Annual Report on the Implementation of the Chesapeake 2000 Agreement

Prepared by the Secretary of Natural Resources
November 1, 2006

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. For 2006, this document is in two sections. Part I spotlights the Chesapeake Bay Program Keystone Commitments and Part II 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

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Table of Contents

PART I

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

C2K Keystone Commitments: Virginia 2006 Status

The *Chesapeake 2000* agreement, which details nearly 100 commitments, is one of the most aggressive and comprehensive watershed restoration plans ever developed. The Chesapeake Bay Program partners are committed to achieving these important commitments, and to pursuing all possible sources of supportive funding.

Several broad-or keystone-commitments are critical to leaving a healthy, sustainable Bay to future generations. Keystones are commitments that if accomplished will provide the greatest collateral benefit supporting the accomplishment of many associated commitments. They reveal some of the critical links and interrelationships among our elements of work.

Identifying keystones enables the Bay Program partners to focus their efforts on critical and imminent needs, and to make the best use of our management and assessment capabilities. Annually evaluated by the Bay Program's Implementation Committee, these keystones may change as goals are met and new opportunities for progress present themselves.

Bay Program managers are challenged to pursue work on many restoration fronts with an eye to how that work supports or is supported by the keystones. Reflecting our current strategic focus areas, the keystone commitments are...

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: **2006**

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 2006 as in 2005, but since salinities have returned to more normal levels in 2006, there has been a significant decline in large oysters due to disease mortalities. The Baywide population of oysters was slightly less in 2005 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. 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. 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.
- 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, 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 cultch materials must be located for the restoration efforts to continue.

Acres of harvest area restored

3288

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: **2006**

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 cultch restoration efforts for the entire period.

Additional Efforts

Secretary of Natural Resources, Preston Bryant, and Commissioner of Marine Resources, Steve Bowman, have appointed a Virginia Blue Ribbon Oyster Panel to investigate the Commonwealth's previous efforts at oyster restoration and to develop a restoration program for the future. The Panel consists of representatives of the oyster industry, environmental organizations, and the Virginia Institute of Marine Science. Now in its fact-finding mode, the Panel is looking at a variety of information related to oyster seed transplanting, shell planting, aquaculture development, cownose ray predation, oyster disease resistance and sanctuaries. The Panel is expected to develop an outline for future ecological and economic restoration of Virginia's oyster resource and its fishery, including appropriate and balanced uses of existing funding and the need for additional funding. The Panel is expected to complete its work by June 2007.

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: **2006**

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.

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: **2006**

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

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.
[Excerpt: 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 2005, 78,260 acres of SAV were mapped in Chesapeake Bay and its tributaries. This acreage represents 42% of the 185,000-acre goal and a 7 percent increase from the previous year's total. . 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.

Additional Efforts

See Commitment 2.1.2. [Excerpt:

? 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).

? P lanting 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.]

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: **2006**

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

- 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 was reprinted and distributed to localities throughout the commonwealth in 2006
- A companion tool to the guidebook, a DVD entitled Catch the Watershed Wave, was produced and distributed along with the guidance book according to the distribution plan to local officials
- Community Watershed Dialogues were conducted in multiple, targeted watersheds, in partnership with the CBP CWiC Taskforce, and the National Parks Service, Rivers and Trails Conservation program. These Dialogues were conducted as a follow-up to previous watershed management planning workshops in localities that requested further assistance with or expressed interest in developing watershed management plans. The NPS hired two Watershed Coordinators that provided assistance to state and local staff in working with locality stakeholders to develop watershed management plans

The overall acreage for two-thirds coverage of 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. However, current funding resources are not provided for the development of plans that are directly targeted to meet the commitment by 2010. To date, a total of 1,501,020 acres covered by qualifying plans has been reported in Virginia. This is approximately 16% of the 9,381,375-acre goal amount assigned to VA. TMDL Implementation Plans, covering over 416,309 acres in the Bay watershed of VA, were not included in this count due to the initial basis for their development being 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 continue to implement Tributary Strategies.

Additional Efforts

The CBP and NPS assisted state staff with planning the "Linking Land Use to Watershed Management Planning Workshops" targeting local government staff. There were 3 workshops conducted in the central Richmond area between June and September 2006.
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 continue 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: **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.

System Administrator -

Year: **2006**

2002-2005 Voluntary Wetlands Restoration - VA

Wetland Type	Enhanced (Acres)	Restored (Acres)	Created (Acres)	Preservation	Totals
Nontidal Emergent	49	262.9	27	450.5	789.4
Nontidal Scrub/Shrub	6	59.268	59.268	85.268	209.804
Nontidal Forested	0	366.03	14.53	107.45	488.01
Tidal (All)	498	232.1	21	3191.5	3942.6
TOTALS	553	920.298	121.798	3834.718	5429.814

2006 Reported Voluntary Wetlands Restoration - VA

Wetland Type	Enhanced (Acres)	Restored (Acres)	Created (Acres)	Preservation	Totals
Nontidal Emergent	35	55		2447	2537
Nontidal Scrub/Shrub				37	37
Nontidal Forested		18.53	14.53	213.45	246.51
Tidal (All)	258				258
TOTALS	293	73.53	14.53	2697.45	3078.51

Forests

2.4.2 -

Conserve existing forests along all streams and shorelines.

System Administrator -

Year: **2006**

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, develop innovative programs, programs and incentives to support forest

retention and protection 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 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. Five million in state funds is available through VLCF. 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 (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. The Virginia Land Conservation Foundation was not funded to 2004 levels and the outlook is unclear for increased funding. The timber industry has been divesting land rapidly and offers much opportunity for larger conservation efforts. The Conservation Tax Credit has been modified slightly but remains strong. The Governor announced his 400,000 acres by 2010 goal for land conservation, which meshes well with long standing efforts.

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. In order to achieve this:

Department of Conservation and Recreation -

Year: **2006**

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 http://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

State tributary teams for the Shenandoah, Potomac, Rappahannock, York, Upper James, Middle James, Lower James, and Eastern Shore Basins, in conjunction with other state/federal agency staff and affected stakeholders, developed multiple computer input decks that ultimately achieved the Chesapeake Bay pollutant allocations for nutrients and sediment. Revised tributary strategies

(per C2K) were completed in April 2004, one year after nutrient and sediment load allocations were provided, and released for public comment. Virginia's Statewide Tributary Strategy was finalized in January of 2005. Revised strategies for all of VA's Basins were finalized in March of 2005. DCR is undertaking the effort to meet with local governments and SWCDs to foster local implementation of the Strategies.

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 reductions from progress (point source and NPS) occurring during 2005 are estimated to be over 1.5 million pounds of nitrogen, over 150 thousand lbs of Phosphorus, and over 36 thousand tons of Sediment annually will be eliminated assuming average hydrologic conditions.

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: **2006**

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 listing and acreage total of properties that meet the definition of preserved lands, an additional 1.1 million acres in Virginia was determined to be 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 which includes 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 will be 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 twelve 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 falls 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

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

Virginia's current land preservation status (Amount of Land Preserved in Virginia's Portion of the Chesapeake Bay Watershed) as of June 30, 2006 is as follows:

Federal - 1,754,504.54 acres

State - 554,984.34 acres

Local - 100,400.68 acres

Non Profit/ Private - 48,037.23 acres

Total Protected - 2,457,926.79 acres

Almost 18 percent (17.77 %) of the Bay Watershed in Virginia is protected (20 percent of Virginia's Bay acreage is 2,766,378 acres). Virginia's remaining target is 308,451.21 acres, which presents a daunting task. However, Governor Kaine has become a champion for this issue and has made land preservation a keystone to his natural resources agenda.

In April 2006, Governor Kaine announced an ambitious land conservation goal, to preserve an additional 400,000 acres in Virginia by the end of the decade. Those additional acres encompass and extend a commitment made by Virginia and its Bay partner states in 2000 to protect 20 percent of the lands in the Chesapeake Bay Watershed by 2010. The 400,000-acre goal is based on both achieving the Chesapeake Bay commitment and in advancing important land preservation in Virginia's southern river watersheds. When he announced the additional 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. BR>

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: **2006**

Approach to Implementation

This commitment will be achieved through the implementation of the Chesapeake Bay Preservation Act, which as previously stated, 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 promoting sound land use (including those other commitments which will help achieve this), and finally, providing technical and financial assistance to targeted audiences to promote environmentally sensitive new development and redevelopment. Money for this exact purpose was initially allocated and distributed under the Chesapeake Bay Preservation Act, however, that funding was eliminated in 2002. However, 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 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. 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 the end of 2007. 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 LGSS, which is charged with developing a strategy to meet this commitment. The workgroup has developed draft parameters for the commitment, a definition of harmful sprawl, a baseline determination and a direction for a tracking system. The jurisdictions have agreed on the definition of harmful sprawl and the tracking methodology, which will be RESAC. Virginia will not be required to provide or maintain a separate data system but may have to provide some data. The Commonwealth will need to develop and implement measures to reduce "harmful sprawl" development (however defined) of agriculture and forested lands to accommodate a fair share of the 30 percent target.

Progress/Outlook

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

Additional Efforts

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

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.

System Administrator -
Year: **2006**

Approach to Implementation

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 statewide. 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. New supplementary curriculum materials, including Virginia's Water Resources: A Tool for Teachers, have been developed and used in conjunction with existing high-quality resources to promote meaningful watershed field experiences across grade levels.

Survey results from the VA Department of Education indicate that 100% of VA schools have academic standards related to watersheds and the Chesapeake Bay. Approximately 76% of those responding report spending adequate instructional time on the standards. DEQ estimates that less than 25% of the Class of 2005 had a meaningful experience and approximately 3% of Virginia's 1 million students in the watershed have a meaningful 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 Grants (VEE and DCR provide mini-grants). The General Assembly provides modest funding to the Chesapeake Bay Foundation for watershed field experiences that reach about 7,000 Other sources such as soil and water conservation district education programs also are of assistance.

Additional Efforts
Meeting this objective by 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.

PART II

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: **2006**

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 2006 as in 2005, but since salinities have returned to more normal levels in 2006, there has been a significant decline in large oysters due to disease mortalities. The Baywide population of oysters was slightly less in 2005 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. 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. 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.

- 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, 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 cultch materials must be located for the restoration efforts to continue.

Acres of harvest area restored

3288

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: **2006**

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 cultch restoration efforts for the entire period.

Additional Efforts

Secretary of Natural Resources, Preston Bryant, and Commissioner of Marine Resources, Steve Bowman, have appointed a Virginia Blue Ribbon Oyster Panel to investigate the Commonwealth's previous efforts at oyster restoration and to develop a restoration program for the future. The Panel consists of representatives of the oyster industry, environmental organizations, and the Virginia Institute of Marine Science. Now in its fact-finding mode, the Panel is looking at a variety of information related to oyster seed transplanting, shell planting, aquaculture development, cownose ray predation, oyster disease resistance and sanctuaries. The Panel is expected to develop an outline for future ecological and economic restoration of Virginia's oyster resource and its fishery, including appropriate and balanced uses of existing funding and the need for additional funding. The Panel is expected to complete its work by June 2007.

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:* 2006**

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

- A project spearheaded by DGIF has successfully eradicated the infestation of zebra mussels at Millbrook Quarry in Prince William County. The process entailed injecting 174,000 gallons of potassium chloride solution (KCL) over a 3-week period. The eradication was confirmed using 4 methods. First, over a thousand mussels were scraped from rocks at numerous sites around the quarry during informal assessments, revealing no live mussels. Second, DGIF scuba divers who had documented the extent of the infestation during pre-eradication studies conducted a visual inspection of the quarry, searching for live zebra mussels but finding none. Third, Aquatic Sciences L.P. conducted extensive video survey and documentation of the dead zebra mussels through use of a robotic camera. Finally, eighty bioassays of 100 live zebra mussels each were placed at various locations and depths throughout the quarry and thus exposed to the treated quarry water. After 31 days of exposure to the treated quarry water, 100% of the test mussels had died. None of the 100 "control" zebra mussels held in untreated water drawn from Broad Run died during their bioassay period. In dramatic contrast, other aquatic wildlife including turtles, fishes, aquatic insects, and snails continue to thrive in the quarry.
- In 2006, a total of 70 northern snakeheads were collected and radio-tagged from Virginia tributaries of the Potomac. Currently, a PhD student from Virginia Tech is tracking these fish. DGIF staff and Maryland DNR staff are assisting with the project. In addition, USGS biologists collected tissue samples from the tagged fish. The samples are being used, in part,

to assess the presence of disease in this species.

- DGIF staff continue to educate the public about the snakehead fish, which seems to be well established at this time.
- 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 have been proven feasible. Prevention of accidental introductions of others will be very difficult, and deliberate illegal introductions of some species are likely.
    - o

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: **2006**

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 Rappahannock 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 Rappahannock 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

- Weekly boat electrofishing for adult anadromous fish was conducted in spring 2006 on the James and Rappahannock rivers in the fall zones. Less frequent sampling was also conducted on the Appomattox and Mattaponi rivers. Blueback herring were found upstream of the former site of Embrey Dam on the Rappahannock River (American shad, hickory shad and striped bass were found in recent years since the removal). Upper Rappahannock sampling was very limited in 2006 due to low-flow conditions. American shad relative abundance was low below Boshers Dam on the James River. Juvenile shad and herring collections began in June and are continuing through the fall. Boat push netting upstream of Boshers Dam resulted in many American shad. On the tidal Rappahannock near Fredericksburg boat push netting resulted in many American shad and river herring. American shad otoliths will be examined to determine origin (hatchery vs. wild).
- Boshers Dam vertical slot fishway on the James River was operated through mid June 2006. Digital video data were collected as conditions allowed. Review and analysis is now being conducted. Passage peaked at approximately 1000 American shad in 2002 but numbers have declined annually since 2002 similar to the declining trend at other Bay fish passage facilities where shad are counted (e.g., Conowingo lift on the Susquehanna).
- The Rivanna Conservation Society has signed an MOA with the owner of Woolen Mills Dam (located on the Rivanna River in Charlottesville) to proceed with this removal project that is being done in cooperation with DGIF. Permitting is near completion and the project will soon be advertised for bids.
- Removal of Quinn Dam on the Tye River (Nelson County), a tributary of the James River, is being pursued by the DGIF in cooperation with the Quinn family, AR-NOAA funding partnership, a dedicated volunteer, and the Virginia Organizing Project.
- Egg-taking crews on the Pamunkey and Potomac rivers did an outstanding job this year, collecting a total of over 27 million fertilized American shad eggs. A special thank you goes out to the Interstate Commission on the Potomac River Basin and the Potomac River Fisheries Commission for their assistance on this project. All shad fry have been released from the King and Queen Fish Cultural Station and the Harrison Lake National Fish Hatchery. Both facilities had an outstanding production year, having an overall survival rate of 58.6% of the eggs received to fry stocked. As a result, all stocking goals for Virginia's rivers were either met or exceeded in 2006. In the James River system, the mainstem of the river above Bosher's Dam received 5,067,543 shad fry. The Appomattox received 1,156,457

fry, and the Slate and Rivanna rivers both received over 400,000 fish. For the first time since stocking operations began on the Rappahannock River (2003), stocking goals were exceeded in that system, with the mainstem receiving 4,914,507 fish, and the Hazel River being stocked with 1,350,281 shad fry.

- Replacement stockings, for brood fish losses, accounted for the release of 2,564,031 American shad into the Pamunkey (1,405,957) and Potomac (1,158,074) rivers. The total number of shad larvae released in 2006 was 15,854,860 - bring the total number of American shad fry produced and stocked for this program to 134,264,560 since 1992.
    - o

Additional Efforts

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.

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: **2006**

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 2006 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 while initially increasing on an annual basis, have recently declined, perhaps the result of predation factors.
- 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: **2006**

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. As of January 2005, 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

The VMRC approved a restricted shad bycatch fishery for portions of the main tributaries to the Chesapeake Bay in 2006. Fishery dependent and monitoring data collected from this small fishery, in combination with ongoing fishery independent surveys, may prove useful in an estimation of stock size by tributary. Further analysis is needed.

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: **2006**

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 is 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 2007.

Additional Efforts

Governor Tim Kaine has offered, and the Atlantic States Marine Fisheries Commission has subsequently adopted, a new strategy for the management of Atlantic Menhaden in Chesapeake Bay. The plan is intended to prevent the expansion of the commercial reduction fishery for menhaden in

the Bay until such time as an organized research effort can determine if localized depletion of the this resource is occurring. Several pieces of information tend to indicate that localized depletion is occurring, but the results are not definitive. Under the Kaine Plan, the reduction fishery harvest in the Bay will be capped at the industry's average harvest from 2001-2005. Excess harvest in any year, should it occur, will be deducted from the following year's cap. Likewise, underharvest in any year can be added to the following year's cap, but the resulting cap cannot exceed 122, 740 metric tons. A second element of the Kaine Plan includes a Memorandum of Understanding with Omega Protein Corporation, the principle reduction fishery participant. The MOU stipulates Omega Protein's willingness to participate in research critical to the understanding of localized depletion. Omega protein also has agreed to assist the Commonwealth in the procurement of additional funds for the much needed research.

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

Marine Resources Commission -

Year: **2006**

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, as an active participant in the Fisheries Steering Committee, continues to work towards the development of ecosystem based fishery management plans.

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 has developed a multispecies Virtual Population Analysis.
Striped bass has been chosen by the Fisheries Steering Committee as the pilot species for ecosystem fishery plan development. The background section of the plan has been drafted and will be peer reviewed by December 2006. Background sections for blue crab and Alosine species will follow, in January 2007. Maryland Sea Grant has agreed to facilitate discussions of potential management measures that could apply to these ecosystem plans.

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: **2006**

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: **2006**

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 the exploitation rate by 15 percent to ultimately achieve a doubling of the crab spawning stock.

A new and improved blue crab analytical stock assessment was completed in October 2005. The assessment describes 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 2006.

? 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.

? The spawning stock remains at historically low levels of abundance in spite of recent management efforts.

In 2005, the target exploitation rate was achieved. It is evident that harvest reduction strategies, alone, may not afford the best approach for achieving a doubling of the spawning stock. Management strategies that will augment spawning or abundance (such as closed areas or sanctuaries), in conjunction with harvest effort reductions are critical during times when environmental conditions and recruitment are sub-par.

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, completed in 2005, will result in a revision of targets and goals necessary for appropriate conservation and management of the Chesapeake stock of blue crabs.

Field studies of the Virginia Institute of Marine Science recently have identified surprisingly large quantities of "ghost crab pots" in the lower York River. Ghost pots are those lost by the harvester, from a variety of reasons, including vandalism, boat propeller damage to the buoy line, and simple discarding by the owner. VIMS analyses indicate that the number of lost pots is significant and, more importantly, that these pots continue to capture and kill crabs and fishes long after there are lost. The potential mortality to the resources from these lost pots is suggested to be high. Previously, the extent of lost pots and the mortality to crabs from lost pots was unknown. VIMS now plans an expansion of its efforts to determine the geographical extent of this problem, pending the receipt of additional funding.

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: **2006**

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
78260

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: **2006**

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 2005, 78,260 acres of SAV were mapped in Chesapeake Bay and its tributaries. This acreage represents 42% of the 185,000-acre goal and a 7 percent increase from the previous year's total.

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: **2006**

Approach to Implementation
See Commitment 2.1.2.

State Role
See Commitment 2.1.2.

Progress/Outlook
For 2005, 78,260 acres of SAV were mapped in Chesapeake Bay and its tributaries. This acreage represents 42% of the 185,000-acre goal and a 7 percent increase from the previous year's total. .

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.

Additional Efforts
See Commitment 2.1.2.

2.2 - Watersheds

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

Department of Conservation and Recreation -

Year: **2006**

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
- 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 was reprinted and distributed to localities throughout the commonwealth in 2006
- A companion tool to the guidebook, a DVD entitled Catch the Watershed Wave, was produced stage and distributed along with the guidance book according to the distribution plan to local officials
- Community Watershed Dialogues were conducted in multiple, targeted watersheds, in partnership with the CBP CWiC Taskforce, and the National Parks Service, Rivers and Trails Conservation program. These Dialogues were conducted as a follow-up to previous watershed management planning workshops in localities that requested further assistance with or expressed interest in developing watershed management plans. The NPS hired two Watershed Coordinators that provided assistance to state and local staff in working with locality stakeholders to develop watershed management plans

The overall acreage for two-thirds coverage of 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. However, current funding resources are not provided for the development of plans that are directly targeted to meet the commitment by 2010. To date, a total of

1,501,020 acres covered by qualifying plans has been reported in Virginia. This is approximately 16 percent of the 9,381,375-acre goal amount assigned to VA. TMDL Implementation Plans, covering over 416,309 acres in the Bay watershed of VA, were not included in this count due to the initial basis for their development being 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 continue to implement Tributary Strategies.

Additional Efforts
The CBP and NPS assisted state staff with planning the "Linking Land Use to Watershed Management Planning Workshops" targeting local government staff. There were 3 workshops conducted in the central Richmond area between June and September 2006.

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 continue 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.

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: **2006**

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. Further, funding is made available when possible.

Progress/Outlook

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

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 (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.

Department of Conservation and Recreation -

Year: **2006**

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

The progress for this commitment in 2006 was substantial and likely the best yet. While this commitment could be classified as complete due to being dated, work to continue projects promoting stream corridor protection and restoration will be on going. As stated in 2005… 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). The accomplishments in 2006 can be greatly attributed to the Water Quality Improvement Act projects started throughout the state. For example, in Albemarle County a project is underway to establish 471 acres of riparian buffers based on a watershed management plan that also targets impaired streams. In the Shenandoah and Upper James watersheds, work is underway to establish easements totaling 66 acres of permanently protected riparian land in each. Other WQIA projects throughout the Bay watershed include cooperative agreements between DCR and local entities that will result in nutrient reductions by institutionalizing change at the local level via new and updated city and county ordinances.

Additional Efforts

During 2006, the state-level appropriation to the VA Water Quality Improvement Fund enabled DCR to strengthen and expand criteria for funding implementation activities in connection with established local watershed management plans. Local governments and non-governmental organizations, in response to the agency's RFP, submitted a total of 102 proposals. The two focus areas were: (1) New Cooperative Non Point Source Programs with localities and (2) Strategic Nonpoint Source Water Quality Initiative Projects. A total of 22 projects, 12 in the Chesapeake Bay Watershed were awarded with approximately $1,610,000 of state WQIA funding. DCR will continue to promote watershed management planning as an effective method of achieving water quality goals as we move forward with implementation activities related to Tributary Strategies and Virginia nonpoint source pollution reduction goals.

In addition to following through on implementation of existing plans, in 2006 Governor Kaine announced his initiative to protect 400,000 acres of land. In the 2006 General Assembly Session, the legislature passed House Bill 1150 which details the need for Virginia to develop a plan for clean up of the Chesapeake Bay and Virginia waters addressing both point and nonpoint source pollution.

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.

System Administrator -

Year: **2006**

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.

System Administrator -

Year: **2006**

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 basinwide 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.

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: **2006**

Approach to Implementation

1. 1. Regulate activites in wetlands through permitting program
   - Avoidance and minimization of impacts
   - Compensation for unavoidable impacts
2. 2. Improve monitoring and enforcement activities
   - No unpermitted impacts
   - Ensure success of compensation efforts
3. 3. Improve tracking of welands 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 2006 statistics for acres of permitted 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	115.21	115.41	.19
Non-tidal scrub/shrub	14.43	22.53	8.10
Non-tidal forested	175.45	333.41	157.97
Total Wetlands	305.09	471.35	166.26

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.

System Administrator -

Year: **2006**

Approach to Implementation

This data is excerpted from the 2005 report update:

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

State Role
This data is excerpted from the 2005 report update:

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

Progress/Outlook
This data is excerpted from the 2005 report update:

DGIF and DCR, through its partnering with organizations such as the USFWS Partners for Wildlife Program, USDA Farm Bill Programs, Ducks Unlimited, the Chesapeake Bay Foundation, and others, have obtained funding and grants for wetland restoration projects within the Chesapeake Bay watershed. DEQ has organized a Virginia Wetlands Enhancement and Restoration Coordinating Committee consisting of state and federal agencies and non-profit organizations engaged in wetland restoration; participants have provided the first annual reporting of acres of wetlands restored via their projects so that we can track progress toward the goal of having an average restoration rate of 2,500 acres per year basin wide by 2005 and beyond.

2003 Data on Voluntary Restoration within the Chesapeake Bay

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

Progress to date is as follows:

- Goal: 6,000

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

Additional Efforts
This data is excerpted from the 2005 report update:

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

Data as transferred to DCR from DEQ in June 2006:

2002-2005 Voluntary Wetlands Restoration- VA

Wetland Type	Enhanced (Acres)	Restored (Acres)	Created (Acres)	Preservation	Totals
Nontidal Emergent	49	262.9	27	450.5	789.4
Nontidal Scrub/Shrub	6	59.268	59.268	85.268	209.804
Nontidal Forested	0	366.03	14.53	107.45	488.01
Tidal (All)	498	232.1	21	3191.5	3942.6
Totals	553	920.298	121.798	3834.718	5429.814

2006 Reported Voluntary Wetlands Restoration - VA

Wetland Type	Enhanced (Acres)	Restored (Acres)	Created (Acres)	Preservation	Totals
Nontidal Emergent	35	55	0	2447	2537
Nontidal Scrub/Shrub	0	0	0	37	37
Nontidal Forested	0	18.53	14.53	213.45	246.51
Tidal (All)	258	0	0	0	258
Totals	293	73.53	14.53	2697.45	3078.51

2.3.3.1 -

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

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

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

2.4 - Forests

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

System Administrator -

Year: **2006**

Approach to Implementation

Directive 03-01 By 2010, achieve 10,000 new miles by 2010 with additional miles added based on the Bay Tributary Strategy process. Work with 5 local jurisdictions in each Bay signatory to complete an assessment of urban forests, adopt a goal to increase canopy cover and encourage measures to attain the established goals in order to enhance and extend forest buffer functions in urban areas.

- 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 December 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 have increased the total goal numbers for RFB.

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 stromwater 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, 2004, 2406.5 miles of riparian forest buffers have been implemented, 1,432.8 miles within the Chesapeake Bay Watershed and 973.7 within the Southern Rivers Watershed. The 2005 numbers should be avialable soon.
- Success has moderated 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: **2006**

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, develop innovative programs, programs and incentives to support forest retention and protection 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 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 easment and fee simple acquisition in July 2005. Five million in state funds is available through VLCF. 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 (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. The Virginia Land Conservation Foundation was not funded to 2004 levels and the outlook is unclear for increased funding. The timber industry has been divesting land rapidly and offers much opportunity for larger conservation efforts. The Conservation Tax Credit has been modified slightly but remains strong. The Governor announced his 400,000 acres by 2010 goal for land conservation which meshes well with long standing efforts.

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: **2006**

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 U.S Forest Service will host a large Green Infrastructure training in 2007 based on the Department of Forestry model utilized last year. Eighty professional staff including local personnel will be invited to attend.

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 2007 for $5 million. The Coastal Program's Coastal Estuarine Protection program has earmarked around $500,000 for the Dragon Run watershed. This money will conserve around 500 additional acres. Localities present the biggest challenges to green infrastructure planning and implementation with land use and transportation issues overlapping conservation issues.

Additional Efforts

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

Senate Joint Resolution 75 and 367 will study the options for Forest Land conservation and review the impact of local ordinances on forest land management. The report is due to the General Assembly in November, 2005.

Conserving the Forest Landbase is the agency's #3 goal. Each local/county 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.

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: **2006**

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: **2006**

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 http://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

State tributary teams for the Shenandoah, Potomac, Rappahannock, York, Upper James, Middle James, Lower James, and Eastern Shore Basins, in conjunction with other state/federal agency staff and affected stakeholders, developed multiple computer input decks that ultimately achieved the Chesapeake Bay pollutant allocations for nutrients and sediment. Revised tributary strategies (per C2K) were completed in April 2004, one year after nutrient and sediment load allocations were provided, and released for public comment. Virginia's Statewide Tributary Strategy was finalized in January of 2005. Revised strategies for all of VA's Basins were finalized in March of 2005. DCR is undertaking the effort to meet with local governments and SWCDs to foster local implementation of the Strategies.

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 reductions from progress (point source and NPS) occurring during 2005 are estimated to be over 1.5 million pounds of nitrogen, over 150 thousand lbs of Phosphorus, and over 36 thousand tons of Sediment annually will be eliminated assuming average hydrologic conditions.

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;

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: **2006**

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
This milestone has been completed no additional efforts are required.

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: **2006**

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 of 2005. Revised strategies for all of VA's Basins were finalized in March of 2005.

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

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

Progress/Outlook

Revised tributary strategies (per C2K) were completed in April of 2004. One year after the U.S. EPA Chesapeake Bay Program provided nutrient and sediment load allocations. These strategies were finalized in March of 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 completed updates and improvements of existing Agricultural Cost Share Database in September of 2006. Development of new urban data tracking system(s) and improvement of overall NPS data tracking is continuing. Most MS4 localities responded to DCR inquiries for their interest in sharing what data they have available about their programs and are interested in creation of a system that will collect information 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 was successful in getting an additional BMP (Continuous No-till or CNT) credited in the U.S. EPA Chesapeake Bay Program Watershed Model. This will increase the nutrient and sediment reductions Virginia receives credit for in the U.S. EPA Chesapeake Bay Program model and program as a result of NPS Program implementation.

County level input decks were developed and shared with the affected jurisdictions and soil and water conservation districts during the past year to foster discussion on how to implement the Tributary Strategies nutrient and sediment reduction goals at the local level.

3.1.2.4 -

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

3.1.2.5 -

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

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.

System Administrator -

Year: **2006**

Approach to Implementation

State Role

Progress/Outlook
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 (regulatory rather than voluntary) to address this issue. With the exception of Pollution Prevention efforts, all other mixing zone elimination activities have ceased.

Additional Efforts

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

System Administrator -

Year: **2006**

Approach to Implementation

State Role

Progress/Outlook

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 (regulatory rather than voluntary) to address this issue. With the exception of Pollution Prevention efforts, all other mixing zone elimination activities have ceased.

Additional Efforts

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

System Administrator -

Year: **2006**

Approach to Implementation

State Role

Progress/Outlook

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 (regulatory rather than voluntary) to address this issue. With the exception of Pollution Prevention efforts, all other mixing zone elimination activities have ceased.

Additional Efforts

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: **2006**

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 (regulatory rather than voluntary) 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 750 participants and 140 mentors in Businesses for the Bay (B4B). Virginia accounts for 325 B4B members and 60 of its mentors. In 2005, Virginia participants reported approximately 55 million pounds of waste reduction and recycling, and nearly $1 million in cost savings due to pollution prevention efforts. DEQ's Office of Pollution Prevention actively promotes B4B 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 B4B, 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 21 awards in various categories, with following awards presented to Virginia entities:

- Outstanding Achievement for P2 – Small Facility: C.R.Hudgins, Lynchburg
- Outstanding Achievement for P2 – Large Facility: Cargill Meat Solutions, Dayton
- Outstanding Achievement for P2 – Large Facility: Earl Industries, Portsmouth
- Outstanding Achievement for a Federal Govt. Facility: NOAA Marine Operations Center, Norfolk
- Outstanding Achievement for a State Govt. Facility: VA Port Authority, Portsmouth
- Outstanding Achievement for a Local Govt. Facility: Southeastern Public Service Authority, Chesapeake
- Outstanding Achievement for Nutrient Reduction: Degussa Goldschmidt Chemical Corp., Hopewell
- Outstanding Achievement for Nutrient Reduction: Greif Inc., Riverville
- Outstanding Achievement for Nutrient Reduction: Fairfax Co. Wastewater Management Program
- Mentor of the Year: Gordon Worrell, Smithfield Transportation
- Mentor of the Year: Ruth DeBrito, Smithfield Transportation

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.

System Administrator -

Year: **2006**

Approach to Implementation

The 2003 project, "Integrated Pest Management Demonstration Project for Corn, Soybeans, and Small Grain in the Coastal Plain of Virginia," took five little used or misunderstood IPM practices that had potential for increased use and demonstrated them at farmer field days. The practices were selected based on needs identified in our 2002 IPM survey of farmers in the coastal plains region of Virginia. The 2003 project served to better educate farmers on currently available IPM practices in Virginia (including scouting, identifying, sampling, and managing pests) and increased public awareness of IPM practices. The five practices demonstrated were:

1. How to determine if soybeans require insecticide treatments for defoliating insects
2. How to sample and manage cyst nematodes in soybean
3. Insect pest identification and scouting education
4. Use of IPM Internet resources and technology
5. Sampling and control options for soil insect pests of corn

The project, "Photo Guide of Pest and Beneficial Insects of Corn, Soybean, and Wheat in the Mid-Atlantic Region," helps clientele to properly identify over 50 pests and beneficial insects. Once properly identified, thresholds and management recommendations for the species can be found in Virginia Cooperative Extension Pest Management Guides (http://www.ext.vt.edu/pubs/pmg/index.html). This system will help to prevent unnecessary or off-label pesticide applications. The 10,000 insect identification guides were divided among Virginia, Maryland, and Delaware extension services and distributed to producers, agricultural industry, extension personnel, and others who requested them.

State Role

This project involved cooperation between the Department of Conservation and Recreation (DCR), Virginia Tech, and Virginia Cooperative Extension Agriculture and Natural Resource (VCE ANR) Agents. DCR and Virginia Tech investigators administered the project.

The guide was produced by Agriculture and Extension Communications at Virginia Tech. Twenty-three photographers are acknowledged for allowing the use of their insect images.

Progress/Outlook

Our 2002 surveys and focus groups gave local farmers an opportunity to communicate their needs

and concerns to VCE and Virginia Tech researchers. The 2003 IPM demonstration projects allowed VCE and Virginia Tech researchers to respond to some of these needs, providing better explanations and/or clarification on currently available IPM practices. Finally, the 2003 insect identification guide project allowed VCE and Virginia Tech to provide farmers, agricultural industry personnel, extension personnel, and others a much-needed hard-copy resource to assist them in accurately identifying local pests and beneficial insects. Returned survey cards indicate that on a scale of 1=not useful to 5=very useful, the insect identification guide was useful (4.7, n=178), improved the user's ability to identify an insect (4.6, n=177), and helped the user in making a better pest management decision (4.4, n=170). The education and exposure that these IPM projects provided should increase farmer adoption of IPM practices in the coastal plains region of Virginia.

Additional Efforts

Project personnel will strive to keep farmers aware of and using IPM practices. In the future, some Virginia Tech and/or VCE locations may be equipped with digital imaging equipment to aid communication between farmers, Agents, and Specialists. This would be useful in rapidly identifying insects/weeds/diseases and would facilitate management of pests, using current IPM information from the Specialists, as problems arise. As a follow-up project based on needs identified by the IPM Grower Survey, we were funded in part by DCR to produce 10,000 copies of the "Mid-Atlantic Guide to the Insect Pests and Beneficials of Corn, Soybean, and Small Grains." This is Virginia Cooperative Extension Pub. # 444-360. It is freely available through the Virginia Tech publication distribution center or by contacting the authors. VCE Agents in every Virginia county were sent 25 copies to begin with for distribution to producers and other clientele. Project personnel will strive to keep farmers aware of and using IPM practices. Several Virginia Tech Agricultural Research and Extension Centers have been equipped with digital imaging equipment (microscopes and cameras that can be attached to the microscope) to aid communication between farmers, Agents, and Specialists. This is useful in rapidly identifying insects, diseases, and weeds, and facilitates management of pests using current IPM information from the Specialists, as problems arise.

Acres covered by BMPs

3.3 - Priority Urban Waters

3.3.1 -
Support the restoration of the Anacostia River, Baltimore Harbor, and Elizabeth River and their watersheds as models for urban river restoration in the Bay basin.

Department of Environmental Quality -

Year: **2006**

Approach to Implementation

The Elizabeth River Project works with partners to voluntarily prevent future pollution, reduce existing pollution and create wildlife habitat through continued implementation of the *Revised Elizabeth River Watershed Action Plan*, which promotes the "Clean 14". This Action Plan was developed in partnership with DEQ and many diverse river interests. The focus areas include sediment remediation, stormwater runoff control, wetland restoration, pollution prevention, and monitoring. For additional details, see this Internet website: http://www.elizabethriver.org/

State Role

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

Progress/Outlook

Restoration work continues at several locations with remediation of contaminated sediments: Scuffletown Creek, Paradise Creek, and the Southern Branch. In October 2006 ERP published a 10-year plan for revitalization of the Money Point area of the Southern Branch, site of a former wood-treatment facility (Eppinger-Russell). ERP's first goal is cleanup of the most polluted bottom sediments and a task force selected its preference for the most feasible cleanup design, presented by the engineering firm SAIC - under contract for the first phase of a $5 million cleanup.

In August 2006, ERP received a report on benthic biological monitoring results for the Elizabeth River conducted in 2005. A summary of findings from this ODU study includes:

- It is estimated that 84 – 97% of the Elizabeth River bottom doesn't meet benthic restoration goals.
- Trend analyses were conducted using the data from 14 stations for the period 1999-2005, expressed with a Benthic Index of Biotic Integrity (B-IBI). Although all sites showed degraded biological indices, of the 29 significant trends in individual B-IBI metrics, 21 were improving trends and only 8 were degrading trends.
- In general, species diversity and biomass remain below reference condition levels while abundance was often above reference condition levels and considered excessive. Community composition was unbalanced with levels of pollution-indicative species above, and levels of pollution-sensitive species below, reference conditions.
- Water quality can be generally characterized as follows:

1. Poor status for nutrients, indicating high concentration levels, but there are some improving trends for both nitrogen and phosphorus levels.
2. Chlorophyll levels are good in both the E. Branch and So. Branch in spite of high nutrient levels and good water clarity. Chlorophyll levels are fair in the W. Branch but there is an improving long-term trend.
3. Bottom dissolved oxygen levels are fair to good in all branches.

Since 1998 ERP has created 11 new native oyster reefs in the Southern Branch, the most impacted part of the river. Volunteers stocked the reefs with a disease resistant oyster strain that VIMS developed through selective breeding.

Additional Efforts

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

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

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

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

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

3.4 - Air Pollution

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

Department of Environmental Quality -

Year: **2006**

Approach to Implementation

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

The state does not routinely assess the effects of airborne emissions on the Bay ecosystem. This type of assessment has generally been conducted by federal agencies, principally the EPA and programs funded by the Chesapeake Bay Program. Addressing the impacts of air pollutants from statewide sources to local waters would require an expansion of existing efforts.

Virginia continues to implement the federal Hazardous Air Pollutant program. To date, EPA has promulgated about 90 standards for hazardous airborne pollutants and has announced their intention to develop additional standards. Overall, this program will reduce emissions of 187 Hazardous Air Pollutants. In addition to the ozone season NOx emission control strategy, the state administers various control programs on new utility and industrial facilities such as New Source Performance Standards (NSPS) and Best Available Control Technology (BACT). These are implemented through the new source permitting process that requires continuous control of NOx emissions throughout the year.

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

State Role

State government participants include: DEQ.

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

Progress/Outlook

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

A Clean Air Act regulatory action that does have implications for the Bay is referred to as the "NOx SIP Call". EPA required 22 States and the District of Columbia to submit State Implementation Plans ("SIP") that address the regional transport of ground-level ozone. By improving air quality and reducing emissions of nitrogen oxides (a precursor to ozone formation), the actions directed by these plans will decrease the transport of ozone across State boundaries in the eastern half of the United States. This program began in 2004 has already resulted in substantial reductions in both NOx emission and transported ozone levels. One potential issue with the NOx SIP Call is that most companies are meeting the limits by installing controls which decrease the total amount of nitrogen emitted (converting NOx into nitrogen gas and water), but the remaining nitrogen released is in the form of ammonia. The potential impact of this air quality trade off on the Bay should be further evaluated.

In response to the EPA SIP Call, Virginia has adopted regulations to substantially reduce NOx emissions from power plants and large industrial sources. Each source is to demonstrate compliance with these new requirements by May 31, 2004. It is estimated that the total emission reductions from the affected sources will be on the order of 26,000 tons each year during the ozone season (May 1st through September). These reductions will occur from an ozone season baseline of 47,000 tons. The permanent statewide NOx emission cap for all subject sources will be on the order of 21,000 tons per ozone season. Information on the state regulation and emissions caps can be obtained from: http://www.deq.virginia.gov/air/planning/noxsip.html

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

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

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

Additional Efforts

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

Several air program efforts are under way nationally, under federal rules that could further aid the Bay's restoration. As a substitute for the inactive "Clear Skies" legislation, on March 10, 2005 EPA issued the Clean Air Interstate Rule (CAIR). According to EPA estimates, CAIR will achieve the largest reduction in air pollution in more than a decade by dramatically reducing pollution that moves across state boundaries. CAIR will permanently cap emissions of sulfur dioxide (SO2) and nitrogen oxides (NOx) in the eastern U.S. to assist areas to come into compliance with the federal fine particulate and ozone standards. When fully implemented, CAIR will reduce SO2 emissions across 28 eastern states and the District of Columbia by over 70% and NOx emissions by over 60% from 2003 levels. Virginia is in the process of adopting a state rule to implement the CAIR emission reduction requirements and caps.

The Clean Air Act requires that the EPA set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants that are considered to be harmful to public health and the environment. An attainment plan must be developed for areas that do not meet one or more NAAQS. In Virginia, this has historically involved areas such as Northern Virginia, Richmond, and Hampton Roads that have or currently do not meet the ozone standard. As a result, these areas have been required to develop and implement emission reduction plans to come into compliance with the ozone standard. These

plans have produced emission reductions of deposition related pollutants (mostly NOX) as part of these plans.

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

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.

System Administrator -

Year: **2006**

Approach to Implementation
The approach being taken is to continue using Federal Clean Vessel Act (CVA) funds to increase the number of pump-out facilities while working with marinas, boaters and marine industry stakeholders to increase environmental awareness and promote the establishment of no discharge zones.

State Role
No change from 2004 report.

Progress/Outlook
Continue to provide financial assistance to marinas and localities through the CVA for the installation of pump-out and dump stations. Virginia will reach the goal to increase pump-out availability before 2010. As the market becomes saturated with pump-out stations, focus will shift to providing funds for the maintenance and repair of all existing pump-out stations. Since April of 2000, 47 pump-out stations have been installed in the Chesapeake Bay region using CVA funds. Of those, 16 have been funded since July 2005. This figure does not include privately funded pump-out stations. To date, there are more than 200 pump-out stations and two sewage holding tank pump-out boats located in the Chesapeake Bay region.

Additional Efforts
The 2004 report accurately reflects the current situation with the exception of Hurricane Isabel. Emergency CVA funds were granted to Virginia by the United States Fish and Wildlife Service for the repair and replacement of hurricane damaged systems. All new systems are automatically entered into a maintenance program for yearly reimbursement of maintenance and repair costs.

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.

System Administrator -

Year: **2006**

Approach to Implementation
Continue to use the Clean Vessel Act (CVA) to increase the number and availability of pump-out stations in the Chesapeake Bay region. Increase level of education available to the boating public and stakeholders on the importance of proper vessel sewage disposal. Coordinate with the CVA Committee to support the creation of no discharge zones. On July 6, 2006, Virginia was awarded $928,125 in additional CVA funding to help meet these commitments.

State Role
See 3.5.1

Progress/Outlook
Continue to monitor existing pump-out facilities and offer CVA funding to all cooperating marinas for the maintenance and repair of pump-out facilities. Replace existing pump-out facilities when repair costs exceed a reasonable limit. Secure emergency funding when necessary for the repair and maintenance of pump-out facilities. Isabel and Ernesto both required emergency funding for the repair and maintenance of pump-out stations.

Additional Efforts
Additional resources may be needed to more effectively monitor the existing pump-out stations. Coordination between programs may also be necessary in locating new pump-out stations for the purposes of establishing no discharge zones. Expand education and outreach efforts as resources allow.

Sound Land Use

4.1 - Land Conservation

4.1.1 -

Department of Conservation and Recreation -

Year: **2006**

Approach to Implementation

The CBP's Resource Lands Assessment Task Force (RLATF) and an associated Technical Team have developed products to address this commitment, and are now working with other CBP teams to identify ways to make this information widely available and to determine how it may be best used to guide land protection activities and funding expenditures.

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 lands in Virginia that have potential significance for serving a variety of conservation, recreation, and open-space roles. The database continues to grow in size and accuracy, especially with incorporation of new parcels from localities and land trusts. DCR maintains an ArcIMS website (http://www.dcr.virginia.gov/olc/tools02a.htm) that allows public access to these data. Locality, state, federal, and other GIS users can readily download shapefiles from this website for use in their own GIS systems.

As parts of the Virginia Conservation Lands Needs Assessment (VCLNA), DCR has completed cultural asset and vulnerability models for Virginia and has expanded the Virginia Natural Landscape Assessment (VaNLA) statewide. The Virginia Cultural Asset Model was developed in an effort to map the existing (and potential) culturally valuable lands in Virginia as defined by the presence of historic resources and / or American Indian lands. The Virginia Vulnerability Model was developed in an effort to map predicted growth in Virginia, and it may be used to indicate the potential land use change from the current use to an urban or suburban use. Expansion of the VaNLA includes the entire state and a 20-mile buffer around the state to prevent truncation of cores and corridors and to facilitate edge matching with other states. Cores have been identified, mapped, categorized by size, and attributed with over 45 prioritization attributes. The pilot VaNLA for the coastal zone revealed the need to map smaller natural features so that small but important natural-resource lands would be represented in urban and suburban localities. Habitat fragments were developed to meet this need and they were prioritized with the same attributes as the cores. DCR plans to finalize the cores layer soon and move on to corridor development. The analysis will be completed in spring of 2007. DCR also plans to complete models for forest economics, prime farmland, water quality, and recreation in 2007. VCLNA products have become important tools for the land conservation community to use in identifying lands worthy of protection. Funding assistance

for the VCLNA has been received from the Virginia Land Conservation Foundation (VLCF), the Virginia Coastal Program, the Chesapeake Bay Program, and the Virginia Department of Forestry.

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 in partnership with 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: **2006**

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. A brochure entitled "Assistance from Virginia State Agencies for Land Conservation" has been disseminated to the public to provide an explanation of how different state programs can assist them meet their land conservation needs. The State also continues to partner with the Virginia United Land Trust (VaULT), an organization whose membership includes many of the Commonwealth's land trusts, to synergistically promote land conservation programs. In terms of purchase of development rights (PDR) efforts, the Virginia Land Conservation Foundation (VLCF) 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 has provided funding to local PDR projects during its past grant round and through funding provided by the VCLF to the Virginia Outdoors Foundation. 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.

Over fiscal year 2005 and fiscal year 2006 combined, 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 2001. A grant round in FY2005 funded 12 projects, and a second grant round in FY2006 funded 22 projects. In fiscal years 2007 and 2008, the General Assembly's budget included appropriations for VLCF of $2.5 million each year.

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, a coalition of organizations, sportsmen, businesses and industry representatives launched in 2004, continues to actively work 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. VLCF is working to advance 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: **2006**

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 listing and acreage total of properties that meet the definition of preserved lands, an additional 1.1 million acres in Virginia was determined to be 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 which includes 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 will be 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 twelve 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 falls 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

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

Virginia's current land preservation status (Amount of Land Preserved in Virginia's Portion of the Chesapeake Bay Watershed) as of June 30, 2006 is as follows:

Federal - 1,754,504.54 acres

State - 554,984.34 acres

Local - 100,400.68 acres

Non Profit/ Private - 48,037.23 acres

Total Protected - 2,457,926.79 acres

Almost 18 percent (17.77 %) of the Bay Watershed in Virginia is protected (20 percent of Virginia's Bay acreage is 2,766,378 acres). Virginia's remaining target is 308,451.21 acres, which presents a daunting task. However, Governor Kaine has become a champion for this issue and has made land preservation a keystone to his natural resources agenda.

In April 2006, Governor Kaine announced an ambitious land conservation goal, to preserve an additional 400,000 acres in Virginia by the end of the decade. Those additional acres encompass and extend a commitment made by Virginia and its Bay partner states in 2000 to protect 20 percent of the lands in the Chesapeake Bay Watershed by 2010. The 400,000-acre goal is based on both achieving the Chesapeake Bay commitment and in advancing important land preservation in Virginia's southern river watersheds. When he announced the additional 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. BR>

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.

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: **2006**

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. The only state program that has a specific mandate regarding the improvement of local land use decisions is the Chesapeake Bay Preservation Act, which has been focused on these issues for the past 17 years. The Act has resulted in the adoption of ordinances and development of environmental criteria within comprehensive plans that address the issues of conservation and sustainable land use. DCR's Division of Chesapeake Bay Local Assistance (DCBLA), in partnership with EPA and several other state agencies initiated a series of workshops on Land USe & Water Quality in the summer of 2006. The workshops covered the integration of watershed management into local land use codes, low impact development and riparian buffer management. Approximately 300 local government officials, developers and engineers attended these workshops and provided very positive feedback regarding the quality information provided. DCBLA also continues to provide education and outreach by providing technical assistance to local elected officials and staff and disseminating materials such as the 'Got Buffer' brochure and the 'Riparian Buffers Modification & Mitigation Manual'. 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.

recently sponsored "Clarity, Land Use and Water Quality," a series of three workshops which focused on watershed planning, low impact development and riparian buffer enhancement and management.

For the first workshop, EPA's Chesapeake Bay Program Office partnered with DCR to present "Integrating Land Use and Watershed Planning." Held on June 8, 2006, the workshop explored the fusion of watershed management planning and land use planning within Virginia's Chesapeake Bay watershed. Speakers described useful ideas, tools and techniques that incorporate watershed planning into the traditional land use planning framework and local efforts to address nonpoint source pollution and existing environmental regulations.

Co-sponsored by the Home Builders Association of Virginia and DCR, the "Low Impact Development Workshop" on September 12, 2006 offered a practicum on how to incorporate Low Impact Development (LID) techniques into new development projects. Virginia case studies for successful and unsuccessful LID projects were presented, followed by a roundtable discussion that included both developers and local regulators. Presentations highlighted the selling points regarding the virtues of LID practices for contractors and the use of LID techniques to address stormwater management and water quality requirements. The workshop also isolated existing impediments to the widespread use of LID to help local governments take practical steps to encourage smart development.

The "Introduction to Riparian Buffers Workshop" was held on September 19, 2006 and featured comprehensive information on the restoration and management of riparian forest buffers. DCR partnered with Virginia Institute of Marine Science and the Virginia Department of Forestry to explain the value of buffers and convey their efficiency as a water-quality safeguard. Discussions included local issues and concerns surrounding buffer management, and methods for buffer restoration using native plants.

All of the workshops were very well received, with more than 400 attendees. In the coming year, DCR will sponsor a workshop focused on local Bay Act program implementation issues and solutions.

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. While 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, staff from the DCR Division of Chesapeake Bay Local Assistant have initiated efforts to provide technical assistance on sound land use management to localities outside of the 84 Tidewater localities.

The Office of Farmland Preservation in the Department of Agriculture and Consumer Services has been serving as staff for the Farmland Preservation Task Force, which to date has developed "A Model Purchase of Development Rights (PDR) Programs for Virginia - Part 1: Suggested Components of Local PDR Programs" and "Part 2: Suggested Components for the State PDR Element and Guidelines to Assist Local PDR Programs." These were released to the public in November, 2005.

Progress/Outlook

DCR DCBLA will continue to provide land use and watershed 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 sponsored another initiative to provide conservation planning tools directly to localities – a Forum on Green Infrastructure for localities of the Middle Peninsula, Northern Neck, neighboring counties as well as localities in the Hampton Roads region. There were three workshops in the Middle Peninsula region, held on October 19 and November 9, 2005, and May 16, 2006, which provided the 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, to make regionally contextualized but locally driven green infrastructure design a reality for this area. In the Hampton Roads region, there were two workshops, one on May 25, 2006 and the second on September 14, 2006. The first workshop provided an overview of Green Infrastructure projects underway in the mid-Atlantic region in order to provide local government staff with a better understanding of available Green Infrastructure resources and to foster exchange of information among federal, state and regional Green Infrastructure efforts. The second workshop focused on funding and implementation issues associated with Green Infrastructure efforts. We hope these two processes 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: **2006**

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 and discussed under 4.1.1 will provide additional data tools for local governments and other conservation partners.

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

Additional Efforts
DCR is also actively acquiring additional geospatial 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 biotic factors that influence stream water quality (for water quality protection and improvement)
- Prime agricultural lands (for Agricultural Reserves)

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

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: **2006**

Approach to Implementation
This commitment will be achieved through the implementation of the Chesapeake Bay Preservation Act, which as previously stated, 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 promoting sound land use (including those other commitments which will help achieve this), and finally, providing technical and financial assistance to targeted audiences to promote environmentally sensitive new development and redevelopment. Money for this exact purpose was initially allocated and distributed under the Chesapeake Bay Preservation Act, however, that funding was eliminated in 2002. However, 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 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. 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 the end of 2007. 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 LGSS, which is charged with developing a strategy to meet this commitment. The workgroup has developed draft parameters for the commitment, a definition of harmful sprawl, a baseline determination and a direction for a tracking system. The jurisdictions have agreed on the definition of harmful sprawl and the tracking methodology which will be RESAC. Virginia will not be required to provide or maintain a separate data system but may have to provide some data. The Commonwealth will need to develop and implement measures to reduce "harmful sprawl" development (however defined) of agriculture and forested lands to accommodate a fair share of the 30 percent target.

Progress/Outlook

Status of this commitment cannot be adequately assessed until the baseline is established, the target is set, and the measurement period is determined. Setting the baseline to track land conversion is in progress but delayed because RESAC land cover data is not available unitl 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.

Year: **2006**

Approach to Implementation

This commitment will be achieved through the implementation of the Chesapeake Bay Preservation Act, which as previously stated, 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 promoting sound land use (including those other commitments which will help achieve this), and finally, providing technical and financial assistance to targeted audiences to promote environmentally sensitive new development and redevelopment. Money for this exact purpose was initially allocated and distributed under the Chesapeake Bay Preservation Act, however, that funding was eliminated in 2002. However, 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 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. 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 the end of 2007. 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 LGSS, which is charged with developing a strategy to meet this commitment. The workgroup has developed draft parameters for the commitment, a definition of harmful sprawl, a baseline determination and a direction for a tracking system. The jurisdictions have agreed on the definition of harmful sprawl and the tracking methodology which will be RESAC. Virginia will not be required to provide or maintain a separate data system but may have to provide some data. The Commonwealth will need to develop and implement measures to reduce "harmful sprawl" development (however defined) of agriculture and forested lands to accommodate a fair share of the 30 percent target.

Progress/Outlook

Status of this commitment cannot be adequately assessed until the baseline is established, the target is set, and the measurement period is determined. Setting the baseline to track land conversion is in progress but delayed because RESAC land cover data is not available unitl 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.

Year: **2006**

Approach to Implementation

This commitment will be achieved through the implementation of the Chesapeake Bay Preservation Act, which as previously stated, 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 promoting sound land use (including those other commitments which will help achieve this), and finally, providing technical and financial assistance to targeted audiences to promote environmentally sensitive new development and redevelopment. Money for this exact purpose was initially allocated and distributed under the Chesapeake Bay Preservation Act, however, that funding was eliminated in 2002. However, 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 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. 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 the end of 2007. 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 LGSS, which is charged with developing a strategy to meet this commitment. The workgroup has developed draft parameters for the commitment, a definition of harmful sprawl, a baseline determination and a direction for a tracking system. The jurisdictions have agreed on the definition of harmful sprawl and the tracking methodology which will be RESAC. Virginia will not be required to provide or maintain a separate data system but may have to provide some data. The Commonwealth will need to develop and implement measures to reduce “harmful sprawl”

development (however defined) of agriculture and forested lands to accommodate a fair share of the 30 percent target.

Progress/Outlook

Status of this commitment cannot be adequately assessed until the baseline is established, the target is set, and the measurement period is determined. Setting the baseline to track land conversion is in progress but delayed because RESAC land cover data is not available unitl 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: **2006**

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 managemnet 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: **2006**

Approach to Implementation
This commitment will be achieved through a cooperative effort by state agencies 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 localities and the development community. For Tidewater Virginia, DCR DCBLA provides oversight of local government implementation of the sound land use management criteria contained in the Chesapeake Bay Preservation Act. Some programs have specifically begun to address the identification and removal of impediments to low impact development and minimization of water quality impacts.

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. . In September of 2006, partnering with VA Homebuilder's Association, DCR's Division of Chesapeake Bay Local Assistance hosted a LID Workshop that featured a diverse group of speakers and panelists discussing the nuts and bolts of LID implementation. Developers, engineers, the VA Departme nt of Transportation, and local government staff were all well represented. The workshop included information about the evolution of LID in VA as well as case studies focused on the use of LID in residential, commercial, and mixed-use settings. In addition, DCR DCBLA, as stated above, has initiated planning efforts to implement that component of Bay Act that focuses on the removal of barriers to Low Impact Development and Better Site Design. The planning phase will conclude at the end of 2007, and DCBLA will then initiate the process of working with and requiring localities to assess their ordinances and eliminate impediments to LILD and Better Site Design. Further, DCBLA will continue to conduct workshops on ways to incorporate these sound land use practices into local codes and ordinances. The DCBLA staff will also promote the incorporation of watershed management planning into the next component of Bay Act implementation.

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: **2006**

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. DCBLA will initiate a more coordinated effort to provide land use planning assistance based on the model that has been used in the Tidewater Virginia area. 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. DCBLA will initiate a more coordinated effort to provide land use planning assistance based on the model that has been used in the Tidewater Virginia area

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. In June of 2006, partnering with the EPA's Chesapeake Bay Program, DCR's Division of Chesapeake Bay Local Assistance hosted a Watershed Planning Workshop that examined the synthesis of watershed management planning and land use planning within VA's Chesapeake Bay watershed. Tools and techniques that incorporate watershed planning into traditional land use planning were explored, and technical assistance from the Chesapeake Bay Program and DCR was offered. Participants at this workshop included not only locality representatives from Tidewater Virginia but throughout the Bay Watershed as well.

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. DCBLA is in the process of developing a tool box of watershed and sound land use strategies, based on the experience with implementing the Bay Act, that can be used by localities outside of Tidewater Virginia and which can be modified as necessary to suit the unique physiographic conditions outside of the Tidewater area.

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.

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.

Department of Conservation and Recreation -

Year: **2006**

Approach to Implementation

State Role

Progress/Outlook

Additional Efforts

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

Department of Conservation and Recreation -

Year: **2006**

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

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

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

Additional Efforts

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

4.2.6 -

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

Department of Conservation and Recreation -

Year: **2006**

Approach to Implementation

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

State Role

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

Progress/Outlook

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

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 June of 2006 the Division conducted a workshop for planners and officials in the Chesapeake Bay Watershed to help them better understand the link between land use and watershed planning. This workshop provided localities with case studies or examples of how watershed planning efforts have been incorporated into comprehensive plans and provided practical tools to assist in their efforts to minimize the link between local land use decisions with negative water quality impacts. Finally, a LID Workshop for local government planners within tidewater Virginia was held in September of 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: **2006**

Approach to Implementation

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

State Role

State agencies involved: DCR, DEQ and VDOT. While no formal coordinated approach to this commitment has been developed, the agencies noted above are carrying out a number of programs and activities that contribute to the implementation of this commitment. Those efforts include continued enforcement of requirements for limiting impervious cover and reducing the impacts of impervious cover as performance standards for development, promotion of ecologically-based designs that minimize impacts to water quality, continued technical and financial assistance and distribution of educational materials and outreach programs such as better site design program to promote low impact development. Other efforts include erosion and sediment programs, stormwater management programs which help localities minimize impervious cover in developing areas and cooperative non-point source programs under the Water Quality Improvement Act. The last of these is a combination of local, state and federal programs to achieve a systematic means to improve water quality. Many state agencies have been involved in the work of the Low Impact Development Task Force which was assigned to develop a certification process for low impact development techniques in acheiving 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 June of 2006 the Division conducted a workshop for planners and officials in the Chesapeake Bay Watershed to help them better understand the link between land use and watershed planning. This workshop provided localities with case studies or examples of how watershed planning efforts have been incorporated into comprehensive plans and provided practical tools to assist in their efforts to minimize the link between local land use decisions with negative water quality impacts. Finally, a LID Workshop for local government planners within tidewater Virginia was held in September of 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.

System Administrator -

Year: **2006**

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.

Department of Conservation and Recreation -

Year: **2006**

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
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land disturbing activities on the right of way to obtain a responsible land disturber erosion an 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. Another effort was a partnership between the Homebuilders of Virginia and DCR DCBLA on an LID workshop that took place in September of 2006. The HBAV has indicated a strong desire to work with CBLA on the effort of reducing impediments to LID in local ordinances and codes.

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: **2006**

Approach to Implementation

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

Safe Drinking Water Act. However, the Act should encourage protection activities.

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

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

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

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

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

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 June of 2006 the Division conducted a workshop for planners and officials in the Chesapeake Bay Watershed to help them better understand the link between land use and watershed planning. This workshop provided localities with case studies or examples of how watershed planning efforts have been incorporated into comprehensive plans and provided practical tools to assist in their efforts to minimize the link between local land use decisions with negative water quality impacts. Finally, a LID Workshop for local government planners within tidewater Virginia was held in September of 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.

System Administrator -

Year: **2006**

Approach to Implementation
The 2004 General Assembly passed legislation which consolidated Virginia's stormwater management programs into DCR. With the consolidation, one governor-appointed board (Virginia Soil and Water Conservation Board)and one agency (DCR) became responsible for the permitting of municipal seperate 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: **2006**

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 reccomendation 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: **2006**

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). These amendments will result in a quantum leap in the useful life and water quality/public health protection derived from new septic systems. As well, the regulations include more flexibility pertaining to alternative and innovative on-site treatment systems. 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 Acconack, 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 Conservation and Recreation -

Year: **2006**

Approach to Implementation

Efforts to develop a brownfields and voluntary cleanup program that encourages and provides incentives for program participants are ongoing. By understanding and appreciating the challenges brownfield participants face, the program is finding ways to provide equity to brownfield projects to help level the paying field between greenfields and brownfields. Recent state and federal legislation provides critical legal and financial incentives to encourage brownfield redevelopment. DEQ recently released its program guidance manual 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. VA's role in strengthening brownfields redevelopment includes facilitation of projects through reasonable regulatory requirements and technical assistance. DEQ works cooperatively with brownfield participants to help them understand how to implement available incentives, apply for grants, and navigate the brownfield process.

Progress/Outlook

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

Additional Efforts

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

Department of Environmental Quality -

Year: **2006**

Approach to Implementation

Redevelopment and reuse successes continue to be realized with the help of 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 help facilitate brownfield projects and "level the playing field" between greenfields and brownfields.

State Role

State government participants include: DEQ, VRA and VEDP.

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, realize substantial economic development, seek enhanced environmental outcomes, 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 commitment to successes. The results have been significant and DEQ continues to help leverage beneficial federal brownfield activities.

Through 2006, DEQ has reported 73 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, and working with state agencies to find synergies and focus resources. DEQ continues to assist governmental entities by supporting their federal brownfield grant efforts.

4.2.13 -
Working with local governments, encourage the development and implementation of emerging urban storm water retrofit practices to improve their water quantity and quality function.

System Administrator -

Year: **2006**

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.

System Administrator -

***Year:* 2006**

Approach to Implementation

The commonwealth will continue to work with local governments, planning district commissions (PDCs) and metropolitan planning organizations (MPOs) to encourage coordination of transportation and land use planning.

State Role

State government participants include: VDOT. Under state law in Virginia land use decisions are the responsibility of local governments. Therefore, the local governments are the primary level of government to address land use decisions in Virginia. The local governments rely on the planning district commissions (PDCs) and the metropolitan planning organizations (MPOs) to facilitate the coordination of transportation and land use decisions. VDOT currently assists in the development of Constrained Long Range Transportation Plans for 14 Metropolitan Planning Organization areas (urbanized areas, pop. of 50,000 or more). These plans identify transportation network deficiencies and recommend improvements. VDOT receives input from local jurisdictions on projected land use and employment locations, which is used in the model development to determine future traffic patterns. Projected future land use is based on local comprehensive plans, and local input. These plans are inter-modal and updated every 3-5 years. VDOT also develops Small Urban Area Plans for 44 urban areas that have a population below 50,000. These Plans were developed as a joint effort between the Virginia Department of Transportation and the urban areas. These plans are inter-modal in nature, and are updated every 5 years. These transportation plans are the product of studies that evaluated the transportation system in the urban areas and recommended a set of transportation improvements to best satisfy existing and future transportation needs. The study identified needs based on the engineering analysis, capacity, and safety of the transportation system. Effective transportation systems are essential to continued economic growth and development in these areas as well as the Commonwealth of Virginia as a whole. Providing for the safe, effective and efficient movement of people and goods is a basic goal of all transportation programs in Virginia. It is with this basic goal in mind, and with further consideration of environmental issues and local government transportation objectives, that this transportation plan was developed. The Virginia Department of Transportation (VDOT) will use this plan when evaluating requests from the local governments for specific transportation projects, and when implementing projects on the VDOT-maintained roadway system. The recommendations in these plans will be used as part of the VDOT statewide transportation planning process to ensure that local transportation projects are compatible with and support transportation improvements both statewide and in neighboring localities.

VDOT is an active proponent of Rural Transportation Planning. Virginia has 21 regional planning agencies known as Planning District Commissions. VDOT provides each of these PDCs annual funding to conduct rural transportation planning which can include: assisting localities with the update of the transportation elements of local comprehensive plans, developing regional bicycle and pedestrian plans, and assisting VDOT with development of Statewide Transportation Plan efforts. VDOT is currently requiring each to develop a transportation plan with the funds the Department

provides.

VTrans2025 is an action plan with recommendations, strategies, and concepts for a new way of planning for our transportation systems of the future are currently under implementation.

Progress/Outlook

VDOT secured a grant from Federal Highway Administration (FHWA) to develop recommendations to link transportation planning and National Environmental Policy Act (NEPA). FHWA and Congress identified the linkage of planning and NEPA as one of the most effective methods to achieve environmental streamlining. A study team has continued to evaluate this issue. At this point, our draft report and recommendations have identified promising opportunities to improve the coordination of transportation and land use planning.

The 2006 General Assembly passed a number of land-use reforms, including measures proposed by the Governor.

Senate Bill 699, requiring traffic impact statements to be created for new rezoning requests, so that local planners will know how much traffic would be generated before they act on a request. The Department of Transportation will also provide comments on proposed changes to local comprehensive plans before they are adopted, to help localities understand the effect changes might have on local roads

House Bill 681 is a revenue-sharing bill that allows state and local governments to work more closely together on some projects, granting localities greater decision-making authority and responsibility for project construction. This helps localities better understand the cost of transportation solutions and the effect of their land use decisions.

Senate Bill 373, legislation addressing transfer of development rights, will allow communities to help guide development toward more efficient patterns while protecting the property rights of local landowners. TDR programs will allow landowners in areas marked for conservation to voluntarily trade their development rights to parcels in developed areas, and to be compensated for their loss of property value.

Senate Bill 412 strengthened the Intermodal Office, giving the office the specific charge to advocate for better links between roads, rail, air and sea ports, and to develop performance measures for state and regional efforts to connect our transportation network.

Additional Efforts

VDOT is participating and leading many initiatives that support this goal.

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

System Administrator -

Year: **2006**

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

Progress/Outlook
Bike Smart Grant Gets Safety Program Rolling - Five Virginia schools have received $5,000 Bike Smart grants for the purchase of bicycles and helmets for students to use in physical education classes. Bike Smart is a joint project of VDOT and the Virginia Department of Health that includes a two- to three-week health and safety course for seventh graders on biking safety. Rural Transportation Planning (RTP) grants - 9 grant proposals totaling $265,025 were awarded for Round Mountain Shared Use Trail Network, Town of Culpeper Sidewalk, Bikeway & Trail Master Plan, Route 20 Corridor Study, Phase II, Access Management Guidebook for Franklin County, Appomattox County Route 460 Corridor Study, Southside PDC Bicycle, Pedestrian & Trails Plan III, Amelia County Rte.153 Corridor Transportation Management Study, Charles City County Rte.5 Corridor Overlay Plan, and Amelia Courthouse Village Pedestrian Plan.

The General Assembly identified $4 million for ground transportation planning and research which is currently implementing. 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 an additional $1.5 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 has developed a state bicycle map depicting trails and on-road facilities along with safety and local clubs information. VDOT continues 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.

System Administrator -

Year: **2006**

Approach to Implementation

VDOT is working with other states agencies in identifying lands where significant natural resources exist to determine if their acquisition can be included as part of our projects compensatory mitigation packages.

State Role

VDOT purchases easements for compensatory mitigation for impacts to streams and wetlands, and for habitat preservation. VDOT has begun discussions with Nature Conservancy, Department of Natural Heritage and Department of Game and Inland fisheries to understand their plans to preserve wetlands and streams across the Commonwealth. VDOT will continue to implement projects in accordance with Virginia’s Storm Water Management Law.

Progress/Outlook

VDOT will continue to use a multi-agency approach along with our GIS to identify potential properties with significant natural resources areas for inclusion in project compensatory mitigation packages.

As for Storm water, VDOT uses a Stormwater Program Technical Team, and a Stormwater Program Policy Team to oversee the Department's program implementation of VDOT's Erosion and Siltation Control, Stormwater Management, VSMP Construction Permit and MS4 Programs.

Additional Efforts

Property owner willingness are needed to accomplish this commitment throughout the Bay Watershed. Expending transportation funds for the purchase of the easements for compensatory mitigation for project impacts will continue.

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: **2006**

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 2006. The guide identifies over 675 sites, 236 of which are in Virginia, this would mean that Virginia will need to provide approximately 49 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

During 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 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.

In 2006 the following 22 new access sites were added or enhanced. There are also four new state parks and a major addition to an existing state park.

- Middle Peninsula PAA– Acquired Brown Tract in King and Queen and Essex Co. on Dragon Run ~160 ac with trails / wildlife observation, bank fishing opportunities and medium parking (10-15 spa.) Purchased from paper co.
- Department of Forestry – Brown Tract in King and Queen on Dragon Run (This is a different site from the PAA acquisition, but was originally one parcel). The site has bank fishing, wildlife observation, {public hunting} and a medium parking area (10 – 15spa.). It is across the river from the PAA site, but they were purchased together. ½ managed by DOF and rest managed by PAA.
- In Mathews Co. a pier has been added to the Point Comfort Light House – The site is accessible by kayak or boat. It can be used for bank/pier fishing and wildlife observation, and makes the New Point Island Lighthouse more accessible.
- New Point Comfort NAP Mathews Co. (# 228 on map) - wildlife viewing and trails, small parking (<10 spa)

- Harborton Landing – Accomack Co. – Medium Parking (15-20 spa) boat ramp, bank pier fishing
- Chesterfield Co – Brown & Williamson Conservation Area on the James River- 360 ac – affords wildlife viewing & trails, limited parking (< 10 spa) with permit required at this time.
- Dutch Gap Conservation Area (#220 on map) Chesterfield Co. – Parking ~15, trails/wildlife viewing, and pier bank fishing *Route 301 Ramp – Hanover Co. (small parking ~10 spa.) boat ramp
- Cumberland Marsh NAP - New Kent Co. (# 229 on map) - wildlife viewing and trails, small parking (<10 spa)
- Great Wicomico River Fishing Pier on Route 200 – has pier fishing, restrooms, and medium parking (~15 spa.)
- Bush Mill Stream NAP – Richmond Co. (#226 on map) - wildlife viewing and trails, small parking (<10 spa)
- Honey Hollow NAP – Lancaster Co. – (#227 on map) - wildlife viewing and trails, small parking (<10 spa)
- Currioman Landing – Westmoreland Co # 231 on map. – Med. Parking (10-15 spa) boat ramp, bank pier fishing. *Urbana Town Marina – Urbana (# 233 on map) – Med Parking - ~ 20 spa. Boat ramp,
- Accomack County – Boat ramp at Sanford, called Hommock Ramp – 1 lane with 10-15 parking spaces – renovated by County last year- new ramp pavement – has been around for a while but does not appear on the access guide map.
- Sterling Harbor Ramp near Saxis– 2 lanes with medium lot > 15 spa. has slips for rent to recreational boaters and commercial fishermen. No other facilities James City Co.- Chickahominy Riverside Park –(#221 on map) – Boat ramp, parking, pier bank fishing large parking lot. >25 spa.
- Powhatan Creek Park – James City Co – (#222 on map) – Small parking lot < 15 spa. Bank& pier fishing, hand launch
- Bennetts Creek Ramp – Suffolk- (#223 on map)- med parking (10-15 spa) boat ramp, fishing pier
- Lynhaven Ramp – Va. Beach – (#224 on map)- Large Parking (>25 spa) boat ramps, bank pier fishing, swim beach, and restrooms,
- Grundlen Park –Hampton – (# 232 on map) – Med parking ~ 20 spa) –pier fishing, wildlife viewing and trails, and restrooms,
- Department of Game and inland Fisheries – No new sites to report, but major expansion/ enhancement of the York River Ramp in Gloucester County—Expanded and lighted parking, added a lane to boat ramp – now a double lane ramp – Site is 100 % ADA accessible.
- Cape Charles Fishing Pier – Adjacent to harbor, but on bay – has lighted, with restrooms, fish cleaning sta. and med parking ~ 15 spa
- Smith Landing in York Co. – Enhancement - added Boat Ramps, fishing Pier, parking > 0ver 25 w/ lighting and Restrooms ADA accessible
- DCR – NH - 2000 acres in Accomack Co. Marks and Jacks Islands – Wildlife viewing and trails, bank fishing, parking is limited,< 10 spaces, and access to water is unimproved at this point. – boat ramp near by that aids access to the property by boat.
- Wide Water State Park site on the Potomac River in Prince William County- 1089 ac. No facilities available at this time, but will add full range of access opportunities in the future
- York River State Park Site in Gloucester County – 430 ac. No facilities available at this time,

but will add full range of access opportunities in the future

- Chippokes State Park expansion – lower James River 263 ac. No facilities available at this time, but will add access opportunities in the future.
- Seven Bends State Park – North Fork Shenandoah River in Shenandoah Co. No facilities available at this time, but will add full range of access opportunities in the future.
- Powhatan State Park Site – Powhatan Co. 1600 acres, 2-miles frontage on James River. No facilities available at this time, but will add full range of access opportunities in the future.

In 2006 we are able to report 22 new sites and 3 enhanced sites, plus 2 previously unreported existing ramps in Virginia for 2005-2006 pursuant to 4.4.1 of the C2K Agreement. This does not include the State Parks acquisitions.

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. The state has acquired Widewater State Park (1089 acres) in Stafford County and a 430-acre site in Gloucester County on the York River as well as the 700-acre Seven Bends State Park on the North Fork Shenandoah in Shenandoah County, and the 1600-acre Powhatan State Park on the James River in Powhatan County. Additionally, property has been acquired that adds 263- acres to Chippokes State Park in Surry County. The new parks have not been developed and are not open to the public. 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. The Middle Peninsula Planning District has several new sites in process, but will be later in ‘06-07 before acquisition is complete. Two parcels will encompass over 500 ac. plus 4 or 5 of the old VDOT ferry landings are being added to their system through the Public Access Authority.

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: **2006**

Approach to Implementation

Local governments, citizen advocates and state agencies cooperate in inventorying the public access and use areas along a river corridor. Maps and guides are produced that allow trip planning on the water body.

State Role

DGIF manages a comprehensive system of public access areas throughout the Bay region in cooperation with many local governments and user groups. DCR works with local governments, citizens groups, organizations and state agencies to inventory and map system components and then help publish and distribute the maps.

Progress/Outlook

Progress continues. Before 2005 467 miles had been mapped and published including the James River below Richmond, the Potomac River from Washington, DC to Smith Point, the York River system (Mataponi, Pamunkey,York), the Occoquon, Rivanna, middle Rappahannock, and various small rivers in Chesapeake, Virginia Beach and along the rivers and embayments of the Middle Peninsula and Northern Neck. The Capt. John Smith Water Trail, James River map series was published in 2006. It did not add additional miles to the system, but it did help bring attention to water trails and their multiple benefits. The following 39.4 miles of new water trails were added in 2005-6.

1. South Fork Shenandoah River from Port Republic to Shenandoah. (24 miles)
2. York County Blueways-9 local water trails that provide paddling/boating in estuaries of the county-Black Creek-2 segments, Old Wormley Creek-2 segments, New Quarter Park-2 segments, Smith Landing Trail-3 segments, and the York River Trail {addition to existing designated trail} (5.7 miles)
3. Mathews County- Five new local water trails on tributaries of the Bay-Rigby Island upper reach, Garden Creek upper reach, and Urbanna Creek (2.6 miles)
4. West Point Blueway- (.7 miles)
5. Northern Neck Water Trails- four short segments on Monroe Bay, Great Wicomico, Fleets Island, and Totuskey Creek (6.4)

The addition of 39.4 miles of water trail brings Virginia's total mileage of water trails to 506.4 miles

Additional Efforts

The York River portion of the Captain John Smith Water Trail is under development and will be completed in 2007. This will not add additional miles to the system, but it will bring additional attention to the river system.

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: **2006**

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 to 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. Additionally, the Gateways Program encourages and assists sites in the development of interpretive materials, programs.

State Role

State government participants include: DCR, DHR, local governments, and non-profits. Work with sites and Gateways program staff to enhance program objectives. Serve on Gateways Working Group to help NPS manage program.

Progress/Outlook

Progress continues. 42 sites are currently members and new Gateway sites are added each year. The quality and distribution or educational materials continues to improve.

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: **2006**

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. Several additional gateway sites have applied for designation and could be added soon. 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

to reach farmers in an attempt to increase the amount of agricultural BMPs called for in Virginia's tributary strategies. Eight focus groups were held across the Chesapeake Bay watershed with farmers, soil and water conservation district staff, NRCS staff and extension agents to get their perceptions of conservation practices and the government agencies providing support. The data from this research is being used to develop a communications plan that will be implemented in early 2007. 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 Chesapeake Club campaign as previously mentioned and is developing a marketing approach approach to increase farmers' use of conservation practices, also previously mentioned. Also 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: **2006**

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 developed a 20-minute video geared toward local government officials. Again CBIG funds are being used. These watershed management guides and DVDs are being used by DCR's Chesapeake Bay Local Assistance staff as they work with localities on their "Phase III" reviews of land management ordinances and practices. They are using these tools to promote a more comprehensive watershed management approach in the Bay Act localities. In addition, 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. DCR's Bay Act "Phase III" reviews provide an opportunity to share some of these tools and the concept of watershed management planning with Bay Act localities.
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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.

System Administrator -

Year: **2006**

Approach to Implementation

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 statewide. 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. New supplementary curriculum materials, including Virginia's Water Resources: A Tool for Teachers, have been developed and used in conjunction with existing high-quality resources to promote meaningful watershed field experiences across grade levels.

Survey results from the VA Department of Education indicate that 100% of VA schools have academic standards related to watersheds and the Chesapeake Bay. Approximately 76% of those responding report spending adequate instructional time on the standards. DEQ estimates that less than 25% of the Class of 2005 had a meaningful experience and approximately 3% of Virginia's 1 million students in the watershed have a meaningful 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 Grants (VEE and DCR provide mini-grants). The General Assembly provides modest funding to the Chesapeake Bay Foundation for watershed field experiences that reach about 7,000 Other sources such as soil and water conservation district education programs also are of assistance.

Additional Efforts
Meeting this objective by 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.

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.

Department of Environmental Quality -

Year: **2006**

Approach to Implementation
Through the interagency work group, Virginia Resource Use Education Council, materials are

developed, teacher and natural resource professionals are trained, successful models at various grade levels have been shared, and activities are correlated with the Standards of Learning. Enhanced building and central office administrative support is a new area of focus.
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State Role
State government participants include: DCR, DEQ, DOE, DGIF, DHR, DOF, SMV, VCE, VIMS and VMNH.

The Commonwealth's role in meeting this objective is to continue as an active partner in the Chesapeake Bay Program, primarily through participation in the Communication and Education Subcommittee. The commonwealth will continue to support the program and the subcommittee's work as it develops strategies for more closely working with state institutions of higher learning to integrate Bay and watershed data in university programs. The Virginia Office of Environmental Education coordinates interagency efforts.

Progress/Outlook
DOE staff has been active in the CBP. They attended the third Bay Program Education Summit that was held in September 2005 in Pennsylvania and recruited Virginia teachers and administrators. DOE staff has helped recruit school divisions to participate in a NOAA funded project lead by DEQ. DEQ works with them to provide instructors for the annual Virginia Association of Science Teachers professional institute. Last year more than 1,000 teachers attended with 30 classes offered on watershed topics.
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Additional Efforts
Developing programs with higher education faculty (science education methods) is helping to forge partnerships with institutions of higher education.
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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.

Department of Environmental Quality -

Year: **2006**

Approach to Implementation
Through Virginia Naturally, the Commonwealth's environmental education program, natural

resources agencies, the state museums, and DOE continue to coordinate ongoing mailings, informational meetings, workshops, and electronic communications to share information about watershed monitoring, protection, and restoration programs suitable for student and teacher involvement.

State Role

State government participants include: CBLAD, DCR, DEQ, DGIF, DHR, DOE, DOF, SMV, VCE, VIMS, and VMNH. These comprise most agencies represented on the Virginia Resource-Use Education Council, the interagency advisory group for Virginia Naturally.

The Commonwealth's role in meeting this objective is to ensure that key school personnel and school division central office contacts have current information about the various watershed monitoring, protection, and restoration programs that can involve teachers and students both at school sites and in the community.

Progress/Outlook

Information about school- and community-based watershed stewardship programs and activities has been made available by state agencies and their other public and private partners through the Virginia Naturally initiative, mailings, teacher workshops, and various professional meetings. Through the partnership with the VA Department of Education, service learning fundings (approximately $300,000 for the next 3 years) are being directed toward watershed restoration activities. Exemplary stewardship programs will continue to be highlighted via the Virginia Naturally School Site Recognition Program to serve as models for other schools and are now being published in the Virginia Wildlife magazine.

Additional Efforts

Meeting this objective will require ongoing communication and training sessions with key school division personnel and classroom teachers. Demands for assistance from natural resource agencies will continue to grow.

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.

System Administrator -

Year: **2006**

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

Input received from local entities was included in Tributary Strategies. Development of the strategies for each VA Bay watershed was completed in 2005. Implementation of the Tributary Strategies continued throughout 2006 as mentioned in the programs described. Additionally, $2,268,000 of Virginia Water Quality Improvement Funding is being matched and utilized for viable projects throughout the Virginia Bay watershed to carryout Tributary Strategy implementation.

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.

System Administrator -

Year: **2006**

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. In 2006, this increased substantially from previous years.

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. For 2006, this resource of grant funding continued. Additionally, NFWF administered the first program for EPA funding for the Chesapeake Bay Targeted Watersheds grant. While multiple proposals were submitted by various Virginia entities, 3 such grants were awarded to Virginia Polytechnic Institute and State University (VATech).

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

System Administrator -

Year: **2006**

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. In 2006, there was consideration to transfer local watershed planning linkage responsibilities from the Division of Soil and Water Conservation to the Division of Chesapeake Bay Local Assistance, which houses urban planning staff. The staff within Soil and Water, especially field staff in the regional offices, would continue to promote and encourage local watershed planning throughout the regions served. While this decision has not been finalized, staff in both divisions will continue to work with local government officials promoting watershed planning and conservation measures accounting for nutrient reductions. Tracking of these plans and measures will continue. Additionally, Virginia participated in beginning stages of developing the Chesapeake Nonpoint Source Education for Municipal Officials (NEMO) in 2006. Furthermore, there is an effort at the state level to develop a "Virginia NEMO" and currently steps are being taken to set up pilot project which may begin by early 2007 or sooner.

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: **2006**

Approach to Implementation

The Internet will be the principal medium for providing access to suitable information. Internet browser access is necessary for this process to be beneficial. Data should be retrievable for the smallest form of hydrologic unit for which the state currently catalogs data for its own use. For the data to be retrievable in units that meet this spatial requirement, 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 hydrography-based spatial unit references.

State Role

State agencies with relevant information should develop and maintain publicly-accessible websites in order to maximize ease of access to this data. 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. These agencies work together as part of GIS user groups and as partners with VITA in the development of standards and tools. Most also have close associations with other oversight groups with similar goals.

Progress/Outlook

No concerted effort has been made by the state agencies to standardize on a similar system of data retrieval. By and large however their systems are similar as most agencies employ the same processes. This includes direct online database access and map services. A standard for defining watersheds (actually hydrologic units) does exist however. It was recently updated by DCR to define 5th and 6th order units on Virginia in accordance with the standards of the National Watershed Boundary Dataset (NWBD). This layer is available to all from the DCR Hydrologic Unit Geography web page.

VITA, the central information management agency in VA, has been concentrating their GIS development and organization efforts on non-environmental data and applications. Most environmental data is best accessed from the individual agencies that are responsible for its development. Knowing which agency has what data has been set back by the loss of a metadata clearinghouse previously managed by VITA. VITA plans to resume this role this year.

DCR has implemented the browser approach with some of its data. Currently the Animal Feeding Operations database, NPS assessment land cover, NPS nutrient loadings, NPS nutrient rankings, best management practices (BMP), conservation reserve enhancement practices (CREP), natural heritage resource locations, and conservation sites data are available as queryable online databases. All of this data is available by various standard reporting units, such as NWBD 6th order units, NWBD defined basins, Chesapeake Bay model segments, Soil and Water Conservation Districts, physiographic regions, and jurisdictions of the Commonwealth. Access is made through the appropriate program specific pages of the DCR web site. Data records output from queries built using menus can be viewed or retrieved for use in a spreadsheet, etc. at the user end.

Various map services have also been deployed to allow users to view data in overlay fashion. Uses choose the data they want to see overlayed amongst those offered by the map service. They have the ability to do scrolling/panning and database record display without the need of a local GIS. Currently the Conservation Lands and NPS Assessment information for Virginia is available as web based map services, providing graphical representations of statewide conditions at the hydrologic unit level.

DCR's Natural Heritage Program also makes natural heritage information available on a more restrictive basis through their Data Explorer subscription web application. Access through the subscription service allows you to to identify and get reports on natural heritage resources in the

vicinity of an entered polygon such as a small watershed.

DGIF also makes similar data available over the web on a subscription service. DEQ continues to extend on what data can be browsed from their Geographic Environmental Mapping System website. They also distribute relevant data on CD along with each edition of the state's Water Quality Assessment (305b) Report. VIMS have data for their spatial areas of concern that are relevant to this goal as well.

Additional Efforts

Most of the state data is at a scale which, 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. State agencies are increasingly capable of using and adapting local level data however.

Some state agency data will soon be distributed across the EPA's National Environmental Information Exchange Network (NEIEN) and the Mid-Atlantic Information Node of the USGS NBII. The process of making data available in this manner is underway now.

An additional track for making data available is also being deployed by Virginia state agencies – making spatial data available as feature map services. This process differs from the more ubiquitous image map services in that the spatial layer chosen can be viewed as an overlay in a local GIS or GIS layer viewer. New clients will soon be available to make this form of data more easily accessible to users.

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.

System Administrator -

Year: **2006**

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

Virginia is supportive and participatory in the CBP efforts of reevaluation. This task is planned to continue into 2007.

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

System Administrator -

Year: **2006**

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. While some of the web-based information has evolved, a stable and primary linkage between the state and local governments remains the DCR regional offices. Staff at the regional offices interact on a regular basis with local government staff, officials and politicians. Local Soil and Water Conservation Districts address state-level issues in a formal manner every month and often maintain liaison contact on a weekly basis. Additionally, regional watershed conservation roundtables base their agendas on Tributary Strategies and water quality improvement efforts.

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. These grants were initiated in 2006 and progress is being made to establish and enhance local government infrastructure, in addition to implementing nutrient-reducing measures through projects now proceeding.

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.

System Administrator -

Year: **2006**

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.

For additional progress in 2006, see commitment numbers: 2.2.1, 2.2.3, 5.2.1, 5.2.2 and 5.2.6.

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.

System Administrator -

Year: **2006**

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. The issue of this commitment is certainly being addressed through many of the TMDL plans and subsequent TMDL Implementation Plans. Since the TMDL studies pinpoint the source of fecal coliform bacteria in the impairments where that is the cause, socio-economic issues have certainly been addressed. It is a sometimes long and challenging process to correct problems of straight pipes and dysfunctional septic systems. However, since many local stakeholders become engaged in the TMDL Implementation Plan, multiple resources are brought in to the process, bringing many professional considerations to the best means to address the problems.

5.3 - Government by Example

5.3.1 -
By 2002, each signatory will put in place processes to: 1. Ensure that all properties owned,

managed or leased by the signatories are developed, redeveloped and used in a manner consistent with all relevant goals, commitments and guidance of this Agreement. 2. Ensure that the design and construction of signatory-funded development and redevelopment projects are consistent with all relevant goals, commitments and guidance of this Agreement.

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

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

System Administrator -

Year: **2006**

Approach to Implementation

State Role

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

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

Additional Efforts

This commitment was completed December 2001.

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.