesapeake Bay Program for the major Virginia tributaries to the Chesapeake Bay to obtain Bay water quality criteria for dissolved oxygen, chlorophyll a and water clarity. These new criteria required greater than the original 40% reduction goals to achieve the desired water quality in the Chesapeake Bay. These Baywide reductions from 1985 baseline estimated loadings are specifically 44% for total nitrogen and 55% for total phosphorus.

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

The Commonwealth has significant interests and support responsibilities for this commitment. 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
Virginia's Statewide Tributary Strategy was finalized in January 2005. Revised strategies for all of VA's Basins were finalized in March 2005.

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. However, the 2005-2007 biennium has significant increases in funding of the Water Quality Improvement Fund. It is estimated that this increase will improve NPS BMP implementation.

Department of Environmental Quality -

Year: **2005**

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 and implementation actions 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: **2005**

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.

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

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

Progress/Outlook

Additional Efforts
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.

Department of Environmental Quality -

Year: **2005**

Approach to Implementation
The Chesapeake 2000 Agreement has significantly shifted our goals and approach for achieving water quality restoration in Chesapeake Bay and its tributaries. Instead of concentrating on nutrient load reductions, the Bay Program participants are now focusing attention on the water quality conditions needed to sustain living resources and protect important habitat areas. Since the Spring of 2003, when the U.S. Environmental Protection Agency (EPA) published tidal water quality criteria for consideration by the States to adopt as revised water quality standards, much time and effort has been expended on several inter-related planning, regulatory, and education/outreach efforts. These activities are covered in Sections 3.1.2.1-5, which follow.

The process for achieving this commitment is underway among Chesapeake Bay Program participants. Virginia continues to foster and provide opportunities for meaningful public involvement in the decision-making for this commitment. In early 2005 the Secretary of Natural Resources released revised tributary strategies for Virginia's major Bay drainage basins (Shenandoah-Potomac, Rappahannock, York, James, and Eastern Shore). Details on the public participation elements and the final strategies are accessible via the Secretary's Internet website, at this address: http://www.naturalresources.virginia.gov/Initiatives/TributaryStrategies/index.cfm.

While the Commonwealth maintains it's voluntary, cooperative programs that are currently being utilized for point and nonpoint source nutrient and sediment control, additional enforceable policies have been added to support the nutrient reduction effort. Pollutant loading reductions will be achieved through a combination of continued application of voluntary, cooperative programs (such as the implementation of Best Management Practices, and the Conservation Reserve Enhancement

Program), and new or enhanced statutory/regulatory requirements, including:

- Concentration-based and annual mass loading permit limitations for total nitrogen and total phosphorus, applicable to significant dischargers across the Bay watershed.
- A Nutrient Credit Exchange Program for the significant dischargers, to allow trading of discharge credits among plant owners within a basin, which should lead to more cost-effective point source reductions.
- Stormwater management through Municipal Separate Storm Sewer System ("MS4") permits, now administered by DCR (industrial permits continue to be managed by DEQ).
- Confined animal feeding operations.
- Erosion and sediment control.

State Role

State government participants include: CBLAD, DCR, DEQ, DOH, VDOT.
The Commonwealth has significant interests and support responsibilities for this commitment.

Progress/Outlook

The revised goals for this commitment (tributary-specific load allocations for nitrogen, phosphorus, and sediment, at levels that achieve the new tidal water quality standards adopted by the State Water Control Board in 2005) are very challenging. It is certain that nutrient and sediment reductions needed to attain the new water quality standards will require a level of effort much greater than the recommendations in the original tributary strategies. The revised Bay Tributary Strategies, released by the Secretary of Natural Resources in early 2005, call for actions and application of control measures that would nearly double the amount of load reductions achieved to-date with the target date of 2010 for full implementation. Two inter-related rulemaking activities have progressed over the past year, as follows:

1. Revised Tidal Water Quality Standards - The State Water Control Board adopted revised tidal water quality standards for three criteria (dissolved oxygen, water clarity, and chlorophyll) in five designated uses (anadromous spawning and nursery habitat, shallow water, open water, deep water, and deep channel) in March and November 2005. Review and approval by EPA is expected very soon. For details on the standards adoption process, see this Internet address: http://www.deq.virginia.gov/wqs/rule.html#NUT1
2. Permit Limitations on Nutrient Discharges - this rulemaking involves revising two existing regulations:

- Policy for Nutrient Enriched Waters (9 VAC 25-40), and
- Water Quality Management Planning Regulation (9 VAC 25-720)

The combined effect of these regulatory actions is to establish total nitrogen and total phosphorus permit limitations for certain dischargers within Virginia's portion of the Chesapeake Bay watershed. Resulting effluent limits will be expressed principally as annual waste load allocations, and also as technology-based annual average concentrations where appropriate and authorized. These actions are needed because nutrients discharged from

wastewater treatment plants contribute to the overall, excessive loading of nitrogen and phosphorus to the Chesapeake Bay and its tributaries.

Over the course of three meetings and several public comment periods during 2005 the State Water Control Board finalized and adopted these revised point source nutrient discharge control regulations. For details on this rulemaking process, see this Internet address: http://www.deq.virginia.gov/bay/multi.html.

Additional Efforts

The estimated total cost to implement the 2005 Tributary Strategies is approximately $9.9 billion for capital, operation and maintenance, and technical assistance with the projected state cost being approximately $1.8 – 2 billion. Significant additional financial and technical resources are needed to meet this commitment, and must come from a combination of federal, state, local, and private sources. It is expected that recommendations about long-term funding sources to support Bay restoration, as well as water quality improvement projects across the Commonwealth, will be made this winter by a joint legislative subcommittee (HJR 640) authorized by the 2005 General Assembly. In addition, development of nutrient criteria for the freshwater, free-flowing sections of the tributaries (scheduled for 2007) must be tracked to assess their impact on those areas and the Bay's tidal waters. Increased funding for enhanced Chesapeake Bay monitoring programs will be necessary to evaluate criteria developed under 3.1.2.1, as well to measure ultimate success under this commitment, which is compliance with water quality standards in the future.

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: **2005**

Approach to Implementation

The Chesapeake Bay Program's Implementation Committee established the Water Quality Technical Workgroup (WQTW) to oversee this commitment. The WQTW's task was to coordinate the technical and scientific activities for the process of integrating the cooperative and statutory programs of the Chesapeake Bay restoration effort. This includes 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 has defined the appropriate water quality conditions, and the locations where they apply, for important living resources and habitat throughout the Bay and its tributaries.

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

The commitment was accomplished by the parameter-specific task groups (dissolved oxygen, water clarity, chlorophyll) under the direction of the WQTW. They defined the water quality conditions necessary to protect aquatic living resources, then made suggestions for refined designated uses and drafted quantitative criteria. The draft criteria were the basis for the rulemaking that Virginia has completed for revising our tidal water quality standards, which were approved by the State Water Control Board over the course of 2005.

Additional Efforts

Agency staff will continue to provide public education and outreach, to aid in understanding the water quality criteria and designated uses that drive the restoration goals and nutrient reduction efforts.

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: **2005**

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

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: **2005**

Approach to Implementation
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 2004 for public comment. These strategies included a preliminary cost analysis.
Revisions to the draft strategies began in June 2004 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. Virginia's Statewide Tributary Strategy was finalized in January 2005. Revised strategies for all of VA's Basins were finalized in March 2005.

State Role
State government participants include: DCR, DEQ, and DOF.
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. These strategies were finalized in March 2005.

There are significant 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. There is also a void in the process to take reduction goals (i.e. BMPs and load allocations) identified in the revised strategies and integrating these into local government programs that regulate land use changes and planning.

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). Currently all MS4 localities have been solicited for their interest in sharing what data they have available about their programs so that this information can be collected in a logical and uniform way. 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 increase the nutrient and sediment reductions Virginia receives credit for achieving as a result of NPS Program implementation.

The 2005-2007 biennium has significant increases in funding of the Water Quality Improvement Fund over the previous biennium. It is estimated that this increase in funding will enhance NPS BMP implementation in Virginia's Chesapeake Bay Tributaries. Additional efforts are underway at the General Assembly to provide stable funding mechanisms for environmental programs including TMDLs and the Bay restoration goals.

Department of Environmental Quality -

Year: **2005**

Approach to Implementation

See information presented under Commitment 3.1.2.4.

State Role

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

Progress/Outlook

Additional Efforts

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

Department of Environmental Quality -

Year: **2005**

Approach to Implementation
In early 2005 the Secretary of Natural Resources released revised tributary strategies for Virginia's major Bay drainage basins (Shenandoah-Potomac, Rappahannock, York, James, and Eastern Shore). Details on the public participation elements and the final strategies are accessible via the Secretary's Internet website, at this address: http://www.naturalresources.virginia.gov/Initiatives/TributaryStrategies/index.cfm. The load reductions sought in the strategies are keyed to the attainment of water quality standards in the tidal rivers and mainstem Bay that have been adopted b the State Water Control Board in 2005.

State Role
This commitment has high priority for the Commonwealth with significant support provided by DEQ.

Progress/Outlook
Revised tidal water quality standards have been adopted, and work continues on developing nutrient criteria for free flowing streams and rivers as well as lakes and impoundments.

Additional Efforts
Significant staff time must be devoted to this effort, in order to expeditiously convene public hearings, receive and respond to comments, and perform other administrative requirements of the Administrative Processes Act. It will be necessary for the state to write implementation guidance so that the concentrations of dissolved oxygen that are naturally occurring can be determined in stratified estuaries and lakes and in minimal flow velocity waters (swamps).

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.

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.

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

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: **2005**

Approach to Implementation
A *Voluntary Mixing Zone Phase-Out Strategy* was developed (August 2001) to target point sources, which only applied to "persistent and bioaccumulative toxics" in "Regions of Concern" and "Areas of Emphasis". A policy change in the Chesapeake Bay Program's approach to managing toxics has placed emphasis on the jurisdictional discharge permitting programs to address this issue. With the exception of Pollution Prevention efforts, all other mixing zone elimination activities have ceased. Virginia actively promotes 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 ("P2") in their daily operations and reducing releases of chemical contaminants and other wastes to the Chesapeake Bay. P2 is a hierarchy of activities and techniques to reduce or eliminate wastes at their source, and has been embraced by the CBP's Executive Council because many P2 techniques not only decrease

chemical discharges and waste generation, but also result in increased production efficiency and reduced waste disposal costs. For this reason, business and industry have been the leaders in developing many P2 techniques and are proponents of this voluntary approach to eliminating or reducing waste generation. B4B membership is open to all businesses in the Bay watershed, including federal, state, and local government facilities. Each participating facility annually develops its own P2 goals and reports back on progress. The program also supports a business-to-business mentoring program, and individual "experts" from member facilities have volunteered to provide assistance to others. Members not only benefit from cost savings and increased efficiencies, but also from positive publicity, increased patronage, access to mentoring services, and eligibility for annual awards from the Executive Council.

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.
Working closely with representatives from business and industry, DEQ's P2 Program helped craft Businesses for the Bay ("B4B"), a voluntary pollution prevention program designed to encourage business and industry to adopt pollution prevention principles. B4B was kicked off in January 1997, and it is the primary business component of the CBP Toxics 2000 Strategy. More recently, B4B broadened its mission in support of the work of the CBP Nutrient and Sediment Reduction Subcommittee, and it is encouraging its membership to also focus on nitrogen and phosphorus reductions.

Progress/Outlook

To date, there are more than 698 participants and 125 mentors in Businesses for the Bay (B4B). Virginia accounts for 302 B4B members and 54 of its mentors. In 2004, Virginia participants reported approximately 115 million pounds of waste reduction and recycling, and over $3.8 million in cost savings due to pollution prevention efforts. DEQ's Office of Pollution Prevention actively promotes Businesses for the Bay through a variety of approaches, including presentations, directed mailings, a website (www.deq.virginia.gov/p2/b4b) and site visits to both potential members and member facilities. In support of the efforts of Businesses for the Bay, Virginia has pursued partnerships and reciprocal agreements with other P2 initiatives, such as the Virginia Environmental Excellence Program, the Elizabeth River Project, the Virginia Clean Marinas Program, and the DEQ/Department of Defense P2 Partnership. Each year, the CBP Executive Council recognizes businesses and other entities that have made significant voluntary P2 achievements and served as leaders in the Bay's restoration efforts. This year, the Executive Council presented 18 awards in various categories, and Virginia entities received 16 of those awards. The following awards were presented to Virginia entities:

- Outstanding Achievement for a State Govt. Facility: Christopher Newport Univ., Grounds Department
- Outstanding Achievement for a Federal Govt. Facility: Commander, Navy Region, Mid-Atlantic
- Outstanding Achievement for a Federal Govt. Facility: Fort Lee, U.S. Army
- Outstanding Achievement for a Federal Govt. Facility: Fort Monroe, U.S. Army
- Outstanding Achievement for a Local Govt. Facility: Hopewell Regional Wastewater

Treatment

- Outstanding Achievement for a Local Govt. Facility: Fairfax County, Dept. of Vehicle Services
- Outstanding Achievement for Nutrient Reduction: Fairfax County Wastewater Management Program
- Outstanding Achievement for P2 - Large Facility: Waste Management of VA, Maplewood Recycling
- Outstanding Achievement for P2 - Large Facility: Smithfield Transportation
- Outstanding Achievement for P2 - Medium-Sized Facility: Ukrop's Food Group
- Outstanding Achievement for P2 - Small Facility: Citgo Petroleum
- Outstanding Achievement for Toxics Reduction: Infineon Technologies
- Partners of the Year: ERG ; Esquire Environmental Services, Inc.
- Mentors of the Year: Pam Boatwright, Elizabeth River Project; Jimmy Parrish, Defense Logistics Center Richmond

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.

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.

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.

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.

Department of Conservation and Recreation -

Year: **2005**

Approach to Implementation
The CBP's Resource Lands Assessment Task Force (RLATF) and an associated Technical Team have developed first-iteration products to address this commitment, and are now working with other CBP teams to identify ways to make this information widely available and useful.

State Role
State government participants include: DCR, DOF, DGIF, DHR, VMRC, VDACS, VIMS and VDOT.

The Conservation Lands database, developed by the Virginia Department of Conservation and Recreation (DCR) as the Commonwealth's first comprehensive, geospatial dataset for Virginia's protected conservation lands, is continually maintained and updated by DCR. This database includes mapped boundaries and attributes for fee-simple and eased public and certain private lands in Virginia that have potential significance for serving a variety of conservation, recreation, and open-space roles. DCR maintains an ArcIMS website (http://www.dcr.virginia.gov/olc/tools02a.htm) that allows public access to these data. Localities and other GIS users can readily download shapefiles from this website for use in their own GIS systems.

As one component of the Virginia Conservation Lands Needs Assessment (VCLNA), DCR has completed a pilot Natural Landscape Assessment (VaNLA) for Virginia's Coastal Resources Management Area. With funding assistance from the Virginia Land Conservation Foundation (VLCF), the Virginia Coastal Program, and the Chesapeake Bay Program, DCR has built on the GIS models used for the Chesapeake Bay Program's Resource Lands Assessment Ecological Assessment, modifying methodology, adjusting weights, and adding data to tailor them specifically for Virginia interests. The primary focus of VaNLA is ecological prioritization, to identify the most important natural, unfragmented lands based on considerations of biological and ecological value and integrity, as well as corridors to link these lands. Of particular significance is the use of land cover data based on 2000 satellite imagery instead of the 1992 imagery used in the CBP product. Maps, reports, and GIS datasets on produced through this project have been widely distributed, on CDs, to Chesapeake Bay localities and Planning District Commissions. This product has the potential to become an important tool for the land conservation community to use in identifying lands worthy of protection.

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

DCR and DEQ will continue 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 continue to work with Virginia's conservation community 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:* 2005**

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 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. The VLCF provided funding to local PDR projects during its fiscal year 2005 grant round. Easement programs are also growing, with easements being taken at record rates by the Virginia Outdoors Foundation, and by localities, land conservation trusts, and state conservation agencies.

In fiscal year 2005 and fiscal year 2006, the General Assembly provided the Virginia Land Conservation Foundation (VLCF), staffed by DCR, with $15 million in funding for acquisition of easements and fee-simple lands in the current budget biennium. This money, augmented with funding generated from vehicle registration fees, allowed VLCF to solicit funding proposals in 2005 for the first time since 2000. A grant round in FY2005 funded 23 projects, and a second grant round with approximately $10 million in grant funds has an application deadline of September 20, 2005.

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, a permanent state-funding source for land conservation purposes is needed to further advance Virginia's land conservation efforts.

Additional Efforts

Virginia, working with its Congressional leaders, will continue 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: **2005**

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. Efforts to develop this plan are beginning as part of the development of the 2007 Virginia Outdoors Plan. 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.

DCR is currently expecting to acquire key State Park and Natural Heritage lands using Virginia Public Authority Bonds and General Obligation Bonds approved by voters in 2002. In the past year, due to efforts by the conservation community across the state, 41,762.84 acres of additional land in Virginia's Chesapeake Bay watershed were protected. This is an encouraging increase from the 36,092.72 new acres protected on average in the previous four years, but still falls short of the pace needed to meet the 2010 goal. About 75 percent of this year's protected acreage addition results from the 31,353.30 acres protected through VOF easements. Conservation organizations and land trusts protected 5,533 acres in the last year, half of which came from the Nature Conservancy, which protected 2,981 acres, and local governments protected 1,063.5 new acres.

Progress/Outlook

Virginia continues to make progress on 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, 2005 is as follows:

Federal - 1,753,934.92

State - 514,249.52

Local - 97,182.35

Non Profit/ Private - 42,307.58

Total - 3,408,079.37

17.41 percent of Bay Watershed in Virginia is protected. (20 percent of Virginia's Bay acreage is 2,766,378 acres.) Virginia's remaining target is 358,298.63 acres – a daunting task when, over the last five years, Virginia has only preserved a total of 186,133,72 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: **2005**

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. 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

DCR is sponsoring another initiative to provide conservation planning tools directly to localities – a Forum on Green Infrastructure for localities of the Middle Peninsula, Northern Neck, and neighboring counties. Scheduled for October 19, 2005, this all-day workshop will provide a target audience of locality planners and administrators and land trust officers with information about a green infrastructure planning approach and tools available to localities to plan and implement green infrastructure protection. With the assistance of a variety of partners including local land trusts, the National Park Service, and the Conservation Fund, this meeting will be followed up in the Middle Peninsula and the Northern Neck with a variety of strategic planning activities, including mapping and finance charettes. This process will serve as a model for implementing green infrastructure based conservation planning around the watershed.

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: **2005**

Approach to Implementation

This commitment will primarily be implemented at the state/local level.

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. DCR is now expanding the VCLNA in two dimensions. VCNLA is being extended to the remainder of the Chesapeake Bay watershed as well as the rest of the state, using a more detailed land classification as well as methodology improved by the experiences with the VCNLA pilot. DCR is also actively acquiring additional datasets to make the VCLNA a comprehensive tool for the varied needs of additional conservation partners. The Chesapeake Bay Program has identified some available datasets and created useful models as part of their Resource Lands Assessment. Depending on needs identified, other datasets might include or address:

- Spatially explicit sites identified as priorities through existing plans (such as Partners in Flight priority sites).
- Local parks, local natural features (useful for Green Infrastructure identification)
- Wildlife diversity (for State Wildlife Comprehensive Planning)
- Recreational lands and identified recreation needs (for Virginia Outdoors Plan)
- Forest use and forest economic data (for Sustainable Forestry decision-making)
- Surface and subterranean drinking water sources (for drinking water protection)
- Biotic and abiotic factors that influence stream water quality (for water quality protection and improvement)
- Historic and cultural resource locations (for historic resource protection)
- Prime agricultural lands (for Agricultural Reserves)
- Growth measures (for vulnerability analyses)

All data assembled, as well as the analytical VCLNA products, will be made available to localities to incorporate into their local conservation planning efforts.

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 continues 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: **2005**

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 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 changes in state law. 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 that 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.

System Administrator -

Year: **2005**

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: 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
The purpose of HB1177 consolidated the Commonwealth's stormwater management programs into DCR. One component of the consolidated program, which is required by HB1177, is for DCR to encourage low impact development designs. As DCR further develops the regulations for what is an acceptable stormwater management program, low impact development will be addressed in the regulations and model stormwater management ordinance.

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.

Department of Conservation and Recreation -

Year: **2005**

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. The workgroup led by the U.S. Army Corps of Engineers has made progress in the past year with the development of a draft technical bulletin on LID as well as a draft model LID ordinance. A website was also created to catalogue, publicize and provide information on LID projects throughout Virginia. However, due to the current changes in the stormwater management program in Virginia and the pending regulatory

changes, many of these initiatives are on hold. There are also other State and, more importantly, local regulatory changes that 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: **2005**

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, which 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, which 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.

This effort will continue in early 2006 with a pilot workshop targeting locally elected officials, Planning District Commissions, planning commissioners, zoning administrators, soil and water district directors and other stakeholders located throughout the Shenandoah watershed. It is hoped that if successful, additional workshops throughout the Bay watershed will be initiated. The workshops are intended to introduce local stakeholders to the integration of land use and watershed planning in an effort to further efforts that address non-point source pollution at the local level. In addition, during October 2005 and February and April 2006, three workshops will be held in the Middle Peninsula and Hampton Roads regions of Virginia to train local planning commissioners, Board/Council members and local planners on green infrastructure planning. The purpose of both the land use and watershed planning and the green infrastructure planning initiatives is to move localities in a positive direction to enhance their citizens' quality of life and toward achieving the goals of Virginia's Tributary Strategies.
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 four 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, which 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.

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.

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: **2005**

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 sub-watersheds. 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. DCR-DCBLA began conducting a series of workshops addressing various watershed and land use planning initiatives in late 2005 with the Green Infrastructure workshops held in the Middle Peninsula. In early 2006 the Division will work with to conduct a workshop for planners and officials in the Chesapeake Bay Watershed to help them better understand the link between land use and watershed planning. It is anticipated that this workshop will also provide localities with case studies or examples of how watershed planning efforts have been incorporated into comprehensive plans and provide practical tools to assist in their efforts to minimize the link between local land use decisions with negative water quality impacts. Finally, an LID Workshop for local government planners within tidewater Virginia is anticipated for early 2006 to provide a more detailed overview of practical techniques for reducing negative water quality impacts due to development.

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: **2005**

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 that 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.

DCR-DCBLA began conducting a series of workshops addressing various watershed and land use planning initiatives in late 2005 with the Green Infrastructure workshops held in the Middle Peninsula. In early 2006 the Division will work with to conduct a workshop for planners and officials in the Chesapeake Bay Watershed to help them better understand the link between land use and watershed planning. It is anticipated that this workshop will also provide localities with case studies or examples of how watershed planning efforts have been incorporated into comprehensive plans and provide practical tools to assist in their efforts to minimize the link between local land use decisions with negative water quality impacts. Finally, an LID Workshop for local government planners within tidewater Virginia is anticipated for early 2006 to provide a more detailed overview of practical techniques for reducing negative water quality impacts due to development.

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: **2005**

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: **2005**

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 that 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.
DCR-DCBLA began conducting a series of workshops addressing various watershed and land use planning initiatives in late 2005 with the Green Infrastructure workshops held in the Middle Peninsula. In early 2006 the Division will work with to conduct a workshop for planners and officials in the Chesapeake Bay Watershed to help them better understand the link between land use and watershed planning. It is anticipated that this workshop will also provide localities with case studies or examples of how watershed planning efforts have been incorporated into comprehensive plans and provide practical tools to assist in their efforts to minimize the link between local land use decisions with negative water quality impacts. Finally, an LID Workshop for local government planners within tidewater Virginia is anticipated for early 2006 to provide a more detailed overview of practical techniques for reducing negative water quality impacts due to development.

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: **2005**

Approach to Implementation

The 2004 General Assembly passed legislation, which consolidated Virginia's stormwater management programs into DCR. With the consolidation, the Virginia Soil and Water Conservation Board and DCR became responsible for the permitting of municipal separate storm sewer systems (MS4s) and land disturbing activities. Full consolidation of the programs became effective on January 29, 2005 when EPA approved the transfer of the permitting programs for MS4s and construction activities from DEQ to 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 2004, the review process and procedures were expanded and improved to be more beneficial to localities to help them identify solutions to common site design and program administration difficulties. The review may result 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.

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 was approved by the Board. This on-going audit process provides 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 annual report format is under development with adoption by the Board expected in 2005. The audit process has moved the Bay Act program 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 DCR approved erosion and sediment control and stormwater management standards and specifications, will be more aggressive in the review of its program's consistency and effectiveness. In addition, DCR is currently completing a statewide review of VDOT compliance with the approved standards and specifications.

State Role

State government participants include: DCR, DEQ, DOF and VDOT.
The Bay States have the lead for this commitment. In Virginia, DCR has responsibility state-wide and Bay-wide, for evaluating the local implementation effectiveness of the erosion and sediment control and stormwater management laws and regulations.

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.

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 2-3 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.

Department of Conservation and Recreation -

Year: **2005**

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 was approved by the Board. This ongoing audit process provides 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 annual report format is under development with adoption by the Board expected in 2005. The audit process has moved the Bay Act program 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: **2005**

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 finalized amendments of State On-Site Wastewater Treatment Regulations (for septic systems). The regulations include more flexibility pertaining to alternative and innovative on-site

treatment systems. DCR DCBLA has amended its program regulations to reflect 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.

In addition, DCR DCBLA is managing an On-Site Septic Tank Pump-Out Assistance Grant(s) targeting low- and moderate-income property owners to provide 400 eligible participants with one-time financial assistance to secure pump-out services to meet the 5-year septic pump-out requirement included in all local Bay Act programs. The project will serve the 10-county area in the Middle Peninsula and Northern Neck, and will be administered by the regional planning district commissions. DCR-DCBLA is also managing a septic pump-out notification grant to help Accomack, Northampton and Richmond counties educate and notify citizens of the requirement that they have their septic systems properly maintained, including pumping them out. It is expected that some 6,000 citizens will be notified of this requirement and that around 4,000 will have their systems pumped out.

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 Environmental Quality -

Year: **2005**

Approach to Implementation

Enhancements continue to be made to Virginia's brownfields and voluntary cleanup program, further encouraging redevelopment and providing incentives for program participants. 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, which provides innovative and customer friendly tools to help developers see the value and opportunity in brownfield redevelopment.

Recent state and federal legislation provides critical legal and financial incentives to encourage brownfield redevelopment. DEQ recently released its program guidance manual, which 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. Virginia'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 redevelopment process.

Progress/Outlook

Substantial progress has been made in understanding the needs of brownfield participants. Liability, cost, and timeliness are the three primary deterrents to brownfield redevelopment in Virginia. The program continues to help program participants mitigate those deterrents through policy review/change and continuing excellent customer service and dedication to successes. The outcomes have been excellent and DEQ continues to recognize the critical role it plays in facilitating brownfield redevelopment successes and looks to leverage off of beneficial federal brownfield activities.
Through 2005, DEQ has reported 53 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 remains 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 comments or questions.

Additional Efforts

Additional efforts being made 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 wherever 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.

Department of Conservation and Recreation -

Year: **2005**

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 selected retrofit practices.

State Role

State government participants include: 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 and VSMP Permit Program, the Chesapeake Bay Preservation Act, and the Stormwater Management Act.

Progress/Outlook

The Virginia Stormwater Management Program (VSMP) addresses stormwater quality and quantity on a statewide basis. In the localities covered by the Chesapeake Bay Preservation Act (CBPA) and in areas covered by an MS4 permit, a program must be developed to address stormwater quality and quantity. In areas not covered by an MS4 or the CBPA, localities have an option to develop a stormwater management program to address quantity and quality. If a locality elects not to adopt a program, DCR will administer a program for the locality.
The DCR is in the process of developing the regulations and model ordinance for an acceptable stormwater management program. As the regulations and ordinance proceed through the regulatory process, stormwater retrofits and the requirements for retrofit practices will be developed.

Additional Efforts

Additional state resources, in the form of staff and grant or annual 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.

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.

Virginia Department of Public Transportation -

Year: **2005**

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

State government participants: VDOT.
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. The Commonwealth has adopted a telecommuting policy as a workforce element that is currently being implemented by each state agency.

Progress/Outlook

The General Assembly identified $4 million for ground transportation planning and research. With these funds, VDOT has awarded 15 grants to planning district commissions for initiatives including linking transportation and land use planning. The Department of Rail and Public Transportation also awarded $2.2 million in planning grants for projects including the preparation of transit development plans, evaluation of the transportation and environmental affects of rails improvements, and development of a rail network computer model to study existing and future passenger and freight rail operations. The Commonwealth Transportation Board adopted a Policy for integrating Bicycle and Pedestrian Accommodation. This policy prescribes that VDOT will initiate highway construction projects with the presumption that the project shall accommodate bicycling and walking. VDOT has a hired a 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 established an Internal Bicycle and Pedestrian Task Force (ITF). The ITF is responsible for ensuring consistent implementation of the bicycle and pedestrian program within VDOT. The ITF periodically reviews, evaluates and recommends modifications to VDOT's bicycle and pedestrian policies and practices. VDOT has also established the Bicycle Accommodations Review Team (BART) is a multi-disciplinary team within VDOT with knowledge in aspects of bicycle and pedestrian planning, design and safety. BART provides reviews 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 area to identify a network of bikeways which transcends jurisdictional boundaries within each region, without compromising the local wishes as documented in various comprehensive plans. VDOT and the Department of Conservation and Recreation are working together to encourage non-motorized access as part of park master planning and the use of non-traditional transportation corridors, such as greenways, in our transportation mix. Greenways add to a healthy community by providing the opportunity to use alternate transportation modes and to have a place to exercise. VDOT began construction of the Virginia Capital Trail, a multi-purpose 54 mile long 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.

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.

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: **2005**

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 will 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 both to 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.

In 2005 two new public access facilities were added.

- At Leesylvania State Park one existing pier was lengthened and a new pier was constructed in the boat basin.
- At York River State Park a fishing pier was constructed in the York River.

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: **2005**

Approach to Implementation

State Role

Progress/Outlook
Progress continues. New status will be reported in 2006.

Additional Efforts

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: **2005**

Approach to Implementation

State Role

Progress/Outlook
Progress continues. Updated status will be reported in 2006.

Additional Efforts

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: **2005**

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 2005, 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 -
Make education and outreach a priority in order to achieve public awareness and personal involvement on behalf of the Bay and local watersheds.

Department of Conservation and Recreation -

Year: **2005**

Approach to Implementation
In February and March 2005 the Chesapeake Bay Program conducted a mass media campaign focused on fertilizer use in the Washington D.C. suburbs. The $600,000 campaign was developed by the Academy for Educational Development. Virginia was a major partner both financially and in the planning of this campaign. The campaign used a humorous approach to reach its target audience, suburban landowners, to promote practices that lead to a reduction in nutrients. The campaign was seen throughout the northern portion of the state and will complement ongoing efforts by Virginia state agencies. Pre and post campaign surveys were done to see if the campaign was noticed and if it had an impact. The post survey showed that 7 out of 10 surveyed saw the campaign and remember one of its major themes. Approximately 44% could remember the campaign tagline. The campaign asked people to hold off on fertilizing in the spring and wait to fertilize in the fall. Of those who did not see the campaign, 43 percent fertilized in the spring. Of those who did see the campaign only 38 percent used fertilizer in the spring.

DCR is also initiating a marketing approach to reach farmers in an attempt to increase the amount of agricultural BMPs called for in Virginia's tributary strategies. In Sept. 2005, a state Request for Proposal is being prepared to solicit a marketing firm to coordinate this campaign. Virginia, through DCR and DEQ, have provided funding to schools throughout the Bay watershed for the development of meaningful outdoor experiences. Details from this program will be reported under 5.1.4.

All participating state agencies have programs in place to inform and involve the program in their Bay related efforts. Websites, brochures, watershed posters and videos are among the many tools available and being used. Those aspects of Virginia Naturally geared toward adult audiences also work to meet this commitment.

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 remains 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 coordinating the spending of an additional $50,000 for the second year of the campaign and is working with the CBP to find other funding.

As mentioned earlier, DCR is soliciting a marketing firm to assist with implementation of the agricultural nonpoint source goals in Virginia's Nutrient and Sediment Tributary Strategy.

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, which covers nearly the northern half of the state and the marketing effort with the agricultural community, are two examples.

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). These campaigns are also not effective using a "one shot" approach. Funding is needed to maintain and grow these campaigns in Virginia markets.

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: **2005**

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.

In Virginia, this CWiC effort has evolved into the Virginia Watershed Advisory Committee. The committee retains a strong Bay watershed focus, but has also expanded its membership and role statewide.

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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 has developed a 20-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.

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

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.

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: **2005**

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. Regional DCR field staff work regularly with the local entities through various project partnerships, funding, outreach, education and public relations. Regional staff are able to aide in tailoring programs to local needs. From SWCD training for CREP program administration to local staff training and certification for urban NPS issues.

- Use regional staff to establish local relationships, establish communication on watershed level, and analyze needs within watershed
- Regional staff work with local governments to implement the 2005 tributary strategies that will utilize wetland restoration, forested buffers and other best management practices to reduce nonpoint source pollution
- Field staff will promote updated watershed management planning guides, videos and other technical guides as effective tools to meet this commitment
- Supplement local engagement efforts with Mass Media Campaign
- Assist public relations staff as needed with developing the next phase of the Mass Media Campaign targeted for agricultural land users

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. Upon firm establishment of network coordination, DCR will rely on liaison with local governments via individual contacts and regular meetings with SWCDs to support and carryout delivery of Bay Program resources as well as grassroots conservation practices.

- 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
- Community Watershed Dialogues continued through 2004 and 2005 with interested localities.
- Two additional Watershed Management Planning workshops are being planned targeting areas with minimal watershed management resources.

Additional Efforts

State agencies and 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.

Input received from local entities was included in Tributary Strategies. Development of the strategies for each VA Bay watershed was completed in 2005. The implementation process is underway. The developing Cooperative Non point Source Program agreements funded via the WQIA will be the significant financial tool to carry these out.

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: **2005**

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. Commitment from Virginia's leadership has become established via the WQIA. DCR will continue to request and procure funding from additional sources for Tributary Strategy and other NPS program implementation.

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 clearing house for information on local watershed restoration efforts, including financial and technical assistance.

Department of Conservation and Recreation -

Year: **2005**

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. Data on restoration efforts via agricultural and forestal programs with financial incentives is readily available dating back to 1985.

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.

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.

Compatibility between, and consistency of systems is under examination. Local watershed planning data from Virginia has been delivered to Bay program staff for compilation. Meanwhile, DCR established a database of local planning efforts and has it posted on the internet. Over the coming year, efforts will be focused on evaluating data accuracy and thoroughness.

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: **2005**

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 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, agricultural 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's specific pages of the DCR web site. Data records 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.

In the Spring of 2005, a first time multi-agency meeting of representatives of natural resource agencies occurred. Initial discussions of cross-referencing data began.

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. The TMDL development and implementation planning processes may address some of these needs where TMDLs exist. 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 completed the development of the Virginia portion of the National Watershed Boundary Dataset (NWBD), which defines watersheds more precisely and at a finer scale than the previous system of statewide use does. This new dataset is accessible via DCR's website.

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: **2005**

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: 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: **2005**

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: 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. This funding need has come to fruition in 2005 and efforts are underway to administer grants to localities.

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: **2005**

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

Additionally, DCR Regional Managers are meeting individually with soil and water conservation district boards and local government staff to discuss and develop local programs focused on nonpoint source pollution reductions. These programs will be based on Tributary Strategy implementation with long-standing affects. Program funding will be substantiated via the Virginia Water Quality Improvement Act.

State Role

State government participants include: DCR's DCBLA and DSWC.

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 (CWOs).

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. Project and CWO capacity-building funding will continue via competitive grant awards through the WQIA Water Quality Initiative funding mechanism. This is a continued, separate funding stream apart from the new Cooperative Non point Source Programs funding stream.

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: **2005**

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. At the local levels, varying programs exist addressing the education aspect of this commitment. VPI& SU, one of Virginia's land grant universities, incorporates pollution reduction education in youth and adult programs. DEQ administers the Virginia Litter Control and Recycling Fund, awarding grants to localities for localized programs. Many CWO's, for example the 'Friends of Chesterfield's Riverfronts', target inner-city youth and adults for watershed and waterway education programs.

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 governme nt's fleet of vehicles use some form of clean technology.

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.

Department of Conservation and Recreation -

Year: **2005**

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: 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

In the wake of Tropical Storm Gaston in August 2004 and in response to the damage incurred by the state, by residents and by small businesses in the City of Richmond, DCR has proposed partnering with DGS, DEQ, DOE, VDOT and other state agencies to design and implement a green roof on the James Monroe Plaza (roof over the parking deck) as a demonstration project in the Chesapeake Bay Watershed. A green roof provides water quality benefits on a regular basis as stormwater is cleansed

from pollutants before being discharged into the City's storm sewer system. In addition, the amount of stormwater actually being discharged would be reduced and contribute to the reduction in impacts during storm events. This initiative will address the goals of the Chesapeake Executive Council's Stormwater Directive, specifically Commitment II which requires that state agencies "show leadership on how to prevent stormwater runoff problems in the face of increased growth and development by striving to achieve a no net increase in stormwater loads of nutrients, sediment, and chemical contaminants and maintain or restore predevelopment hydrologic regimes on lands being developed or redeveloped."

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.

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