Implementation of the Chesapeake 2000 Agreement

Prepared by the Secretary of Natural Resources
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Introduction

This report fulfills the obligation of the Secretary of Natural Resources to report annually on activities related to the implementation of the commitments contained in the Chesapeake 2000 (C2K). In order to meaningfully report on the key elements of the agreement, this report updates the eleven "keystone" commitments identified in the 2006 annual update. The Chesapeake Bay Program has established these keystone commitments because of their preeminent importance to the overall Chesapeake Bay restoration effort. Future reports will continue to focus on these priority commitments for they will continue to serve as the foundation of restoration efforts.

We fully understand that great challenges, in many areas, remain in meeting the goals of the C2K agreement. However, Virginia's agencies remain committed to the commitments contained in the agreement.

This reports wishes to acknowledge the work of all the individual agency staff and for their dedication to the goals of the agreement.

For additional information on this report, please contact the office of the Secretary of Natural Resources at sonradmin@governor.virginia.gov.

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

Annual Report on the Implementation of the Chesapeake 2000 Agreement

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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 – Water Quality Improvement Act
WQIF – Water Quality Improvement Fund

Government Agencies and Organizations:

ASMFC – Atlantic States Marine Fisheries Commission
CBLAB – Chesapeake Bay Local Assistance Board
CBLAD – Chesapeake Bay Local Assistance Division
CBP – Chesapeake Bay Program
COE – United States Army Corps of Engineers
CWIC – Chesapeake Watershed Implementation Committee
DCR – Virginia Department of Conservation and Recreation
DEQ – Virginia Department of Environmental Quality
DGIF – 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 – DCR- Division of Soil and Water Conservation
EPA – United States Environmental Protection Agency
FSA – Farm Service Agency (formerly ASCS)
NACD – National Association of Conservation Districts
NOAA – National Oceanic and Atmospheric Administration
NRCS – Natural Resources Conservation Service (formerly SCS)
ODU – Old Dominion University
OSNR – 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
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
VMRC – Virginia Marine Resources Commission
VOF – Virginia Outdoors Foundation

Living Resource Protection and Restoration

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: **2007**

Approach to Implementation
Oyster restoration efforts in Virginia primarily involve habitat restoration with shells. The amount of restored acres reported at the end of this section represents the total acreage that has received shell plantings to date. However, there are additional important elements of our restoration strategy that involve aquaculture, disease research and management strategies, and oyster stock monitoring.

State Role
There is currently consensus on a Bay-wide 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
2007 reported progress:

- More than seventy 3-dimensional reef sites have been constructed Bay-wide since 1993.
- Stock assessment of current oyster populations indicate similar populations of oysters in 2007 as in 2006, but since salinities have increased due to the current drought conditions, there has been a significant decline in large oysters due to disease mortalities. The Bay-wide population of oysters was slightly less in 2006 than 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. Following the severe drought in 2002, salinities were high, and oyster disease impacts were severe throughout Virginia and almost all of Maryland. These conditions were reversed in 2003 and 2004 when record rainfall lowered salinities. The low salinities allowed some oyster survival to larger size categories by reducing the impacts of disease, but at the same time there was little natural reproduction. Salinities in 2005 and 2006 were near normal, but there has been relatively low reproductive success in most areas of the Bay. In 2007, drought conditions returned and salinities increased, resulting in elevated oyster mortalities and moderate reproductive success.

- Cultch 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.

- There will be a significant shortage of Chesapeake Bay oysters Bay-wide at least through 2008, which will severely impact the oyster industry.

Additional Efforts
Virginia's Blue Ribbon Oyster Panel completed its deliberations and released its report in June 2007. The Panel recommended increased funding for native oyster restoration with a more focused approach on the oyster fishery and oyster production through an expansion of remote setting of "spat on shell" and intensive aquaculture. There was the recognition that ecological restoration may take a much longer period than originally envisioned, and that more short-term progress may be made through aquaculture development. Additionally some new management and restoration strategies may be more appropriate under current conditions. A harvest rotation strategy, and maximum cull size were implemented in the Rappahannock River. Sanctuary areas will be intermixed with harvest areas using the best larval transport models as guidance, and penalties for oyster violations have been stiffened to protect the new initiatives.

Acres of Harvest Area Restored to Date:
3288

Acres of Sanctuary Reefs Restored to Date:
83

Oyster Reefs

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: **2007**

Approach to Implementation
The Chesapeake Bay Program has adopted the Bay-wide Oyster Plan. The plan can be viewed at www.chesapeakebay.net. The plan also builds upon the scientific and Bay-wide 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 Bay-wide commitment, with many State, federal, and private partners committing to the effort.

Progress/Outlook
2007 Reported Progress:

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

Additional Efforts
The Blue Ribbon Oyster Panel completed its deliberations and released its report in June 2007. The Panel consisted of representatives of the oyster industry, environmental organizations, and the Virginia Institute of Marine Science. The Panel recommended increased funding for native oyster restoration with a more focused approach on the oyster fishery and oyster production through an expansion of remote setting of "spat on shell" and intensive aquaculture. There was the recognition that ecological restoration may take a much longer period than originally envisioned, and that more short-term progress may be made through aquaculture development. The panel recommended increases in hatchery capacity in the Commonwealth, and continued investigations in ways to manage and mitigate the impacts of the cow nosed ray. Additionally some new management and restoration strategies may be more appropriate under current conditions. A harvest rotation strategy, and maximum cull size were recommended and implemented in the Rappahannock River. Sanctuary areas should be intermixed with harvest areas using the best larval transport models as guidance, and penalties for oyster violations have been stiffened to protect the new initiatives.

Multi-Species Management

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: **2007**

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
Currently, Dr. Kirkley, VIMS, is conducting a 3-year study on the ecosystem and economic valuation of the Atlantic Menhaden. The study is entering year 2 and as of this reporting there are no results to expand on. When the study is complete, the results will be an important consideration in the development of the interstate fisheries management plan providing both a value of the fishery and an ecosystem service value of the menhaden as a filter feeder.

Additional Efforts

These will be determined as progress on plan development occurs.

Vital Habitat Protection and Restoration

Submerged Aquatic Vegetation

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: **2007**

Approach to Implementation
See Commitment 2.1.2.
[Excerpt: 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
See Commitment 2.1.2.

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

In 2005, 78,263 acres of SAV were mapped as present in Chesapeake Bay and its tributaries. In 2006, 59,068 acres of SAV were present in Chesapeake Bay and its tributaries. This acreage represents 32% of the 185,000-acre goal and a decrease of 24.5% from the 2005 acreage. This loss marks the first setback for SAV after two consecutive years of moderate gains and the lowest total SAV acreage figure since 1989.

Since 2003 (the initiation of the SAV commitment) 139 acres of SAV have been planted representing 14% of the 1000 acre goal. In 2007, only 6 acres were planted. I

In 2006 the lower Bay was still experiencing the effects of a large eelgrass dieback that took place in late summer 2005 after a period of record high temperatures. Many of the areas affected by the dieback in 2005 did not produce grass at all in 2006, while the remaining SAV beds observed were very thin.

Scientists are attributing acreage declines in the upper and middle Bay to:

- The very dry spring in 2006, which caused more saline water to penetrate into many of the Bay's upper reaches. The higher salinity levels are believed to have increased stress on and loss of SAV species used to fresher water.
- An abnormally large rain event in early June that “muddied” the upper and middle Bay for about a month. The massive amount of sediment that followed this event caused further stress on bay grasses and likely contributed to additional acreage losses.

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. Using SAV as yardstick for measuring the progress of Chesapeake Bay restoration efforts is a very unique approach. SAV is not under harvest pressure and its health is closely linked to water quality. Increases in Bay grasses are expected in areas where water quality conditions are improving.

Additional Efforts

1. Restoration will be dependent on improvements in water quality.
2. Restoration and protection efforts involve management of state-owned submerged lands (MRC), transplantation research and monitoring (VIMS), point source pollution management (DEQ) and nonpoint source management (DCR).
3. Strategy implementation is occurring in part through development of a shallow water management plan in response to House Joint Resolution 765 (2001 Session).

4. Planting and transplantation efforts will be dependent on research and development of funding sources as well as support of voluntary programs.
5. Continuation of annual monitoring is essential.

Watersheds

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

Department of Conservation and Recreation -
Year: **2007**

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 (DSWC and DCBLA) team effort.

Progress/Outlook
No significant progress has been made this year on this commitment. As with in 2006, fundng for watershed management plans with a focus toward the Chesapeake 2000 commitments has not been provided. TMDL development and implementation planning have been a much higher priority for many agency staff.

The overall acreage covered by local watershed management plans in the Bay watershed is 22.9 million acres. Bay-wide, we are 43% of the way to meeting the locally supported watershed planning commitment.

TMDL Implementation Planning has continued but the acreage covered by these plans is not included in this count. As reported in the 2006 report submission, the basis for their development is most often tied to one or two specific pollutants, even though the implementation plans become comprehensive of all pollutants within the impaired watershed.

DCR will continue to promote watershed management planning as an effective method of achieving water quality goals as implementation of Tributary Strategies continues.

Additional Efforts
DCR has continually promoted and supported the development of local watershed management planning. Much agency time and resources were focused on this goal in previous years. As the development of the Bay Tributary Strategies plans culminated in early 2005, focus turned toward promoting implementation of actions at the local level that would result in quantifiable nutrient reductions.

Regional field staff continues to share tools and guidelines for plan development as well as available staff time to encourage and support local planning efforts. Staff have even recently developed and submitted grant proposals for additional, outside funding to provide resources directly to local jurisdictions for developing plans.

Wetlands

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: **2007**

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
The Virginia Department of Game and Inland Fisheries is actively restoring wetland habitats in Virginia. 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 wetland acres restored. During this reporting cycle, restorations totaling 25 acres have been completed in Lancaster and Hanover counties. Additionally, 100 acres of Phragmites were chemically treated in Surry County.

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

Forests

2.4.2 -
Conserve existing forests along all streams and shorelines.

Department of Forestry -
Year: **2007**

Approach to Implementation
Directive 06-01 Protecting the Forests of the Chesapeake Bay. Identify areas where retention and expansion of forests is most needed. Identify and recommend ways that planning, regulations, easements, tax incentives, funding programs and other strategies can protect forest lands, slow loss, and enhance needed stewardship. Expand efforts to link storm water management and land use regulations with forest conservation. Develop in each state a goal, framework, and milestones for protecting forested areas of critical importance for water quality. Work collaboratively with landowners, forest product industries, land trusts, watershed organizations and other business partners to create new partnerships, and develop innovative actions, programs, and incentives to support forest retention and protection of critical to water quality.

- 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.
- Support Virginia's tax credit program.
- Intensify GIS applications to target conservation.

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 establishment and preservation 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 (DOF) created and filled three new positions focused on conservation of working forest lands. DOF also administers the Forest Legacy Program from the USFS, a grant program funding fee simple acquisition of land or conservation easements. 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) awarded 15 grants in 2007 totaling $6.2 million dollars. These grants will permanently protect 11,540 acres through fee simple acquisition or perpetual conservation easements. The Office of Farmland Preservation in the Virginia Dept. of Agriculture and

Consumer Services is of allocating state matching funds to local Purchase of Development Rights (PDR) programs for FY 2007-2008. The program has $4.25 million available for certified local PDR programs. The Department of Environmental Quality administers the Coastal Estuarine Land Protection Program (CELP), a fee simple acquisition or easement program originating within the National Oceanic and Atmospheric Administration.

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

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

Progress/Outlook

In December, the Chesapeake Executive Council (EC) signed the Forestry Conservation Initiative, committing the Bay states to permanently conserve an additional 695,000 acres of forested land throughout the watershed by 2020. The Virginia goals are 135,000 acres under permanent protection by 2012 and 315,000 acres by 2020. The Virginia Stakeholders Group under the leadership of the DOF developed these goals and the strategies to implement them.

For Fiscal Year 2006 (as reported in section 4.1.3 of this report), efforts by the conservation community across the state led to the permanent protection of an additional 49,837.41 acres of land in Virginia's Chesapeake Bay watershed – representing an 8,000 acre increase over the previous twelve months. Statewide, 65,763.74 acres were conserved in FY 2006. One of the most significant easements to protect riparian areas is the 4,200-acre easement along the Rapidan and Rappahannock rivers and their tributaries on land owned by the city of Fredericksburg. The Nature Conservancy, the Virginia Outdoors Foundation and the Virginia Board of Game and Inland Fisheries hold this easement.

The forestry industry is continuing to divest itself of timberlands in Virginia. Thousands of acres of managed forests that will be sold in the next few years and represent a tremendous opportunity to conserve working forestlands and limit development in riparian areas. Seizing this opportunity will depend on significantly increased funding for conservation in Virginia.

Additional Efforts

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

Water Quality

Nutrients and Sediment

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.

Department of Conservation and Recreation -
Year: **2007**

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 million 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 http://www.naturalresources.virginia.gov.

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

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

Progress/Outlook
Refer to Virginia Chesapeake Bay and Impaired Waters Clean Up Plan (HB 1150 report at http://www.naturalresources.virginia.gov/Initiatives/WaterCleanupPlan/) for detailed progress toward removal of the Chesapeake Bay from the impaired waters list. Virginia will need substantial funding and technical resources to implement the revised tributary strategies, in addition to programs such as the Virginia Agricultural Cost-Share Program, the Conservation Reserve Enhancement Program, Environmental Quality Incentive Program, and the Virginia Water Quality Improvement Fund, which have been the mainstays for achievements in Virginia's Chesapeake Bay Watershed for years. USEPA has recognized and is planning on the development

of a TMDL for the Bay by May 1, 2011 since it is their opinion that insufficient progress will be made by then for a de-listing to occur.

Additional Efforts
The estimated annual sediment reduction (point source and NPS) that occurred during 2006 has been estimated to be over 21 thousand tons, assuming average hydrologic conditions. Changes in the Bay computer models and BMP efficiencies indicate an increase of approximately 1.3 million pounds of nitrogen and 165,000 pounds of phosphorus over 2006 reported levels.

Sound Land Use

Land Conservation

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: **2007**

Approach to Implementation
The primary element of this commitment speaks to preserving 20 percent of the land area in the watershed. Starting from a June 30, 2000 baseline of properties that meet the definition of preserved lands, it was estimated that an additional 1.1 million acres of preserved lands in Virginia is needed to meet the 2010 goal. 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 determine progress toward the 2010 Land Conservation Goal. One key role of the state in this commitment relates to targeting its programs towards the most valued lands. The VLCF splits it's 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 allowing PDR grants to localities. The VLCF is responsible for developing a "needs assessment" (strategic plan) for future land preservation targeting efforts that will cohesively synthesize those properties and needs identified in the many plans of Virginia's conservation partners. This needs assessment was included as a chapter 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.

In the past year (FY2006), due to efforts by the conservation community across the state, 49,837.41 acres of additional land in Virginia's Chesapeake Bay watershed were protected, which was over 8,000 acres more than the previous 12 months. [Statewide, 65,763.74 acres were conserved.] This continues an encouraging trend of increasing land protection in the Bay watershed, well above the 37,228.74 new acres protected on average in the previous five years, but still short of the pace needed to meet the 2010 Chesapeake Bay Agreement goal. DCR is currently in the process of acquiring key State Park and Natural Heritage lands using Virginia Public Authority Bonds and General Obligation Bonds approved by voters in 2002, and in FY2006, the agency added 4,793.5 acres for both parks and natural areas across the state. In this same time period the Department of Game and Inland Fisheries protected 7,705.6 acres statewide. In FY2006, VOF, working with partners such as Department of Historic Resources, placed 40,246.98 acres under easement protection.

Progress/Outlook
Progress reported in 2007:

Virginia continues to make progress on mechanisms for spending land protection funds effectively, but still lacks a permanent funding source to aggressively address current goals. The ongoing development of the Virginia Conservation Lands Needs Assessment to serve as a targeting tool for the VLCF is providing a critical resource for government agencies and private land trusts to engage in strategic land-preservation efforts. Given adequate funding, the Commonwealth has the capability to accurately identify and track preserved lands and the programs in place to protect the lands within the Commonwealth.

In 2007, an exhaustive quality-control process to determine detailed totals in Virginia's database of protected lands turned up a significant error in the baseline calculations made back in 2000 that tempered the amount of progress made towards meeting the Bay goal. It was discovered that 120,918 acres had been erroneously counted as protected in the baseline numbers. Virginia's current land preservation status (i.e. the total amount of land preserved in Virginia's portion of the Chesapeake Bay watershed) as of October 31, 2007, is 2,415,981 acres, which represents 17.46% of the Bay watershed in Virginia. Since 20 percent of Virginia's Bay acreage equates to 2,766,378 acres, Virginia's remaining target is 350,397 acres - presenting a substantial challenge.

Governor Kaine has become a champion for this issue, however, and has made land preservation a keystone component of his natural resources agenda, with an ambitious land conservation goal to preserve an additional 400,000 acres in Virginia by the end of the decade. Those additional acres will achieve significant progress towards the Bay Agreement commitment as well as advance important land preservation in Virginia's southern river watersheds. When he announced the 400,000 acre goal, the Governor noted that "[w]ith every passing day, land is becoming more expensive and scarcer. I will set and meet this preservation goal during my term – not just because it's the right thing to do – I will do it because if I don't, the opportunity to do it will not be there for future governors and future Virginians". The Governor has also recognized that protecting land also helps in meeting goals relating to water quality, recreation, and quality of life.

Additional Efforts
Virginia will also continue to seek federal funds to assist with land preservation efforts and will work to 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.

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: **2007**

Approach to Implementation
This commitment will be achieved through the implementation of Virginia's Chesapeake Bay Preservation Act, which contains requirements for localities within Tidewater Virginia to amend their codes and comprehensive plans to incorporate measures to protect water quality. Other efforts will include identifying barriers to, and opportunities for, promoting sound land use, strengthening programs that promote sound land use, and providing technical and financial assistance to targeted audiences to promote environmentally sensitive new development and redevelopment. Funds for this exact purpose was initially allocated and distributed under the Chesapeake Bay Preservation Act, however, that funding was eliminated in 2002. However, Virginia's Department of Chesapeake Bay Local Assistance (DCBLA) allocates funds through other sources such as Chesapeake Bay Implementation, Coastal Zone Management, National Fish & Wildlife Foundation and other grant programs to promote improved implementation of the sound land use management criteria contained in the Bay Act. 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 was 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. As stated previously, localities within Tidewater Virginia are required by the Chesapeake Bay Preservation Act to implement sound land use management techniques. The next phase of Bay Act implementation, which is now being planned, will involve requiring localities to review their local codes to identify impediments to the protection of water quality. The planning process for this phase is expected to conclude by early 2008. DCBLA will then initiate the process of assisting localities in the review of their ordinances and incorporation of measures to protect water quality. Virginia also participates in the Development, Redevelopment and Revitalization workgroup, a

subset of the Chesapeake Bay Program's Land Growth and Stewardship Subcommittee, 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. 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 of agriculture and forested lands to accommodate a fair share of the thirty percent target.

Progress/Outlook
Progress reported in 2007:
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 of the unavailability of land cover data and bias of draft impervious cover data. 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.

Stewardship and Community Engagement

Education and Outreach

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.

Department of Conservation and Recreation, Department of Education -
Year: **2007**

State Role
DEQ, DOE

Progress/Outlook
Education staff at natural resources agencies, state museums, and the Department of Education implement a coordinated plan for integrating meaningful watershed field experiences in the public school program state-wide. This includes formal communication of pertinent information to school divisions; integration of related topics within appropriate SOL educator workshops; presentations at teacher conferences; public television, satellite, and other electronic training broadcasts; and meetings with school division leaders. Supplementary curriculum materials have been developed and used in conjunction with existing high-quality resources to promote meaningful watershed field experiences across grade levels.

The 2005 survey results from the VA Department of Education indicate that 100% of VA schools have academic standards related to watersheds and the Chesapeake Bay. In 2007, a second survey was distributed and completed by 83% of the school population (110 out of 132 school divisions). Based on these completed surveys, approximately 360,000 elementary school students, or 72 percent of elementary students, 79 percent of middle school students and 77 percent of high

school students have participated in at least one MWEE-type program during the instructional year. Despite these high levels of participation, DEQ estimates that less than 25% of the Class of 2007 had a *high-quality* experience and approximately 3% of Virginia's 1 million students in the watershed have a meaningful "on-the water" field experience annually. The DOE survey suggests that public schools are partially meeting the intent of this objective via locally developed programs, especially those supported with existing state funding such as the VA Classroom Grant (VEE and DCR provide mini-grants). The General Assembly provides modest funding to the Chesapeake Bay Foundation for watershed field experiences that reach about 3,000 students annually. Other sources such as soil and water conservation district education programs also are of assistance.

Additional Efforts

Meeting this objective completely will require a sustained implementation, including training of teachers and natural resource professionals, development of locations and facilities suitable for field investigations, and enhanced building and central office administrative support.